



Curtis Park Village Project

Project# P04-109

State Clearing House # 2004082020

Final Environmental Impact Report

Volume II: Appendices A-L

PREPARED FOR THE
CITY OF SACRAMENTO

FEBRUARY 2010



CURTIS PARK VILLAGE FEIR APPENDICES

Appendices

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APPENDIX A

Date: September 15, 2009

Memorandum

To: Samar Hajeer, City of Sacramento
From: Debbie Yueh and Mark Bowman
Subject: Curtis Park Village – Trip Generation Comparison

Dowling Associates prepared a revised transportation and circulation analysis for the Curtis Park Village project in summer 2008. The analysis was incorporated in the Transportation and Circulation Section of the Curtis Park Village Draft EIR (DEIR). In November 2008, the applicant submitted a revised application with similar roadway network but different land use mix that forms the basis of the Proposed Project in the DEIR. Consequently, a comparison of the amount of project generated trips generated by these two land use mixes was performed. The results were presented in the Trip Generation Comparison of Different Land Uses memorandum dated December 8, 2008 and included in the Appendix of the DEIR.

After the circulation of the DEIR and during the Response to Comments period, the applicant proposed a slight land use modification of the Proposed Project. The purpose of this memorandum is to present a trip generation comparison of the Current Proposed Project and the one analyzed in the DEIR and determine if any new significant impacts would result from the Current Proposed Project. A summary of the following land use assumptions are present in Table 1.

- Project Proposed in the DEIR
- Project Analyzed in the Transportation and Circulation Section of the DEIR
- Current Proposed Project

Trip Generation Comparison

A trip generation analysis was performed using the same methods described in the Transportation and Circulation section of the DEIR. In considering the trip generation summaries, three items should be noted. The DEIR Proposed Project and Current Proposed Project include 38,000 square feet of Retail Commercial space in Area 3. This space is designated for entertainment use in the project description. However, upon consultation with the City, it is classified in a more inclusive category of Retail Commercial (Shopping Center) for the purpose of analysis.

Table 1 Land Use Summary

Land Use	DEIR Proposed Project	Project Analyzed in DEIR	Current Proposed Project
Grocery Store	53,500 sq ft	53,500 sq ft	53,500 sq ft
Book Store	25,000 sq ft	25,000 sq ft	25,000 sq ft
Other Retail Commercial	135,000 sq ft	92,100 sq ft	129,500 sq ft
Restaurants	2 x 6,500 sq ft	2 x 6,500 sq ft	2 x 6,500 sq ft
Dinner Theater/Athletic Club	38,000 sq ft	42,435 sq ft	38,000 sq ft ¹
Health Spa	NA	85,000 sq ft	NA
Hotel	NA	150 rooms	NA
Single Family Residential Units	183 units	216 units	190 units
Multi-Family Residential Units	212 units	NA	248 units
Senior Independent Living Apartments	80 units	NA	90 units
Park/Open Space Area	7.2 acres	7.2 acres	6.9 acres ²

¹ May be used as dinner theater or athletic club

² Approximately 1.5 acre of the park/open space area is designed as an open amphitheater

Further, under the Current Proposed Project, another 38,000 square feet of space would be used as either a Dinner Theater or an Athletic Club. Because the Athletic Club would generate higher number of trips in all the study periods, this land use was assumed for the purpose of the analysis. Should the space be occupied by a dinner theater instead, the number of trips generated would be lower than indicated. The Current Proposed Project also includes an approximately 1.5- acre open amphitheater in the open space area. Events in the amphitheater would typically be held in the off-peak periods and on weekends. Any such events would be required to provide special event plans for review by the City.

After the DEIR analysis was performed, the Institute of Transportation Engineers published a more recent edition of *Trip Generation*. A summary of the trip generation for the land use mix as analyzed in the DEIR and the Current Proposed Project is provided in Table 2. More detailed trip generation information is provided in Tables 3 and Table 4 and in the attachments.

Table 2 New External Trip Summary

Land Use Scenario	Weekday	AM peak hour			PM peak hour			Saturday peak hour		
		In	Out	Total	In	Out	Total	In	Out	Total
Current Proposed Project (ITE 8 th ed.)	15,166	367	376	743	891	703	1,596	931	822	1,754
Project Analyzed in DEIR (ITE 7 th ed.)	16,030	365	335	699	901	748	1,649	1,005	815	1,818

Note: Some totals do not add up due to rounding

The most recent *Trip Generation, 8th Ed.*, was used to estimate trip generation for the Current Proposed Project and was compared against the trip generation for the Project Analyzed in the DEIR (ITE 7th ed.) to determine if significant impacts may result from the Current Proposed Project that were not identified in the DEIR. The Current Proposed Project would generate fewer daily, PM and Saturday peak hour trips than the Project Analyzed in the DEIR; however, the Current Proposed Project would generate 44 more trips during the AM peak hour. A review of the DEIR traffic analysis indicated that the addition of 44 AM peak hour trips would not result in any new significant impacts or worsen significant impacts identified in the DEIR to create residual significant impact after recommended mitigation measures are implemented for either the Baseline or Cumulative conditions since the PM peak hour is more critical than the AM peak hour traffic.

Conclusion

The Current Proposed Project would not cause any new significant impacts nor significantly worsen significant impacts that were identified in the DEIR. The Current Proposed Project would generate fewer daily, PM and Saturday peak hour trips than the Project Analyzed in the DEIR. The Current Proposed Project would generate 44 more trips (6 percent) during the AM peak hour than the Project Analyzed in the DEIR. The increased number of AM peak hour trips is primarily attributed to the Athletic Club use in Area 3 of the project site.

The standard for determining significance in the DEIR was LOS C traffic operations. The current level of service standard under the new General Plan is LOS D. It should also be noted that the trip generation under the Current Proposed Project scenario would be reduced if a dinner theater, instead of an athletic club, is developed on the site.

Table 3 Trip Generation – Current Proposed Project (using ITE Trip Generation 8th edition)

Land Use	Amount		Trips Generated									
			Weekday	AM Peak Hour			PM Peak Hour			Saturday		
				In	Out	Total	In	Out	Total	In	Out	Total
Retail	130	KSF	8,034	109	70	179	370	386	756	527	487	1,014
Retail / Grocery Store	54	KSF	4,973	117	75	192	300	289	589	296	284	580
Retail / Bookstore ¹	25	KSF	5,184	71	45	116	254	234	488	282	251	533
Restaurants	13	KSF	1,653	78	72	150	86	59	145	97	86	183
Athletic Club	38	KSF	1,634	69	44	113	144	89	233	124	129	253
Multi-Family Residential ²	248	Units	1,626	25	100	125	100	54	154	75	64	139
Senior Adult Housing - attached	90	Units	313	4	8	12	8	6	14	14	14	27
Single-Family Residential	190	Units	1,877	36	107	143	118	69	187	94	83	177
Park/Open Space	7	Acres	11	0	0	0	0	0	0	1	1	2
Total Project Trips			25,307	509	521	1,030	1,380	1,186	2,566	1,509	1,399	2,908
Transit Adjustments ³												
Retail (-1.8%)			-145	-2	-1	-3	-7	-7	-14	-9	-9	-18
Grocery Store (-1.8%)			-90	-2	-1	-3	-6	-5	-11	-5	-5	-10
Bookstore (-1.8%)			-93	-1	-1	-2	-5	-4	-9	-5	-5	-10
Restaurant (-1.8%)			-30	-2	-1	-3	-2	-1	-3	-2	-1	-3
Athletic Club (-1.8%)			-29	-1	-1	-2	-2	-2	-4	-2	-3	-5
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1%)			-109	-2	-8	-10	-8	-5	-13	-6	-5	-11
Total Transit Adjustments			-505	-10	-13	-23	-30	-24	-54	-29	-28	-57
Internal Trips			-5,840	-82	-82	-165	-255	-255	-509	-320	-320	-640
Pass-by Trips (31% of net retail trips) ⁴			-3,796	-50	-50	-99	-204	-204	-407	-229	-229	-457
New External Trips			15,166	367	376	743	891	703	1,596	931	822	1,754
¹ Trip generation for Weekday and AM peak hour of Bookstore were based on trip generation ratio of Retail/Shopping Center. ² Trip generation for Saturday peak hour was based on data from Low Rise Apartment (ITE 221) ³ Transit adjustments and transit trips for restaurant and theater are assumed to be the same percentage as for retail use. ⁴ Pass-by adjustments are made for shopping center, grocery store and bookstore only ⁵ The Saturday distribution for Senior Adult Housing – attached is based on Senior Adult Housing – detached (ITE 251) * Some totals do not add up due to rounding												
Sources: Dowling Associates, Inc. 2009												

Table 4 Trip Generation – Land Use As Analyzed in DEIR (using ITE Trip Generation 7th edition)

Land Use	Amount		Trips Generated									
			Weekday	AM Peak Hour			PM Peak Hour			Saturday		
				In	Out	Total	In	Out	Total	In	Out	Total
Retail	92	KSF	6,439	91	58	149	285	308	593	427	394	821
Retail / Grocery Store	54	KSF	4,973	128	82	210	290	279	569	312	299	611
Retail / Bookstore ¹	25	KSF	5,299	75	48	123	254	234	488	282	251	533
Restaurants	13	KSF	1,653	78	72	150	87	55	142	164	96	260
Dinner Theater	560	Seats	1,602	9	8	17	98	48	146	124	87	211
Hotel	150	Rooms	969	41	27	68	47	42	89	35	41	75
Health Spa	85	KSF	2,799	43	60	103	175	169	344	111	111	221
Single-Family Residential	216	Units	2,112	40	121	161	135	79	214	110	93	203
Park/Open Space	7	Acres	11	0	0	0	0	0	0	1	1	2
Total Project Trips			25,857	505	476	981	1,371	1,214	2,585	1,566	1,373	2,937
Transit Adjustments ²												
Retail (-1.8%)			-116	-2	-1	-3	-5	-6	-11	-8	-7	-15
Grocery Store (-1.8%)			-90	-2	-2	-4	-5	-5	-10	-6	-5	-11
Bookstore (-1.8%)			-95	-1	-1	-2	-5	-4	-9	-5	-5	-10
Restaurant (-1.8%)			-30	-2	-1	-3	-2	-1	-3	-3	-2	-5
Dinner Theater (-1.8%)			-29	0	0	0	-2	-1	-3	-2	-2	-4
Hotel			0	0	0	0	0	0	0	0	0	0
Health Spa (-1.8%)			-50	-1	-1	-2	-3	-3	-6	-2	-2	-4
Residential (Daily-3.1%,am,-3.7%,pm-3.6%,Sat-3.1%)			-65	-1	-4	-6	-5	-3	-8	-3	-3	-6
Total Transit Adjustments			-475	-9	-10	-20	-27	-23	-50	-29	-26	-55
Internal Trips			-5,807	-78	-78	-156	-259	-259	-518	-315	-315	-630
Pass-by Trips (33% of net retail trips) ³			-3,545	-53	-53	-106	-184	-184	-368	-217	-217	-434
New External Trips			16,030	365	335	699	901	748	1,649	1,005	815	1,818

¹ Trip generation for Weekday and AM peak hour of Bookstore were based on trip generation ratio of Retail/Shopping Center.

² Transit adjustments and transit trips for restaurant and theater are assumed to be the same percentage as for retail use.

³ Pass-by adjustments are made for shopping center, grocery store and bookstore only

Some totals do not add up due to rounding

Sources: Dowling Associates, Inc. 2008

Curtis Park Village
Trip Generation - As Analyzed in DEIR using ITE Trip Generation 7th edition

Trip Generation Land Use Category	Amount	Source	Trips Generated									Distribution						
			Weekday	AM Peak Hour			PM Peak Hour			Saturday			AM Peak		PM Peak		Saturday	
				In	Out	Total	In	Out	Total	In	Out	Total	In	Out	In	Out	In	Out
Retail (Shopping Center)	92.1 KSF	ITE (820)	6,439	91	58	149	285	308	593	427	394	821	61%	39%	48%	52%	52%	48%
Retail / Grocery Store	53.5 KSF	ITE (850)	4,973	128	82	210	290	279	569	312	299	611	61%	39%	51%	49%	51%	49%
Retail / Bookstore	25.0 KSF	ITE (868) ¹	5,299	75	48	123	254	234	488	282	251	533	61%	39%	52%	48%	53%	47%
Restaurant	13.0 KSF	ITE (932)	1,653	78	72	150	87	55	142	164	96	260	52%	48%	61%	39%	63%	37%
Dinner Theater	560.0 Seats	ITE (931)	1,602	9	8	17	98	48	146	124	87	211	52%	48%	67%	33%	59%	41%
Hotel	150.0 Rooms	ITE (310)	969	41	27	68	47	42	89	35	41	75	61%	39%	53%	47%	46%	54%
Health Spa	85.0 KSF	ITE (492)	2,799	43	60	103	175	169	344	111	111	221	42%	58%	51%	49%	50%	50%
Single-Family Residential	216 Units	ITE (210)	2,112	40	121	161	135	79	214	110	93	203	25%	75%	63%	37%	54%	46%
Park/Open Space	7.2 Acres	ITE (411)	11	0	0	0	0	0	0	1	1	2	50%	50%	50%	50%	50%	50%
Total Project Trips			25,857	505	476	981	1,371	1,214	2,585	1,566	1,373	2,937						
Transit Adjustments²																		
Retail (-1.8%)			-116	-2	-1	-3	-5	-6	-11	-8	-7	-15						
Grocery Store (-1.8%)			-90	-2	-2	-4	-5	-5	-10	-6	-5	-11						
Bookstore (-1.8%)			-95	-1	-1	-2	-5	-4	-9	-5	-5	-10						
Restaurant (-1.8%)			-30	-2	-1	-3	-2	-1	-3	-3	-2	-5						
Dinner Theater (-1.8%)			-29	0	0	0	-2	-1	-3	-2	-2	-4						
Hotel			0	0	0	0	0	0	0	0	0	0						
Health Spa (-1.8%)			-50	-1	-1	-2	-3	-3	-6	-2	-2	-4						
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1)			-65	-1	-4	-6	-5	-3	-8	-3	-3	-6						
Total Transit Adjustments			-475	-9	-10	-20	-27	-23	-50	-29	-26	-55						
Internal Trips			-5,807	-78	-78	-156	-259	-259	-518	-315	-315	-630						
Pass-by Trips (33% of net retail trips)			-3,545	-53	-53	-106	-184	-184	-368	-217	-217	-434						
New External Trips			16,030	365	335	699	901	748	1,649	1,005	815	1,818						
Transit Trips																		
Retail (2.2%)			501	10	7	17	24	26	50	30	28	58						
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)			80	2	5	7	6	4	10	4	4	8						
Total Transit Trips			581	12	12	24	30	30	60	34	32	66						

Note:

¹ Trip generation for weekday and AM peak hour for bookstore were based on trip generation ratio of retail/shopping center land use.

² Transit adjustments and transit trips for restaurant, theater and health spa were assumed to be the same percentage as for retail use.

³ Pass-by adjustments were made for shopping center, grocery store and bookstore only

Analyst: Dowling

**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
As Analyzed in DEIR (ITE 7th ed)**

Name of Development: Curtis Park

Date: 9/15/2009

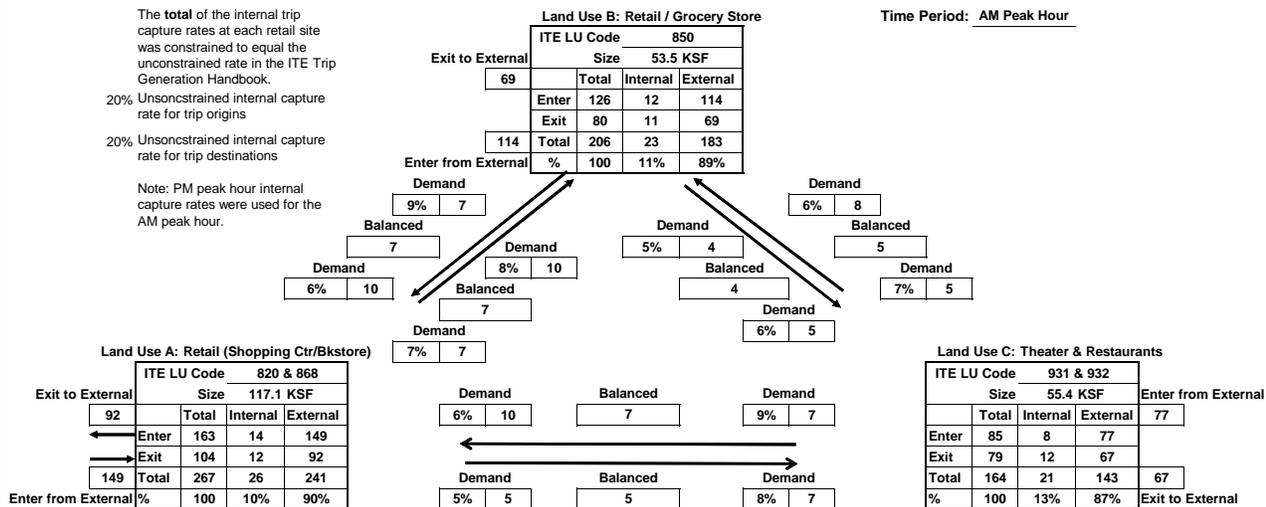
The total of the internal trip capture rates at each retail site was constrained to equal the unconstrained rate in the ITE Trip Generation Handbook.

20% Unconstrained internal capture rate for trip origins

20% Unconstrained internal capture rate for trip destinations

Note: PM peak hour internal capture rates were used for the AM peak hour.

Time Period: AM Peak Hour



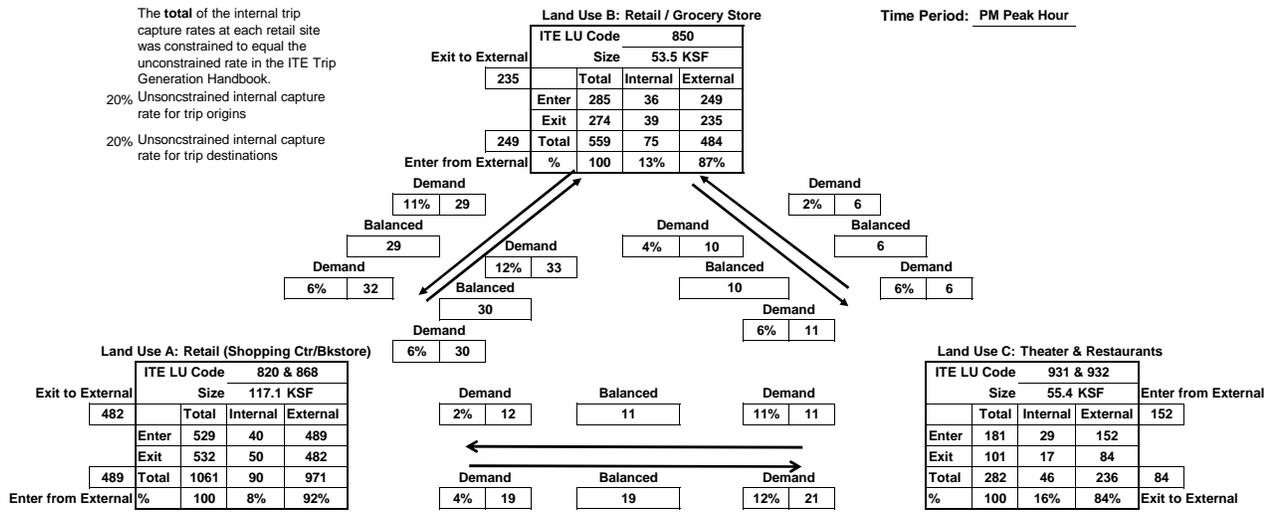
	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	149	114	77	339	
Exit	92	69	67	228	
Total	241	183	143	568	INTERNAL CAPTURE
Single-Use Trip	267	206	164	637	11%

The total of the internal trip capture rates at each retail site was constrained to equal the unconstrained rate in the ITE Trip Generation Handbook.

20% Unconstrained internal capture rate for trip origins

20% Unconstrained internal capture rate for trip destinations

Time Period: PM Peak Hour

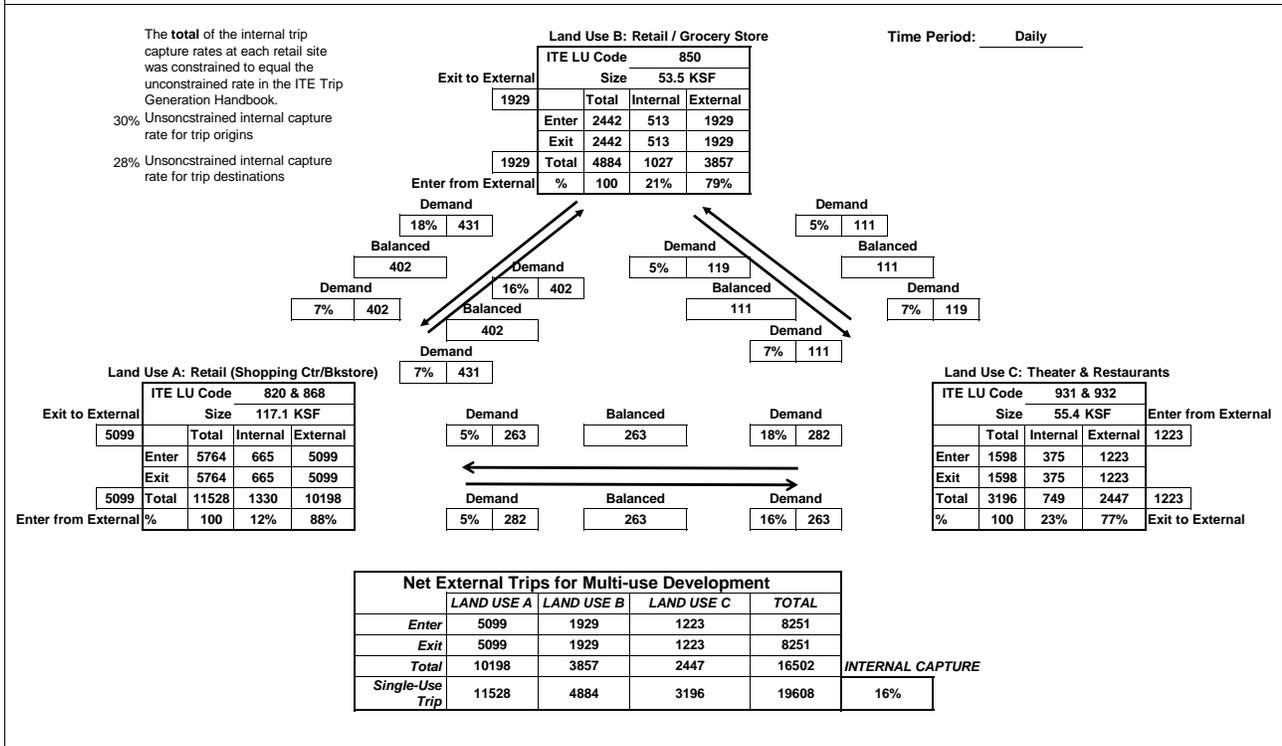
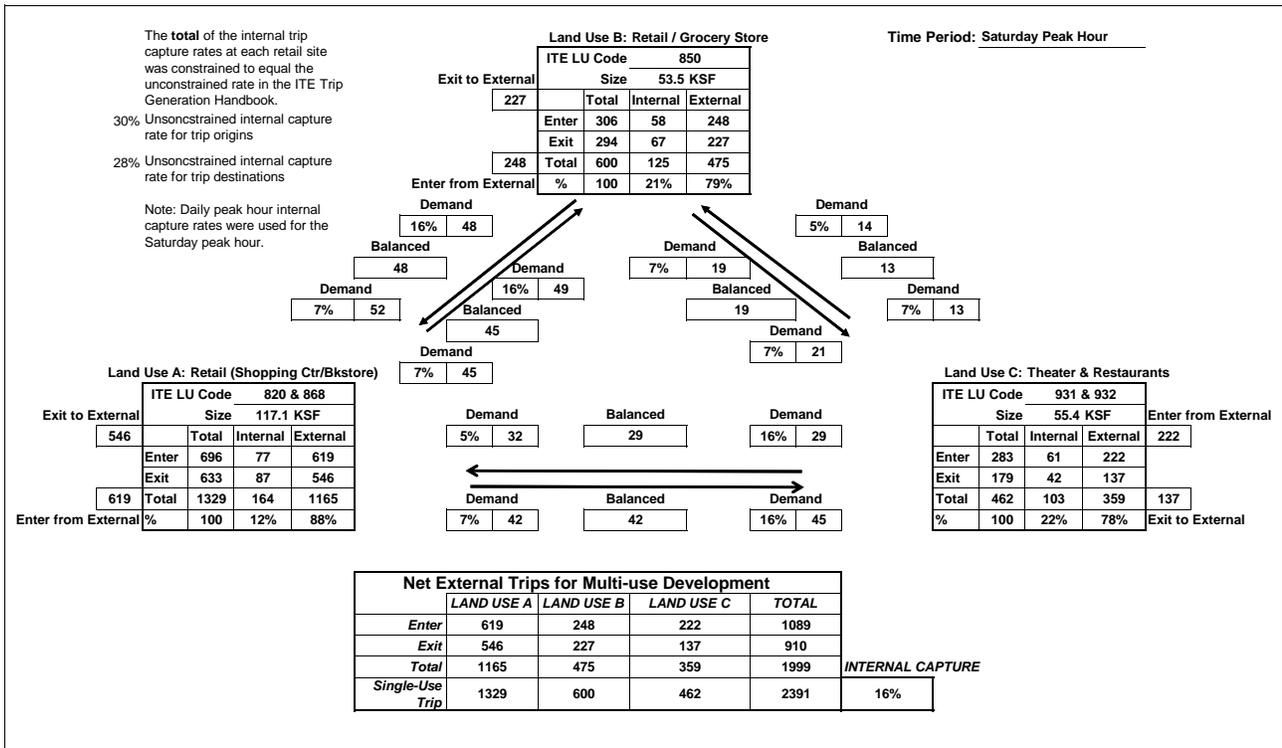


	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	489	249	152	890	
Exit	482	235	84	802	
Total	971	484	236	1691	INTERNAL CAPTURE
Single-Use Trip	1061	559	282	1902	11%

Analyst: Dowling
 Date: 9/15/2009

**MULTI-USE DEVELOPMENT
 TRIP GENERATION
 AND INTERNAL CAPTURE SUMMARY
 As Analyzed in DEIR (ITE 7th ed)**

Name of Development: Curtis Park



Curtis Park Village
Trip Generation -Current Proposed Project September 2009 (using ITE Trip Generation 8th edition)

Trip Generation Land Use Category	Amount	Source	Trips Generated									Distribution						
			Weekday	AM Peak Hour			PM Peak Hour			Saturday			AM Peak		PM Peak		Saturday	
				In	Out	Total	In	Out	Total	In	Out	Total	In	Out	In	Out	In	Out
Retail (Shopping Center)	129.5 KSF	ITE (820)	8,034	109	70	179	370	386	756	527	487	1,014	61%	39%	49%	51%	52%	48%
Retail / Grocery Store	53.5 KSF	ITE (850)	4,973	117	75	192	300	289	589	296	284	580	61%	39%	51%	49%	51%	49%
Retail / Bookstore	25.0 KSF	ITE (868) ¹	5,186	71	45	116	254	234	488	282	251	533	61%	39%	52%	48%	53%	47%
Restaurant	13.0 KSF	ITE (932)	1,653	78	72	150	86	59	145	97	86	183	52%	48%	59%	41%	53%	47%
Athletic Club	38.0 KSF	ITE (493)	1,634	69	44	113	144	89	233	124	129	253	61%	39%	62%	38%	49%	51%
Multi-Family Residential	248 Units	ITE (220) ²	1,626	25	100	125	100	54	154	75	64	139	20%	80%	65%	35%	54%	46%
Sr Adult Housing - Attached	90 Units	ITE (252) ⁵	313	4	8	12	8	6	14	13	14	27	36%	64%	60%	40%	48%	52%
Single-Family Residential	190 Units	ITE (210)	1,877	36	107	143	118	69	187	94	83	177	25%	75%	63%	37%	53%	47%
Park/Open Space	6.9 Acres	ITE (411)	11	0	0	0	0	0	0	1	1	2	50%	50%	50%	50%	50%	50%
Total Project Trips			25,307	509	521	1,030	1,380	1,186	2,566	1,509	1,399	2,908						
Transit Adjustments³																		
Retail (-1.8%)			-145	-2	-1	-3	-7	-7	-14	-9	-9	-18						
Grocery Store (-1.8%)			-90	-2	-1	-3	-6	-5	-11	-5	-5	-10						
Bookstore (-1.8%)			-93	-1	-1	-2	-5	-4	-9	-5	-5	-10						
Restaurant (-1.8%)			-30	-2	-1	-3	-2	-1	-3	-2	-1	-3						
Athletic Club (-1.8%)			-29	-1	-1	-2	-2	-2	-4	-2	-3	-5						
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1%)			-118	-2	-8	-10	-8	-5	-13	-6	-5	-11						
Total Transit Adjustments			-505	-10	-13	-23	-30	-24	-54	-29	-28	-57						
Internal Trips			-5,840	-82	-82	-165	-255	-255	-509	-320	-320	-640						
Pass-by Trips (32% of net retail trips)			-3,796	-50	-50	-99	-204	-204	-407	-229	-229	-457						
New External Trips			15,166	367	376	743	891	703	1,596	931	822	1,754						
Transit Trips																		
Retail (2.2%)			473	10	7	17	24	25	49	29	27	56						
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)			145	3	10	13	10	6	16	7	6	13						
Total Transit Trips			618	13	17	30	34	31	65	36	33	69						

Note:

¹ Trip generation for weekday and AM peak hour for bookstore were based on trip generation ratio of retail/shopping center land use.

² Trip generation for Saturday peak hour for multi-family residential was based on data from Low Rise Apartment (ITE 221)

³ Transit adjustments and transit trips for grocery store, bookstore, restaurant and athletic club were assumed to be the same percentage as for retail use.

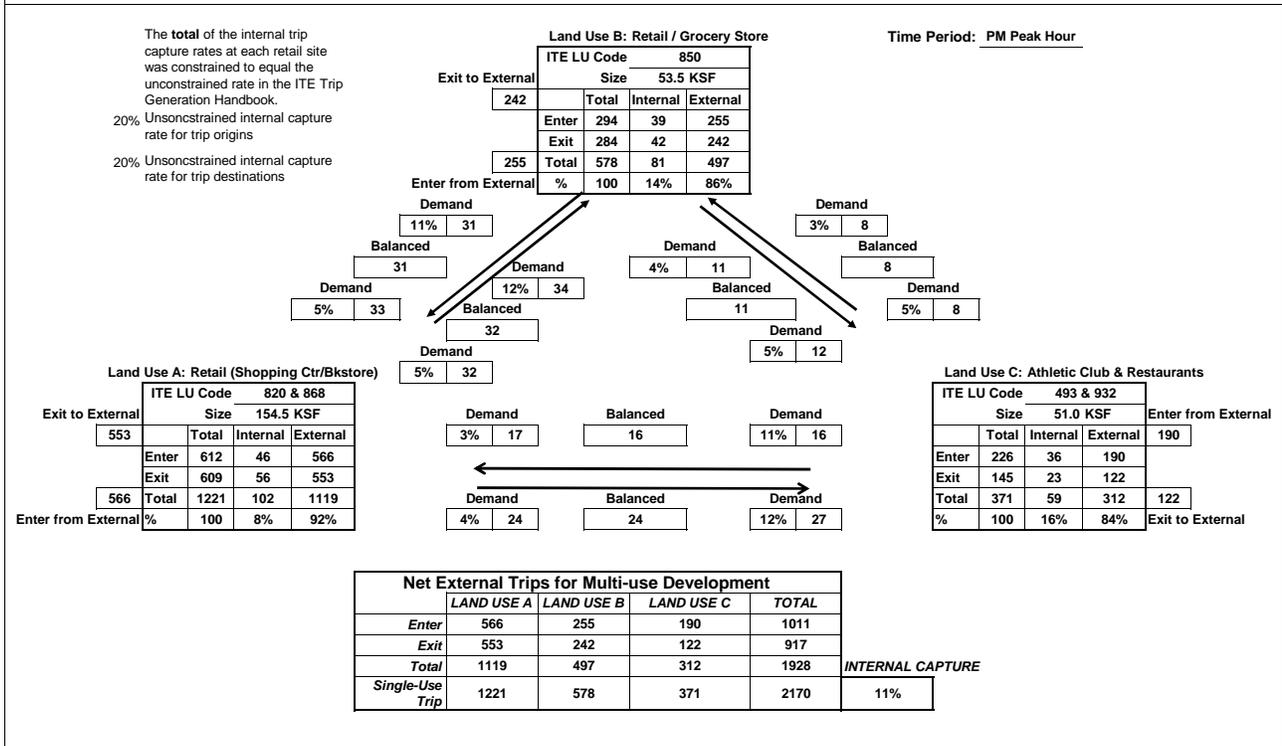
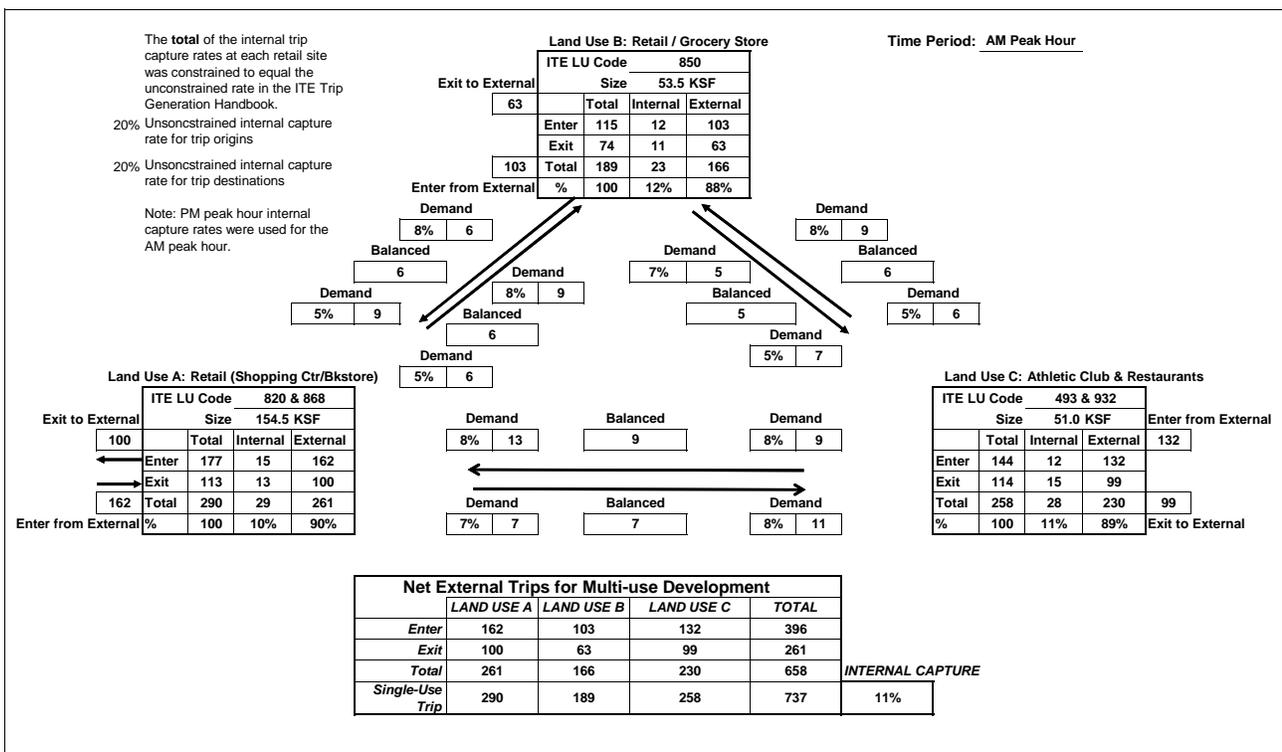
⁴ Pass-by adjustments were made for shopping center, grocery store and bookstore only

Analyst: Dowling

Date: 9/17/2009

**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Current Proposed Project (ITE 8th ed)**

Name of Development: Curtis Park

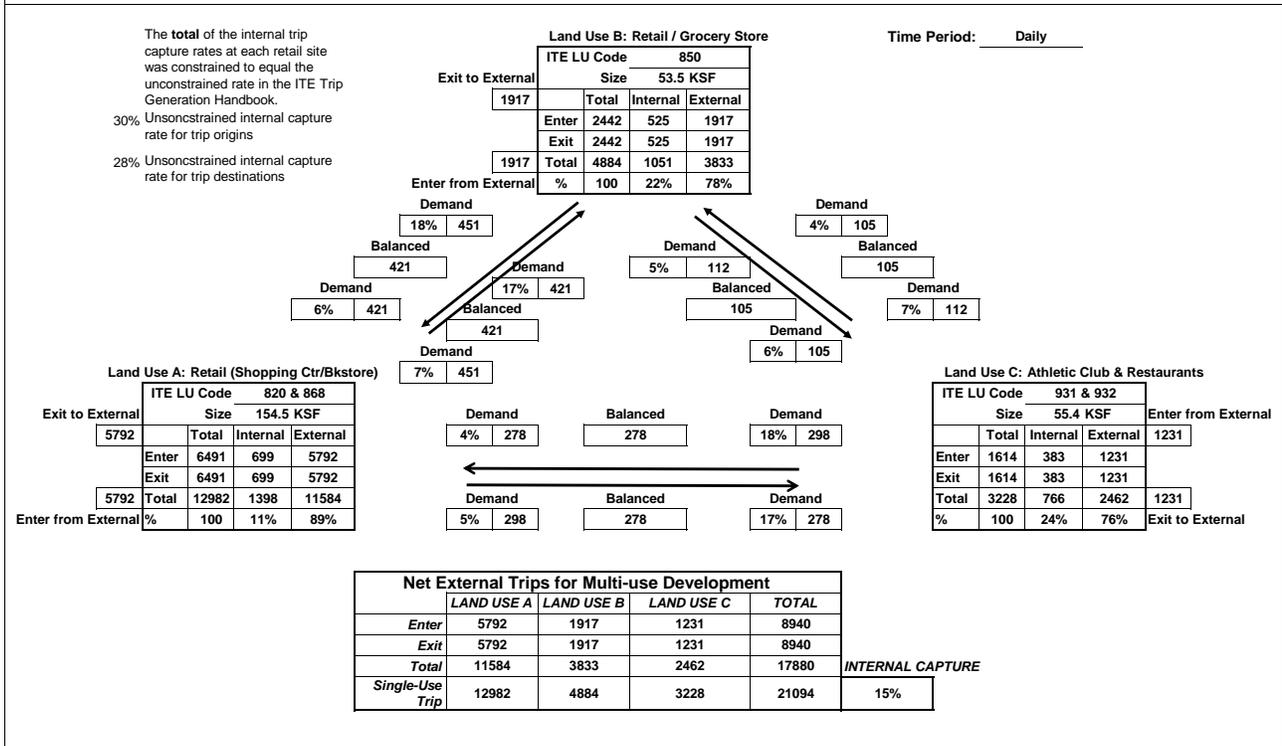
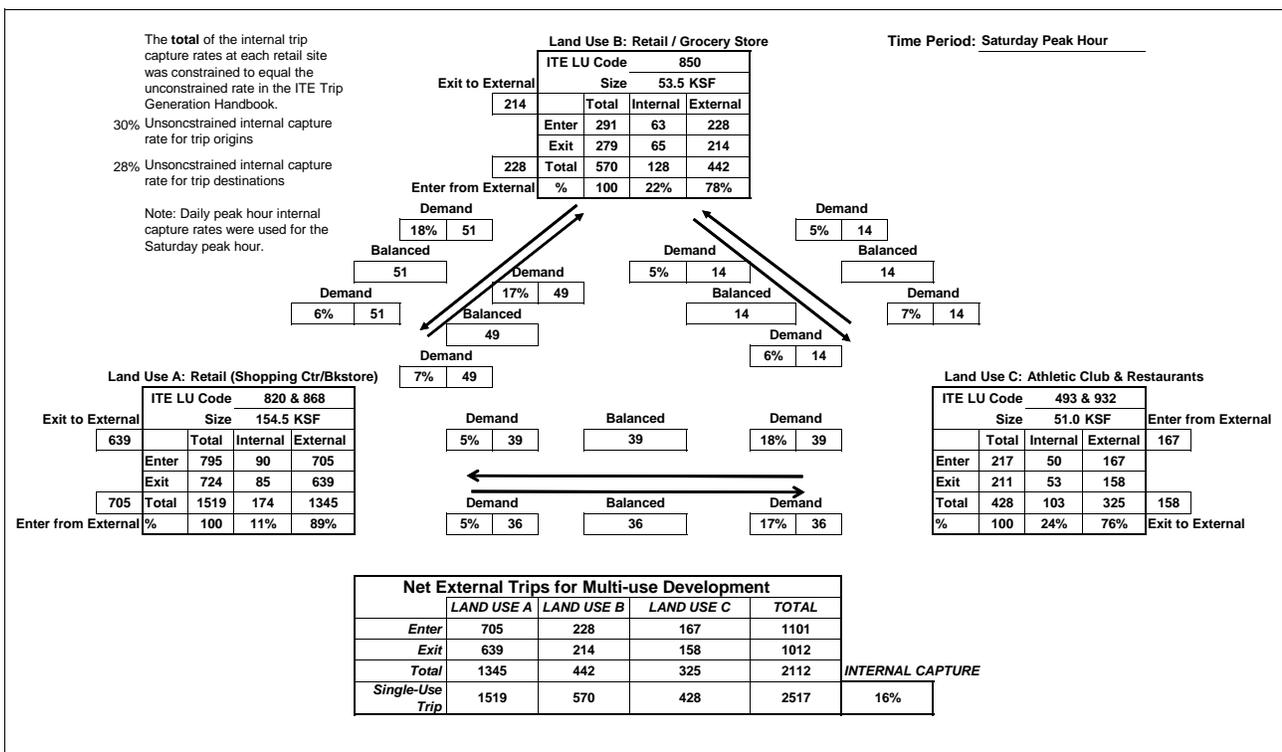


Analyst: Dowling

Date: 9/17/2009

**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Current Proposed Project (ITE 8th ed)**

Name of Development: Curtis Park



APPENDIX B

Date: October 8, 2009

Memorandum

To: Samar Hajeer, City of Sacramento

From: Debbie Yueh and Mark Bowman

Subject: Curtis Park Village – Alternative Roadway Configuration Feasibility Analysis

At the behest of the City, Dowling performed a supplemental analysis for an alternative roadway configuration for Access Scenario 3 of the Curtis Park Village project, where an eastern connection at 10th Avenue was proposed. This analysis was commissioned in response to comments received following the circulation of the DEIR in May 2009. A description of the new configuration and roadway assumptions is provided below followed by an impact discussion on vehicles and alternative modes.

Description of Alternative Configuration

The modification to the roadway configuration focuses on the retail commercial in the southern portion of the project site. The proposed change in the roadway is mainly to replace the proposed roundabout north of the commercial area (Area 1) by a signalized intersection. As shown in Figure 1, under the new configuration, Road A segment north of the first signal at the shopping center driveway and the new intersection is proposed to be a two lane roadway running as a straight north-south road that intersects Road C/10th Avenue at a standard four-legged signalized intersection. The Road A/Road C roundabout intersection as well as the Road A/Area 3 intersection would both be eliminated. The Project would not have any retail commercial use on the eastside of Road A; rather, the retail commercial uses previously located in Area 2 would become a part of Area 1. It is assumed that access to Area 3 would be provided on Road A and Road C and an additional access to Area 1 would be provided from Road C. No other changes to the roadway network were assumed.

Analysis

Level of service analysis under both baseline and cumulative conditions was conducted for the new signalized intersection of Road A and 10th Avenue to determine the operational feasibility of the alternative configuration. The background traffic volumes were derived from the DEIR analysis performed for Access Scenario 3, which provides an eastern connection with 10th Avenue. Access Scenario 3, as with other access scenarios analyzed in the DEIR, has already taken into account the redistribution of background through traffic on 24th Street onto Road A with the development of Curtis Park Village. It also provides a connection between the existing Curtis Park neighborhood and the Curtis Park Village in the lower portion via 10th Avenue as proposed for the Alternative Configuration. Therefore, no further redistribution of traffic is projected.

Figure 1

Alternative Configuration – Lane Geometry Assumptions
Road A and 10th Avenue Intersection

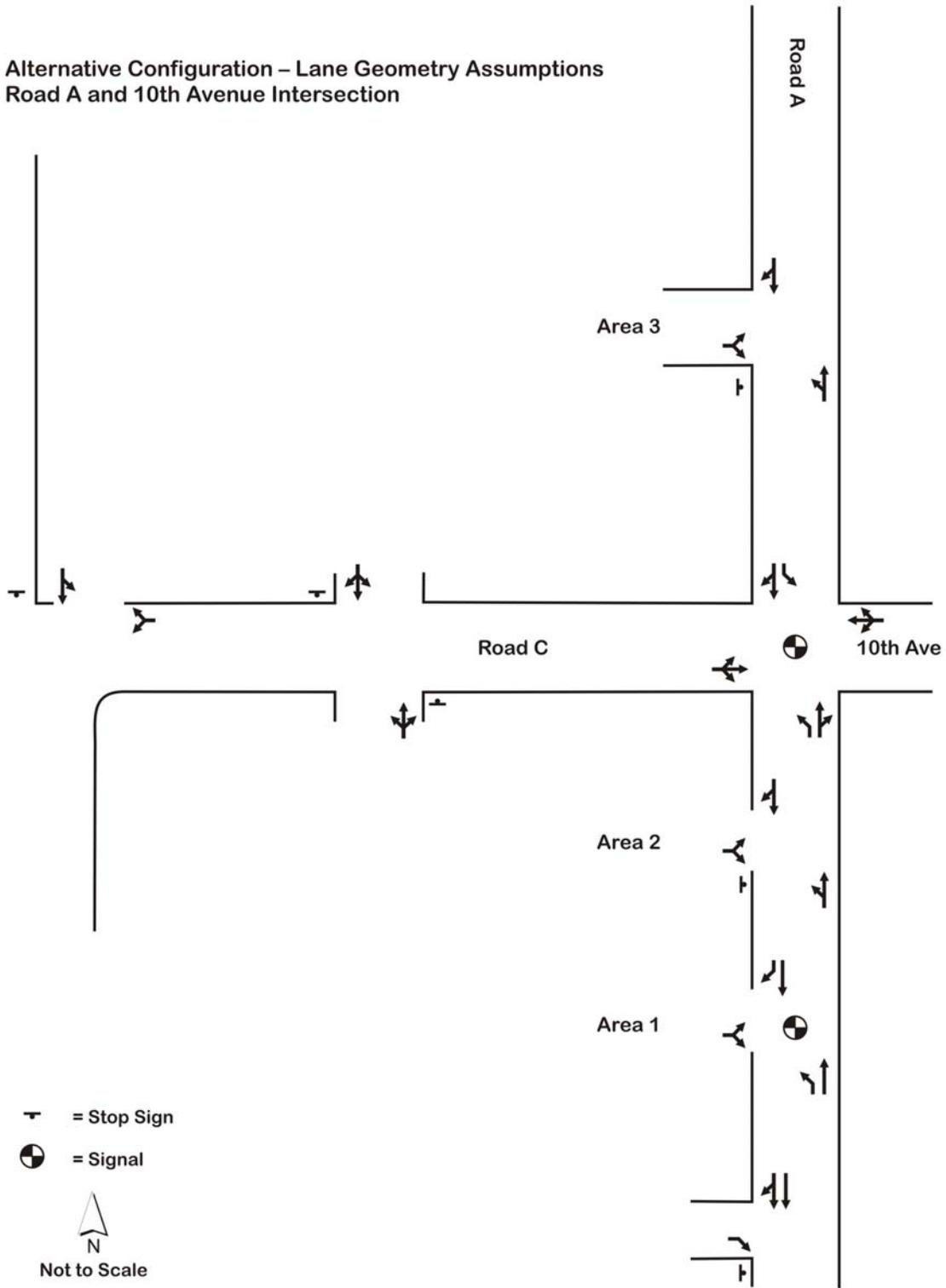


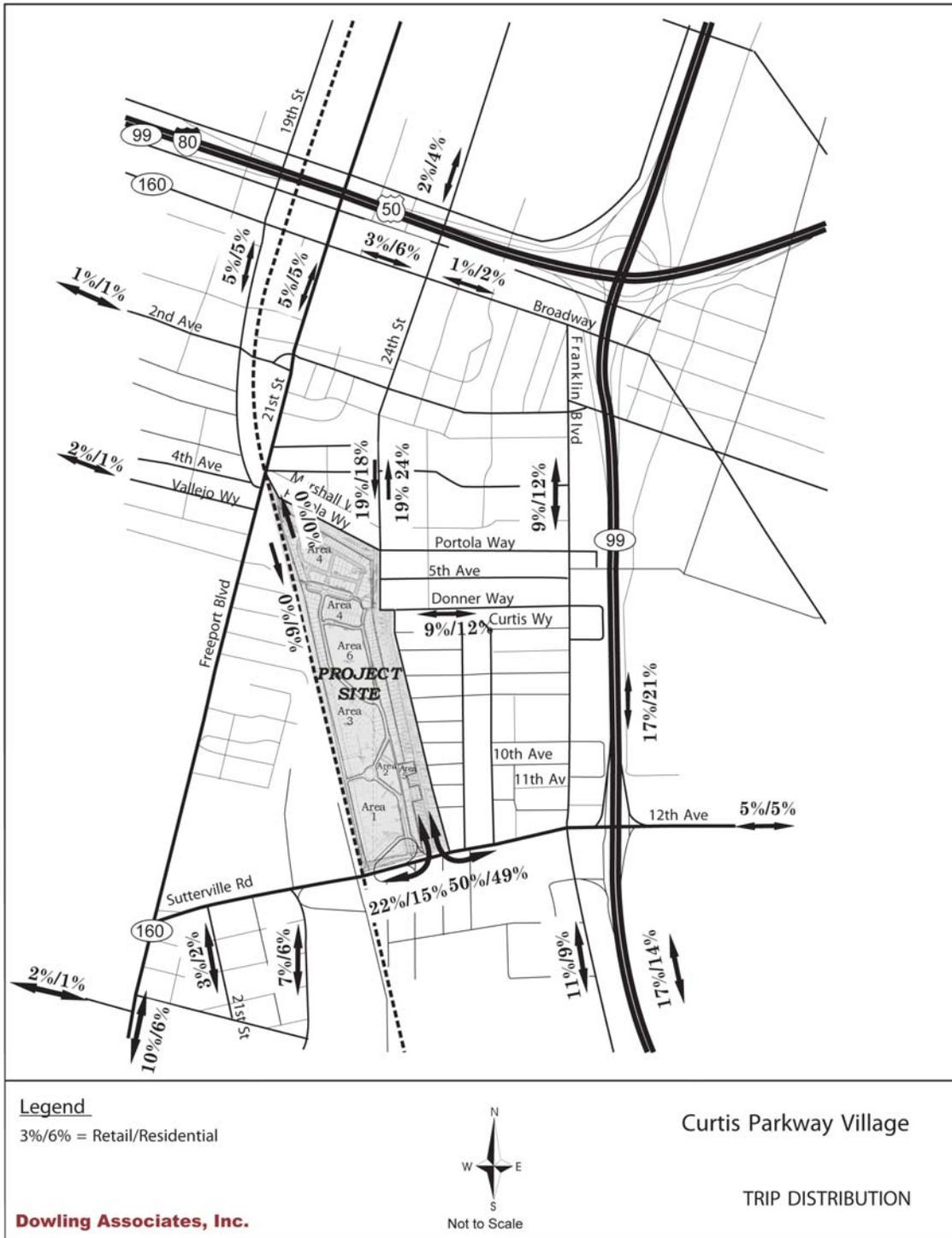
Table 1 Trip Generation

Land Use	Amount		Trips Generated									
			Weekday	AM Peak Hour			PM Peak Hour			Saturday		
				In	Out	Total	In	Out	Total	In	Out	Total
Retail	130	KSF	8,034	109	70	179	370	386	756	527	487	1,014
Retail / Grocery Store	54	KSF	4,973	117	75	192	300	289	589	296	284	580
Retail / Bookstore ¹	25	KSF	5,184	71	45	116	254	234	488	282	251	533
Restaurants	13	KSF	1,653	78	72	150	86	59	145	97	86	183
Athletic Club	38	KSF	1,634	69	44	113	144	89	233	124	129	253
Multi-Family Residential ²	248	Units	1,626	25	100	125	100	54	154	75	64	139
Senior Adult Housing - attached	90	Units	313	4	8	12	8	6	14	14	14	27
Single-Family Residential	190	Units	1,877	36	107	143	118	69	187	94	83	177
Park/Open Space	7	Acres	11	0	0	0	0	0	0	1	1	2
Total Project Trips			25,307	509	521	1,030	1,380	1,186	2,566	1,509	1,399	2,908
Transit Adjustments ³												
Retail (-1.8%)			-145	-2	-1	-3	-7	-7	-14	-9	-9	-18
Grocery Store (-1.8%)			-90	-2	-1	-3	-6	-5	-11	-5	-5	-10
Bookstore (-1.8%)			-93	-1	-1	-2	-5	-4	-9	-5	-5	-10
Restaurant (-1.8%)			-30	-2	-1	-3	-2	-1	-3	-2	-1	-3
Athletic Club (-1.8%)			-29	-1	-1	-2	-2	-2	-4	-2	-3	-5
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1%)			-109	-2	-8	-10	-8	-5	-13	-6	-5	-11
Total Transit Adjustments			-505	-10	-13	-23	-30	-24	-54	-29	-28	-57
Internal Trips			-5,840	-89	-89	-178	-278	-278	-555	-345	-345	-689
Pass-by Trips (32% of net retail trips) ⁴			-3,796	-48	-48	-95	-197	-197	-393	-221	-221	-442
New External Trips			15,166	362	371	734	875	687	1,564	914	805	1,720

¹ Trip generation for Weekday and AM peak hour of Bookstore were based on trip generation ratio of Retail/Shopping Center.
² Trip generation for Saturday peak hour was based on data from Low Rise Apartment (ITE 221)
³ Transit adjustments and transit trips for restaurant and theater are assumed to be the same percentage as for retail use.
⁴ Pass-by adjustments are made for shopping center, grocery store and bookstore only
⁵ The Saturday distribution for Senior Adult Housing – attached is based on Senior Adult Housing – detached (ITE 251)
* Some totals do not add up due to rounding

Sources: Dowling Associates, Inc. 2009

Figure 2



Project trip generation was based on the Current Proposed Project land use scenario detailed in the Trip Generation Comparison memo (September 15, 2009) using the same methodologies described in the DEIR. The estimated project-generated trips are summarized in Table 1. Project distribution was projected to be the same as those analyzed in the DEIR as shown in Figure 2. Project trips from Area 1, Area 2 and Area 3 were reassigned onto the roadway network; while trip assignments from other parts of the project area remained unchanged. The projected traffic volumes at the Road A and 10th Avenue/Road C intersection are shown in Figure 3.

It is assumed that the traffic signal at the reconfigured intersection would be coordinated with the signals at Area 1 and Sutterville Road along Road A. As shown in Table 2, the intersection would experience LOS A or LOS B during AM, PM and Saturday peak hours under both baseline and cumulative conditions.

**Table 2 Level of Service
Intersection of Road A and 10th Avenue – Signal Control**

Peak Hour	Baseline Conditions		Cumulative Conditions	
	LOS	Avg Delay (sec)	LOS	Avg Delay (sec)
AM	A	9.6	A	7.6
PM	A	7.5	A	8.2
Saturday	A	9.4	B	10.1

Source: Dowling Associates, 2009

The other two signalized intersections would also operate efficiently if the mitigation measures applicable to Access Scenario 3 were applied. These mitigation measures include:

Road A and Sutterville Road – The applicant shall provide overlap signal phasing to allow the southbound Road A right turning traffic to proceed on a green arrow simultaneously with the eastbound left turning movement, and prohibit U-turns for the eastbound left turning movement; provide one left-turn lane, one left-right lane, and one right-turn lane on the southbound approach; provide a dedicated right turn lane for the westbound Sutterville Road approach to the intersection; and provide an actuated exclusive pedestrian phase to serve pedestrians crossing Sutterville Road. For cumulative conditions, also optimize signal timing.

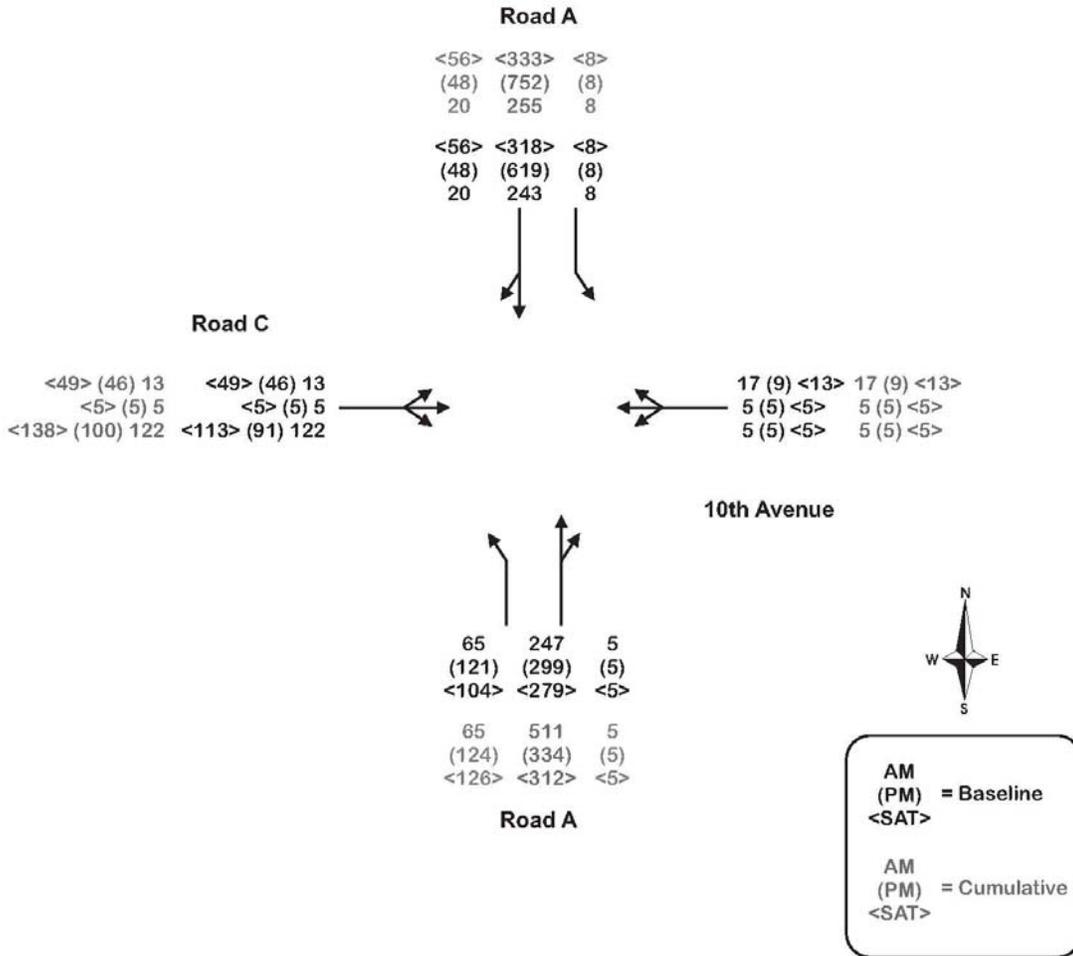
Road A and Area 1 - The project applicant shall pay a fair share contribution to modify the signal phasing to provide overlaps for the eastbound right-turn movement; provide protected-permitted phasing for the northbound left-turn movement; and prohibit U-turn movement at this intersection.

The level of service worksheets for all three intersections are provided with the memorandum.

The analysis also indicated that the 95th percentile queue on the southbound direction would extend to 400 feet under the Baseline conditions and to 500 feet under the Cumulative conditions in the PM peak hour assuming the provision of one left-turn lane and one shared through-right lane at the intersection. Therefore, the driveway access from Area 3 onto Road A should be placed at least 500 feet north of the 10th Avenue/Road C intersection.

The alternative configuration would have little impact on alternative modes. All provisions for pedestrian and bicycle circulation and transit connection would remain unchanged. The streets would be designed in accordance to the City’s Pedestrian-Friendly Street standards. The modified section of Road A would remain a two-lane roadway with the transition from four lanes to two lanes occurring just north of the Area 1 intersection as previously analyzed. Marked pedestrian crossings would be provided on all four legs of the new intersection, where bus stops are planned for the Regional Transit routes.

Figure 3 Baseline and Cumulative Traffic Volumes at Road A and 10th Avenue



A signal warrant analysis was performed for the Road A and 10th Avenue/Road C intersection. The results indicate that the peak hour signal warrant would not be met under neither baseline nor cumulative conditions. As such, careful consideration should be taken as to the appropriateness of the signal installation. All-way stop control may be a viable alternative to signalization. However, all-way stop control is generally recommended for intersections with relatively balanced traffic volumes on all approaches. It is not the case at the reconfigured intersection, where Road A would experience much higher volumes. Control with all-way stops would also necessitate the widening of Road A at the intersection to provide one exclusive left-turn lane and one through-right shared lane on the northbound approach and one left-through shared lane and one through-right shared lane on the southbound approach. Therefore, the transition from one travel lane to two travel lanes on the southbound direction of Road A would occur at the 10th Avenue/Road C intersection rather than at the Area 1 intersection. This configuration would provide adequate level of service as shown in Table 3 and the peak hour queue length would be reduced to 75 feet.

**Table 3 Level of Service
Intersection of Road A and 10th Avenue – All-Way Stop**

Peak Hour	Baseline Conditions		Cumulative Conditions	
	LOS	Avg Delay (sec)	LOS	Avg Delay (sec)
AM	A	9.9	A	7.6
PM	C	15.8	C	15.8
Saturday	B	11.5	B	11.5

Source: Dowling Associates, 2009

The lane geometry assumptions for the All-Way Stops option are provided in Figure 4. The proposed widening from a two-lane road to three-lane road between 10th Avenue/Road C and Area 1 would not draw additional traffic to Road A especially with the installation of the all-way stop control, which tends to result in additional delays for motorists. The all-way stop control would also provide sufficient protection for pedestrians. With proper urban design elements, such as pedestrian-scale lighting and landscaped sidewalks, the desired village-like environment can be retained even when the road is widened from two to three travel lanes.

Regardless of the intersection control, the additional access points on Road C would alleviate demand on other on-site access points particularly the Area 3 access point on Road A. Further, a number of on-site circulation impacts identified in the DEIR pertaining to compliance to the City’s center line radius standard would be eliminated with this new configuration. These impacts were identified for the following locations:

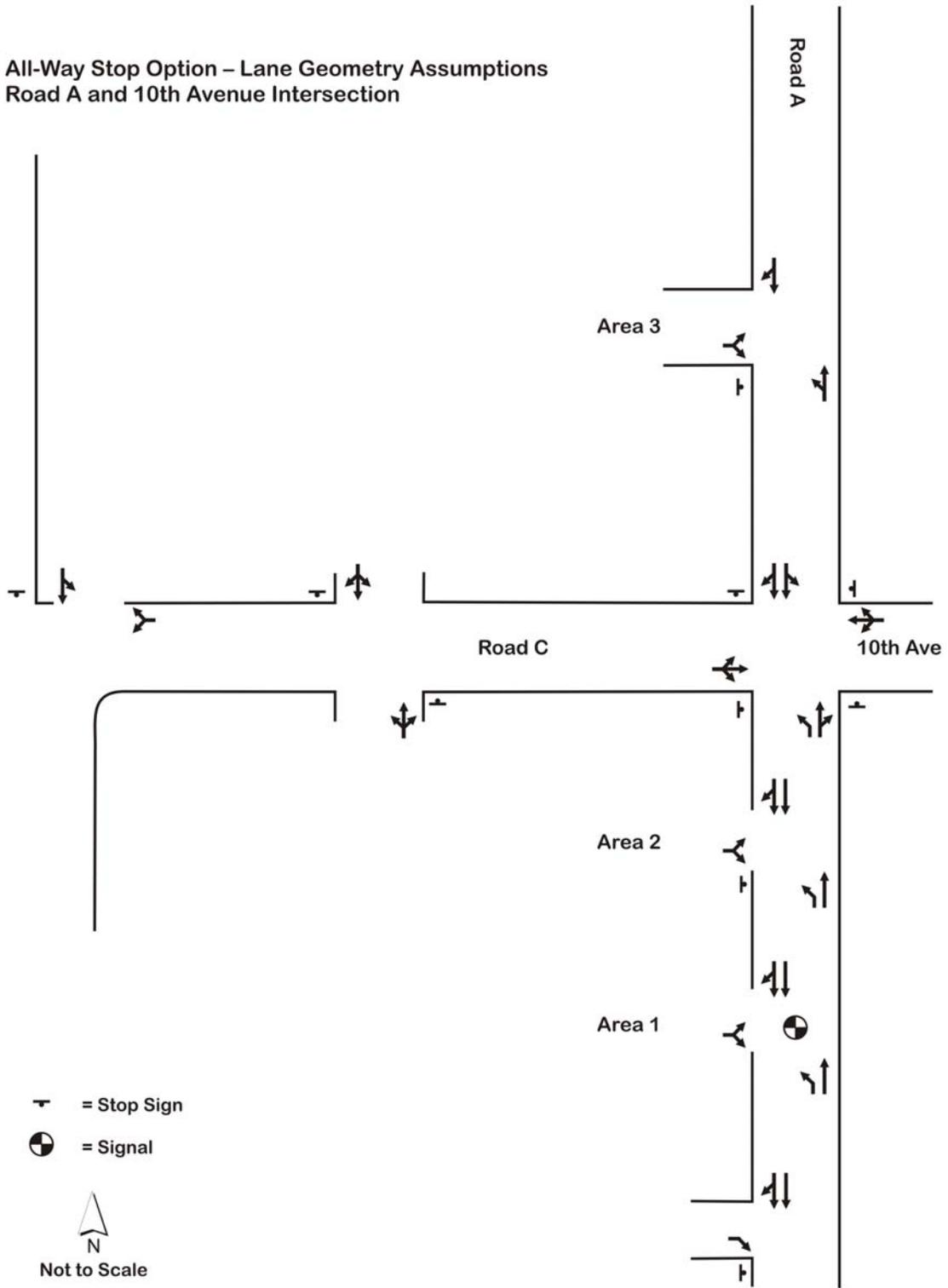
- Road A just north of Area 1 driveway
- 10th Avenue connector road north of Area 2 between Road A and the Alley
- Road A just north of Area 3 driveway

Conclusion

The analysis had found the proposed alternative roadway configuration in Curtis Park Village to be feasible. It is projected that this configuration would not result in any new significant impact and would not affect the findings of the DEIR.

Figure 4

All-Way Stop Option – Lane Geometry Assumptions
Road A and 10th Avenue Intersection



Level of Service Worksheets

Curtis Park Village
Alternative Configuration RdA/10th Av
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Alternative Configuration RdA/10th Av
Baseline AM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 70 Critical Vol./Cap.(X): 0.803
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.8
Optimal Cycle: 62 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: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 0 0 0 1 0 0 0 1 1 0 2 0 0 0 0 1 1 0
Volume Module:except thru movements
Base Vol: 0 0 0 48 0 168 142 1039 0 0 1240 48
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 0 0 48 0 168 142 1039 0 0 1240 48
Added Vol: 0 0 0 127 0 66 77 1 0 0 5 140
PasserByVol: 0 0 0 21 0 26 21 -21 0 0 -26 26
Initial Fut: 0 0 0 196 0 260 240 1019 0 0 1219 214
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 0 0 196 0 260 240 1019 0 0 1219 214
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 196 0 260 240 1019 0 0 1219 214
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
FinalVolume: 0 0 0 196 0 260 240 1019 0 0 1219 214
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.95 1.00 0.85 0.95 0.95 1.00 1.00 0.93 0.93
Lanes: 0.00 0.00 0.00 1.00 0.00 1.00 1.00 2.00 0.00 0.00 1.70 0.30
Final Sat.: 0 0 0 1805 0 1615 1805 3610 0 0 3003 527
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.11 0.00 0.16 0.13 0.28 0.00 0.00 0.41 0.41
Crit Moves: ****
Green/Cycle: 0.00 0.00 0.00 0.20 0.00 0.20 0.17 0.67 0.00 0.00 0.51 0.51
Volume/Cap: 0.00 0.00 0.00 0.54 0.00 0.80 0.80 0.42 0.00 0.00 0.80 0.80
Delay/Veh: 0.0 0.0 0.0 26.8 0.0 40.1 42.6 5.4 0.0 0.0 17.1 17.1
User DelAdj: 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 0.0 0.0 26.8 0.0 40.1 42.6 5.4 0.0 0.0 17.1 17.1
LOS by Move: A A A C A D D A A A B B
HCM2k95thQ: 0 0 0 9 0 15 14 11 0 0 28 28
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration RdA/10th Av
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.266
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.6
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module table with 12 columns for saturation flow and adjustment factors.

Capacity Analysis Module table with 12 columns for capacity, cycle, and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration RdA/10th Av
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.263
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.1
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module table with 12 columns for saturation flow and adjustment factors.

Capacity Analysis Module table with 12 columns for capacity, cycle, and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration RdA/10th Av
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Alternative Configuration RdA/10th Av
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 70 Critical Vol./Cap.(X): 1.188
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 83.7
Optimal Cycle: 180 Level of Service: F
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 0 0 0 1 0 0 0 1 1 0 2 0 0 0 0 1 1 0
Volume Module:except thru movements
Base Vol: 0 0 0 76 0 387 54 939 0 0 1193 38
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.08 1.00 1.00 1.00 1.00
Initial Bse: 0 0 0 76 0 387 54 1014 0 0 1193 38
Added Vol: 0 0 0 278 0 156 183 3 0 0 2 334
PasserByVol: 0 0 0 86 0 105 86 -86 0 0 -105 105
Initial Fut: 0 0 0 440 0 648 323 931 0 0 1090 477
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 0 0 440 0 648 323 931 0 0 1090 477
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 440 0 648 323 931 0 0 1090 477
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
FinalVolume: 0 0 0 440 0 648 323 931 0 0 1090 477
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.95 1.00 0.85 0.95 0.95 1.00 1.00 0.91 0.91
Lanes: 0.00 0.00 0.00 1.00 0.00 1.00 1.00 2.00 0.00 0.00 1.39 0.61
Final Sat.: 0 0 0 1805 0 1615 1805 3610 0 0 2396 1048
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.24 0.00 0.40 0.18 0.26 0.00 0.00 0.46 0.46
Crit Moves: ****
Green/Cycle: 0.00 0.00 0.00 0.34 0.00 0.34 0.15 0.53 0.00 0.00 0.38 0.38
Volume/Cap: 0.00 0.00 0.00 0.72 0.00 1.19 1.19 0.48 0.00 0.00 1.19 1.19
Delay/Veh: 0.0 0.0 0.0 24.5 0.0 125.1 145.0 10.4 0.0 0.0 114 114.0
User DelAdj: 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 0.0 0.0 24.5 0.0 125.1 145.0 10.4 0.0 0.0 114 114.0
LOS by Move: A A A C A F B A A F F
HCM2k95thQ: 0 0 0 18 0 48 29 13 0 0 59 59
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration RdA/10th Av
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.571
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.5
Optimal Cycle: 30 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration RdA/10th Av
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 1.031
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 22.7
Optimal Cycle: 180 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Alternative Configuration RdA/10th Av
 Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

Curtis Park Village
 Alternative Configuration RdA/10th Av
 Baseline Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #17 Road A/Sutterville Road

 Cycle (sec): 70 Critical Vol./Cap.(X): 0.883
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 29.5
 Optimal Cycle: 81 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:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	4	0	10	4	10	0	0	10	10
Lanes:	0	0	0	1	0	0	1	0	2	0	0	1

Volume Module:
 Base Vol: 0 0 0 21 0 97 41 700 0 0 765 21
 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 0 0 21 0 97 41 700 0 0 765 21
 Added Vol: 0 0 0 320 0 179 195 3 0 0 3 356
 PasserByVol: 0 0 0 98 0 120 98 -98 0 0 -120 120
 Initial Fut: 0 0 0 439 0 396 334 605 0 0 648 497
 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 0 0 439 0 396 334 605 0 0 648 497
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 0 0 0 439 0 396 334 605 0 0 648 497
 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
 FinalVolume: 0 0 0 439 0 396 334 605 0 0 648 497

 Saturation Flow Module:
 Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
 Adjustment: 1.00 1.00 1.00 0.95 1.00 0.85 0.95 0.95 1.00 1.00 0.89 0.89
 Lanes: 0.00 0.00 0.00 1.00 0.00 1.00 1.00 2.00 0.00 0.00 1.13 0.87
 Final Sat.: 0 0 0 1805 0 1615 1805 3610 0 0 1910 1465

 Capacity Analysis Module:
 Vol/Sat: 0.00 0.00 0.00 0.24 0.00 0.25 0.19 0.17 0.00 0.00 0.34 0.34
 Crit Moves: *****
 Green/Cycle: 0.00 0.00 0.00 0.28 0.00 0.28 0.21 0.59 0.00 0.00 0.38 0.38
 Volume/Cap: 0.00 0.00 0.00 0.88 0.00 0.88 0.88 0.28 0.00 0.00 0.88 0.88
 Delay/Veh: 0.0 0.0 0.0 39.9 0.0 42.5 47.7 7.0 0.0 0.0 27.5 27.5
 User DelAdj: 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 0.0 0.0 39.9 0.0 42.5 47.7 7.0 0.0 0.0 27.5 27.5
 LOS by Move: A A A D A D D A A A C C
 HCM2k95thQ: 0 0 0 23 0 21 19 7 0 0 28 28

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration RdA/10th Av
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.376
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.4
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration RdA/10th Av
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.740
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.4
Optimal Cycle: 45 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Alternative Configuration
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 70 Critical Vol./Cap.(X): 0.829
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.7
Optimal Cycle: 67 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: Split Phase Split Phase Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 8 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 1 0 0 1 0 1 0 1 1 0 2 0 0 0 0 2 0 1
Volume Module:except thru movements
Base Vol: 0 1 0 32 0 196 338 1521 0 0 1553 107
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 1 0 32 0 196 338 1521 0 0 1553 107
Added Vol: 0 0 0 127 0 66 77 1 0 0 5 140
PasserByVol: 0 0 0 21 0 26 21 -21 0 0 -26 26
Initial Fut: 0 1 0 180 0 288 436 1501 0 0 1532 273
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 1 0 180 0 288 436 1501 0 0 1532 273
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1 0 180 0 288 436 1501 0 0 1532 273
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
FinalVolume: 0 1 0 180 0 288 436 1501 0 0 1532 273
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.89 1.00 0.89 0.95 1.00 1.00 1.00 1.00 0.85
Lanes: 0.00 1.00 0.00 1.38 0.00 1.62 1.00 2.00 0.00 0.00 2.00 1.00
Final Sat.: 0 1900 0 2343 0 2734 1805 3800 0 0 3800 1615
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.08 0.00 0.11 0.24 0.40 0.00 0.00 0.40 0.17
Crit Moves: **** **
Green/Cycle: 0.00 0.11 0.00 0.08 0.00 0.33 0.25 0.68 0.00 0.00 0.42 0.42
Volume/Cap: 0.00 0.00 0.00 0.95 0.00 0.32 0.95 0.58 0.00 0.00 0.95 0.40
Delay/Veh: 0.0 27.5 0.0 61.0 0.0 17.5 56.0 6.4 0.0 0.0 32.5 14.4
User DelAdj: 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 27.5 0.0 61.0 0.0 17.5 56.0 6.4 0.0 0.0 32.5 14.4
LOS by Move: A C A E A B E A A A C B
HCM2k95thQ: 0 0 0 12 0 6 26 17 0 0 37 9
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.422
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.6
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.409
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.0
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Alternative Configuration
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 70 Critical Vol./Cap.(X): 0.913
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 40.4
Optimal Cycle: 91 Level of Service: D
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Split Phase Split Phase Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 8 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 1 0 0 1 0 1 0 1 1 0 2 0 0 0 0 2 0 1
Volume Module:except thru movements
Base Vol: 0 1 0 111 0 489 89 1419 0 0 1603 50
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 1 0 111 0 489 89 1419 0 0 1603 50
Added Vol: 0 0 0 278 0 156 183 3 0 0 2 334
PasserByVol: 0 0 0 86 0 105 86 -86 0 0 -105 105
Initial Fut: 0 1 0 475 0 750 358 1336 0 0 1500 489
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 1 0 475 0 750 358 1336 0 0 1500 489
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1 0 475 0 750 358 1336 0 0 1500 489
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
FinalVolume: 0 1 0 475 0 750 358 1336 0 0 1500 489
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.89 1.00 0.89 0.95 1.00 1.00 1.00 1.00 0.85
Lanes: 0.00 1.00 0.00 1.39 0.00 1.61 1.00 2.00 0.00 0.00 2.00 1.00
Final Sat.: 0 1900 0 2349 0 2729 1805 3800 0 0 3800 1615
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.20 0.00 0.27 0.20 0.35 0.00 0.00 0.39 0.30
Crit Moves: **** **
Green/Cycle: 0.00 0.11 0.00 0.19 0.00 0.38 0.19 0.56 0.00 0.00 0.38 0.38
Volume/Cap: 0.00 0.00 0.00 1.05 0.00 0.72 1.05 0.62 0.00 0.00 1.05 0.81
Delay/Veh: 0.0 27.5 0.0 68.9 0.0 20.0 91.0 10.8 0.0 0.0 60.1 27.3
User DelAdj: 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 27.5 0.0 68.9 0.0 20.0 91.0 10.8 0.0 0.0 60.1 27.3
LOS by Move: A C A E A C F B A A E C
HCM2k95thQ: 0 0 0 25 0 19 26 19 0 0 44 22
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.668
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.2
Optimal Cycle: 37 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 1.342
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 50.8
Optimal Cycle: 180 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration
Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Alternative Configuration
Cumulative Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 70 Critical Vol./Cap.(X): 0.808
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 26.9
Optimal Cycle: 63 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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	8	0	4	0	10	4	10	0	0	10	10
Lanes:	0	0	1	0	0	1	1	0	2	0	0	2

Volume Module:

Base Vol:	0	1	0	24	0	144	52	871	0	0	1066	74
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	1	0	24	0	144	52	871	0	0	1066	74
Added Vol:	0	0	0	320	0	179	195	3	0	0	3	356
PasserByVol:	0	0	0	98	0	120	98	-98	0	0	-120	120
Initial Fut:	0	1	0	442	0	443	345	776	0	0	949	550
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	1	0	442	0	443	345	776	0	0	949	550
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	0	442	0	443	345	776	0	0	949	550
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 Volume:	0	1	0	442	0	443	345	776	0	0	949	550

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.90	1.00	0.90	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.00	1.00	0.00	1.50	0.00	1.50	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	1900	0	2572	0	2574	1805	3800	0	0	3800	1615

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.17	0.19	0.20	0.00	0.00	0.25	0.34
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.00	0.11	0.00	0.18	0.00	0.39	0.21	0.57	0.00	0.00	0.37	0.37
Volume/Cap:	0.00	0.00	0.00	0.93	0.00	0.44	0.93	0.36	0.00	0.00	0.68	0.93
Delay/Veh:	0.0	27.5	0.0	43.0	0.0	15.9	56.7	8.2	0.0	0.0	20.1	42.5
User DelAdj:	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	27.5	0.0	43.0	0.0	15.9	56.7	8.2	0.0	0.0	20.1	42.5
LOS by Move:	A	C	A	D	A	B	E	A	A	A	C	D
HCM2k95thQ:	0	0	0	19	0	10	21	9	0	0	18	28

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.404
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 26 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.797
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.7
Optimal Cycle: 53 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Alternative Configuration (Mitigated)
Baseline AM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 70 Critical Vol./Cap.(X): 0.614
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.5
Optimal Cycle: 40 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: Split Phase Split Phase Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 8 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 1 0 0 1 0 1 0 1 1 0 2 0 0 0 0 2 0 1
Volume Module:except thru movements
Base Vol: 0 1 0 48 0 168 142 1039 0 0 1240 48
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 1 0 48 0 168 142 1039 0 0 1240 48
Added Vol: 0 0 0 127 0 66 77 1 0 0 5 140
PasserByVol: 0 0 0 21 0 26 21 -21 0 0 -26 26
Initial Fut: 0 1 0 196 0 260 240 1019 0 0 1219 214
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 1 0 196 0 260 240 1019 0 0 1219 214
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1 0 196 0 260 240 1019 0 0 1219 214
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
FinalVolume: 0 1 0 196 0 260 240 1019 0 0 1219 214
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.90 1.00 0.90 0.95 1.00 1.00 1.00 1.00 0.85
Lanes: 0.00 1.00 0.00 1.43 0.00 1.57 1.00 2.00 0.00 0.00 2.00 1.00
Final Sat.: 0 1900 0 2434 0 2672 1805 3800 0 0 3800 1615
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.08 0.00 0.10 0.13 0.27 0.00 0.00 0.32 0.13
Crit Moves: **** **** **** ****
Green/Cycle: 0.00 0.11 0.00 0.11 0.00 0.30 0.19 0.64 0.00 0.00 0.45 0.45
Volume/Cap: 0.00 0.00 0.00 0.71 0.00 0.32 0.71 0.42 0.00 0.00 0.71 0.29
Delay/Veh: 0.0 27.5 0.0 33.4 0.0 19.0 33.2 6.2 0.0 0.0 16.7 12.2
User DelAdj: 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 27.5 0.0 33.4 0.0 19.0 33.2 6.2 0.0 0.0 16.7 12.2
LOS by Move: A C A C A B C A A A B B
HCM2k95thQ: 0 0 0 9 0 6 12 11 0 0 21 6
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.266
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.6
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.263
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.1
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Alternative Configuration (Mitigated)
Baseline PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 70 Critical Vol./Cap.(X): 0.757
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.4
Optimal Cycle: 55 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: Split Phase Split Phase Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 8 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 1 0 0 1 0 1 0 1 1 0 2 0 0 0 0 2 0 1
Volume Module:except thru movements
Base Vol: 0 1 0 76 0 387 54 939 0 0 1193 38
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.08 1.00 1.00 1.00 1.00
Initial Bse: 0 1 0 76 0 387 54 1014 0 0 1193 38
Added Vol: 0 0 0 278 0 156 183 3 0 0 2 334
PasserByVol: 0 0 0 86 0 105 86 -86 0 0 -105 105
Initial Fut: 0 1 0 440 0 648 323 931 0 0 1090 477
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 1 0 440 0 648 323 931 0 0 1090 477
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1 0 440 0 648 323 931 0 0 1090 477
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
FinalVolume: 0 1 0 440 0 648 323 931 0 0 1090 477
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.89 1.00 0.89 0.95 1.00 1.00 1.00 1.00 0.85
Lanes: 0.00 1.00 0.00 1.40 0.00 1.60 1.00 2.00 0.00 0.00 2.00 1.00
Final Sat.: 0 1900 0 2382 0 2707 1805 3800 0 0 3800 1615
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.18 0.00 0.24 0.18 0.25 0.00 0.00 0.29 0.30
Crit Moves: **** **** ****
Green/Cycle: 0.00 0.11 0.00 0.21 0.00 0.42 0.21 0.54 0.00 0.00 0.34 0.34
Volume/Cap: 0.00 0.00 0.00 0.87 0.00 0.57 0.87 0.45 0.00 0.00 0.85 0.87
Delay/Veh: 0.0 27.5 0.0 33.5 0.0 16.0 46.3 9.8 0.0 0.0 26.8 35.8
User DelAdj: 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 27.5 0.0 33.5 0.0 16.0 46.3 9.8 0.0 0.0 26.8 35.8
LOS by Move: A C A C A B D A A C D
HCM2k95thQ: 0 0 0 18 0 14 19 12 0 0 25 24
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.571
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.5
Optimal Cycle: 30 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume).

Saturation Flow Module:

Table with 12 columns for saturation flow metrics (Sat/Lane, Adjustment, Lanes, Final Sat).

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 1.031
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 22.7
Optimal Cycle: 180 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume).

Saturation Flow Module:

Table with 12 columns for saturation flow metrics (Sat/Lane, Adjustment, Lanes, Final Sat).

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Alternative Configuration (Mitigated)
 Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

Curtis Park Village
 Alternative Configuration (Mitigated)
 Baseline Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #17 Road A/Sutterville Road

 Cycle (sec): 70 Critical Vol./Cap.(X): 0.758
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.3
 Optimal Cycle: 55 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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	8	0	4	0	10	4	10	0	0	10	10
Lanes:	0	0	1	0	0	1	1	0	2	0	0	1

Volume Module:
 Base Vol: 0 1 0 21 0 97 41 700 0 0 765 21
 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 1 0 21 0 97 41 700 0 0 765 21
 Added Vol: 0 0 0 320 0 179 195 3 0 0 3 356
 PasserByVol: 0 0 0 98 0 120 98 -98 0 0 -120 120
 Initial Fut: 0 1 0 439 0 396 334 605 0 0 648 497
 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 1 0 439 0 396 334 605 0 0 648 497
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 0 1 0 439 0 396 334 605 0 0 648 497
 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
 FinalVolume: 0 1 0 439 0 396 334 605 0 0 648 497

 Saturation Flow Module:
 Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
 Adjustment: 1.00 1.00 1.00 0.90 1.00 0.90 0.95 1.00 1.00 1.00 1.00 0.85
 Lanes: 0.00 1.00 0.00 1.53 0.00 1.47 1.00 2.00 0.00 0.00 2.00 1.00
 Final Sat.: 0 1900 0 2623 0 2535 1805 3800 0 0 3800 1615

 Capacity Analysis Module:
 Vol/Sat: 0.00 0.00 0.00 0.17 0.00 0.16 0.19 0.16 0.00 0.00 0.17 0.31
 Crit Moves: **** **** ****
 Green/Cycle: 0.00 0.11 0.00 0.19 0.00 0.40 0.21 0.57 0.00 0.00 0.35 0.35
 Volume/Cap: 0.00 0.00 0.00 0.87 0.00 0.39 0.87 0.28 0.00 0.00 0.48 0.87
 Delay/Veh: 0.0 27.5 0.0 36.3 0.0 14.8 45.7 7.9 0.0 0.0 17.9 35.0
 User DelAdj: 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 27.5 0.0 36.3 0.0 14.8 45.7 7.9 0.0 0.0 17.9 35.0
 LOS by Move: A C A D A B D A A A B C
 HCM2k95thQ: 0 0 0 17 0 9 19 7 0 0 11 24

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.376
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.4
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume).

Saturation Flow Module:

Table with 12 columns for saturation flow metrics (Sat/Lane, Adjustment, Lanes, Final Sat.).

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.740
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.4
Optimal Cycle: 45 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume).

Saturation Flow Module:

Table with 12 columns for saturation flow metrics (Sat/Lane, Adjustment, Lanes, Final Sat.).

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Alternative Configuration (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 100 Critical Vol./Cap.(X): 0.793
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.9
Optimal Cycle: OPTIMIZED 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: Split Phase Split Phase Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 8 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 1 0 0 1 0 1 0 1 1 0 2 0 0 0 0 2 0 1
Volume Module:except thru movements
Base Vol: 0 1 0 32 0 196 338 1521 0 0 1553 107
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 1 0 32 0 196 338 1521 0 0 1553 107
Added Vol: 0 0 0 127 0 66 77 1 0 0 5 140
PasserByVol: 0 0 0 21 0 26 21 -21 0 0 -26 26
Initial Fut: 0 1 0 180 0 288 436 1501 0 0 1532 273
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 1 0 180 0 288 436 1501 0 0 1532 273
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1 0 180 0 288 436 1501 0 0 1532 273
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
FinalVolume: 0 1 0 180 0 288 436 1501 0 0 1532 273
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.89 1.00 0.89 0.95 1.00 1.00 1.00 1.00 0.85
Lanes: 0.00 1.00 0.00 1.38 0.00 1.62 1.00 2.00 0.00 0.00 2.00 1.00
Final Sat.: 0 1900 0 2343 0 2734 1805 3800 0 0 3800 1615
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.08 0.00 0.11 0.24 0.40 0.00 0.00 0.40 0.17
Crit Moves: **** **** **** ****
Green/Cycle: 0.00 0.08 0.00 0.09 0.00 0.37 0.28 0.74 0.00 0.00 0.46 0.46
Volume/Cap: 0.00 0.01 0.00 0.87 0.00 0.29 0.87 0.53 0.00 0.00 0.87 0.36
Delay/Veh: 0.0 42.4 0.0 59.2 0.0 22.5 49.4 5.7 0.0 0.0 29.0 17.6
User DelAdj: 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 42.4 0.0 59.2 0.0 22.5 49.4 5.7 0.0 0.0 29.0 17.6
LOS by Move: A D A E A C D A A A C B
HCM2k95thQ: 0 0 0 13 0 8 28 18 0 0 40 11
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.422
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.6
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, Reduced, PCE, MLF, Final).

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.523
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.6
Optimal Cycle: 30 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, Reduced, PCE, MLF, Final).

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Alternative Configuration (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 100 Critical Vol./Cap.(X): 0.875
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 33.6
Optimal Cycle: OPTIMIZED 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: Split Phase Split Phase Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 8 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 1 0 0 1 0 1 0 1 1 0 2 0 0 0 0 2 0 1
Volume Module:except thru movements
Base Vol: 0 1 0 111 0 489 89 1419 0 0 1603 50
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 1 0 111 0 489 89 1419 0 0 1603 50
Added Vol: 0 0 0 278 0 156 183 3 0 0 2 334
PasserByVol: 0 0 0 86 0 105 86 -86 0 0 -105 105
Initial Fut: 0 1 0 475 0 750 358 1336 0 0 1500 489
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 1 0 475 0 750 358 1336 0 0 1500 489
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1 0 475 0 750 358 1336 0 0 1500 489
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
FinalVolume: 0 1 0 475 0 750 358 1336 0 0 1500 489
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.89 1.00 0.89 0.95 1.00 1.00 1.00 1.00 0.85
Lanes: 0.00 1.00 0.00 1.39 0.00 1.61 1.00 2.00 0.00 0.00 2.00 1.00
Final Sat.: 0 1900 0 2349 0 2729 1805 3800 0 0 3800 1615
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.20 0.00 0.27 0.20 0.35 0.00 0.00 0.39 0.30
Crit Moves: **** **** **** ****
Green/Cycle: 0.00 0.08 0.00 0.21 0.00 0.42 0.21 0.62 0.00 0.00 0.41 0.41
Volume/Cap: 0.00 0.01 0.00 0.96 0.00 0.66 0.96 0.57 0.00 0.00 0.96 0.74
Delay/Veh: 0.0 42.4 0.0 55.2 0.0 24.2 74.8 11.5 0.0 0.0 42.6 29.1
User DelAdj: 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 42.4 0.0 55.2 0.0 24.2 74.8 11.5 0.0 0.0 42.6 29.1
LOS by Move: A D A E A C E B A A D C
HCM2k95thQ: 0 0 0 27 0 22 27 22 0 0 46 25
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.668
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.2
Optimal Cycle: 37 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table showing traffic volume data for various approaches and movements, including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table showing saturation flow data for various approaches and movements, including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table showing capacity analysis data for various approaches and movements, including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.996
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 24.7
Optimal Cycle: 129 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table showing traffic volume data for various approaches and movements, including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table showing saturation flow data for various approaches and movements, including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table showing capacity analysis data for various approaches and movements, including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Alternative Configuration (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.774
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 27.8
Optimal Cycle: OPTIMIZED 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: Split Phase Split Phase Protected Protected
Rights: Include Include Include Include
Min. Green: 0 8 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 1 0 0 1 0 1 0 1 1 0 2 0 0 0 0 2 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol: 0 1 0 24 0 144 52 871 0 0 1066 74
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 1 0 24 0 144 52 871 0 0 1066 74
Added Vol: 0 0 0 320 0 179 195 3 0 0 3 356
PasserByVol: 0 0 0 98 0 120 98 -98 0 0 -120 120
Initial Fut: 0 1 0 442 0 443 345 776 0 0 949 550
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 1 0 442 0 443 345 776 0 0 949 550
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1 0 442 0 443 345 776 0 0 949 550
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
FinalVolume: 0 1 0 442 0 443 345 776 0 0 949 550
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.90 1.00 0.90 0.95 1.00 1.00 1.00 1.00 0.85
Lanes: 0.00 1.00 0.00 1.50 0.00 1.50 1.00 2.00 0.00 0.00 2.00 1.00
Final Sat.: 0 1900 0 2572 0 2574 1805 3800 0 0 3800 1615
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.17 0.00 0.17 0.19 0.20 0.00 0.00 0.25 0.34
Crit Moves: **** **** ****
Green/Cycle: 0.00 0.08 0.00 0.20 0.00 0.43 0.23 0.63 0.00 0.00 0.40 0.40
Volume/Cap: 0.00 0.01 0.00 0.85 0.00 0.40 0.85 0.33 0.00 0.00 0.62 0.85
Delay/Veh: 0.0 42.4 0.0 45.0 0.0 19.9 52.3 8.8 0.0 0.0 24.6 37.3
User DelAdj: 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 42.4 0.0 45.0 0.0 19.9 52.3 8.8 0.0 0.0 24.6 37.3
LOS by Move: A D A D A B D A A C D
HCM2k95thQ: 0 0 0 21 0 12 23 11 0 0 22 31

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.404
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 26 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.752
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 13.6
Optimal Cycle: 45 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline AM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 70 Critical Vol./Cap.(X): 0.780
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.2
Optimal Cycle: 58 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: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 0 0 0 1 0 0 0 1 1 0 2 0 0 0 0 1 1 0
Volume Module:except thru movements
Base Vol: 0 0 0 48 0 168 142 1039 0 0 1240 48
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 0 0 48 0 168 142 1039 0 0 1240 48
Added Vol: 0 0 0 127 0 66 77 1 0 0 5 140
PasserByVol: 0 0 0 21 0 26 21 -21 0 0 -26 26
Initial Fut: 0 0 0 196 0 260 240 1019 0 0 1219 214
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 0 0 196 0 260 240 1019 0 0 1219 214
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 196 0 260 240 1019 0 0 1219 214
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
FinalVolume: 0 0 0 196 0 260 240 1019 0 0 1219 214
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.95 1.00 0.85 0.95 1.00 1.00 1.00 0.98 0.98
Lanes: 0.00 0.00 0.00 1.00 0.00 1.00 1.00 2.00 0.00 0.00 1.70 0.30
Final Sat.: 0 0 0 1805 0 1615 1805 3800 0 0 3161 555
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.11 0.00 0.16 0.13 0.27 0.00 0.00 0.39 0.39
Crit Moves: ****
Green/Cycle: 0.00 0.00 0.00 0.21 0.00 0.21 0.17 0.66 0.00 0.00 0.49 0.49
Volume/Cap: 0.00 0.00 0.00 0.53 0.00 0.78 0.78 0.40 0.00 0.00 0.78 0.78
Delay/Veh: 0.0 0.0 0.0 26.1 0.0 37.5 39.8 5.5 0.0 0.0 16.8 16.8
User DelAdj: 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 0.0 0.0 26.1 0.0 37.5 39.8 5.5 0.0 0.0 16.8 16.8
LOS by Move: A A A C A D D A A A B B
HCM2k95thQ: 0 0 0 9 0 14 14 10 0 0 26 26
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.405
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.9
Optimal Cycle: 0 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, Reduced, PCE, MLF, Final).

Saturation Flow Module table with 12 columns for adjustment factors (Adj, Lanes, Final Sat.).

Capacity Analysis Module table with 12 columns for Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.263
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.1
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, Reduced, PCE, MLF, Final).

Saturation Flow Module table with 12 columns for adjustment factors (Sat/Lane, Adj, Lanes, Final Sat.).

Capacity Analysis Module table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 70 Critical Vol./Cap.(X): 1.162
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 76.7
Optimal Cycle: 180 Level Of Service: E
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 0 0 0 1 0 0 0 1 1 0 2 0 0 0 0 1 1 0
Volume Module:except thru movements
Base Vol: 0 0 0 76 0 387 54 939 0 0 1193 38
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.08 1.00 1.00 1.00 1.00
Initial Bse: 0 0 0 76 0 387 54 1014 0 0 1193 38
Added Vol: 0 0 0 278 0 156 183 3 0 0 2 334
PasserByVol: 0 0 0 86 0 105 86 -86 0 0 -105 105
Initial Fut: 0 0 0 440 0 648 323 931 0 0 1090 477
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 0 0 440 0 648 323 931 0 0 1090 477
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 440 0 648 323 931 0 0 1090 477
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
FinalVolume: 0 0 0 440 0 648 323 931 0 0 1090 477
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.95 1.00 0.85 0.95 1.00 1.00 1.00 0.95 0.95
Lanes: 0.00 0.00 0.00 1.00 0.00 1.00 1.00 2.00 0.00 0.00 1.39 0.61
Final Sat.: 0 0 0 1805 0 1615 1805 3800 0 0 2522 1104
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.24 0.00 0.40 0.18 0.25 0.00 0.00 0.43 0.43
Crit Moves: ****
Green/Cycle: 0.00 0.00 0.00 0.35 0.00 0.35 0.15 0.53 0.00 0.00 0.37 0.37
Volume/Cap: 0.00 0.00 0.00 0.71 0.00 1.16 1.16 0.47 0.00 0.00 1.16 1.16
Delay/Veh: 0.0 0.0 0.0 23.5 0.0 114.2 134.7 10.6 0.0 0.0 103 103.4
User DelAdj: 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 0.0 0.0 23.5 0.0 114.2 134.7 10.6 0.0 0.0 103 103.4
LOS by Move: A A A C A F B A A F F
HCM2k95thQ: 0 0 0 18 0 47 28 13 0 0 54 54
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.633
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 15.8
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach.

Saturation Flow Module table showing Adjustment, Lanes, and Final Sat. for each approach.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 1.031
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 22.7
Optimal Cycle: 180 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for each approach.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Alternative Configuration - RdA/10th Av - All-Way Stops
 Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

Curtis Park Village
 Alternative Configuration - RdA/10th Av - All-Way Stops
 Baseline Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
 Intersection #17 Road A/Sutterville Road
 Cycle (sec): 70 Critical Vol./Cap.(X): 0.864
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 27.8
 Optimal Cycle: 75 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:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	4	0	10	4	10	0	0	10	10
Lanes:	0	0	0	1	0	1	1	0	0	0	1	0

Volume Module:

Base Vol:	0	0	0	21	0	97	41	700	0	0	765	21
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	0	0	21	0	97	41	700	0	0	765	21
Added Vol:	0	0	0	320	0	179	195	3	0	0	3	356
PasserByVol:	0	0	0	98	0	120	98	-98	0	0	-120	120
Initial Fut:	0	0	0	439	0	396	334	605	0	0	648	497
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	0	0	439	0	396	334	605	0	0	648	497
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	439	0	396	334	605	0	0	648	497
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
FinalVolume:	0	0	0	439	0	396	334	605	0	0	648	497

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.00	1.00	1.00	0.94	0.94
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	1.13	0.87
Final Sat.:	0	0	0	1805	0	1615	1805	3800	0	0	2011	1542

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.24	0.00	0.25	0.19	0.16	0.00	0.00	0.32	0.32
Crit Moves:				****			****			****		
Green/Cycle:	0.00	0.00	0.00	0.28	0.00	0.28	0.21	0.59	0.00	0.00	0.37	0.37
Volume/Cap:	0.00	0.00	0.00	0.86	0.00	0.86	0.86	0.27	0.00	0.00	0.86	0.86
Delay/Veh:	0.0	0.0	0.0	37.1	0.0	39.3	44.4	7.1	0.0	0.0	26.4	26.4
User DelAdj:	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	0.0	0.0	37.1	0.0	39.3	44.4	7.1	0.0	0.0	26.4	26.4
LOS by Move:	A	A	A	D	A	D	D	A	A	A	C	C
HCM2k95thQ:	0	0	0	22	0	21	19	7	0	0	26	26

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.502
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West) and 3 rows: Movement (L, T, R), Control (Stop Sign), Rights (Include), and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.740
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.4
Optimal Cycle: 45 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West) and 3 rows: Movement (L, T, R), Control (Permitted), Rights (Include), and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative AM Peak Hour

Scenario Report

Scenario: AM
 Command: AM
 Volume: AM
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: AM
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: AM

Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative AM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.829
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.7
 Optimal Cycle: 67 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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	8	0	4	0	10	4	10	0	0	10	10
Lanes:	0	0	1	0	0	1	1	0	2	0	0	1

Volume Module:except thru movements

Base Vol:	0	1	0	32	0	196	338	1521	0	0	1553	107
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	1	0	32	0	196	338	1521	0	0	1553	107
Added Vol:	0	0	0	127	0	66	77	1	0	0	5	140
PasserByVol:	0	0	0	21	0	26	21	-21	0	0	-26	26
Initial Fut:	0	1	0	180	0	288	436	1501	0	0	1532	273
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	1	0	180	0	288	436	1501	0	0	1532	273
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	0	180	0	288	436	1501	0	0	1532	273
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
FinalVolume:	0	1	0	180	0	288	436	1501	0	0	1532	273

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.89	1.00	0.89	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.00	1.00	0.00	1.38	0.00	1.62	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	1900	0	2343	0	2734	1805	3800	0	0	3800	1615

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.08	0.00	0.11	0.24	0.40	0.00	0.00	0.40	0.17
Crit Moves:	****			****			****				****	
Green/Cycle:	0.00	0.11	0.00	0.08	0.00	0.33	0.25	0.68	0.00	0.00	0.42	0.42
Volume/Cap:	0.00	0.00	0.00	0.95	0.00	0.32	0.95	0.58	0.00	0.00	0.95	0.40
Delay/Veh:	0.0	27.5	0.0	61.0	0.0	17.5	56.0	6.4	0.0	0.0	32.5	14.4
User DelAdj:	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	27.5	0.0	61.0	0.0	17.5	56.0	6.4	0.0	0.0	32.5	14.4
LOS by Move:	A	C	A	E	A	B	E	A	A	A	C	B
HCM2k95thQ:	0	0	0	12	0	6	26	17	0	0	37	9

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.832
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 19.1
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Stop Sign.

Volume Module table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for saturation and 4 rows for Adjustment, Lanes, Final Sat., etc.

Capacity Analysis Module table with 12 columns for capacity and 12 rows for Vol/Sat, Crit Moves, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.409
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.0
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Permitted, Split Phase.

Volume Module table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for saturation and 4 rows for Adjustment, Lanes, Final Sat., etc.

Capacity Analysis Module table with 12 columns for capacity and 12 rows for Vol/Sat, Crit Moves, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative PM Peak Hour

Scenario Report

Scenario: PM
 Command: PM
 Volume: PM
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: PM
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: PM

Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
 Intersection #17 Road A/Sutterville Road
 Cycle (sec): 70 Critical Vol./Cap.(X): 0.913
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 40.4
 Optimal Cycle: 91 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	8	0	4	0	10	4	10	0	0	10	10
Lanes:	0	0	1	0	0	1	1	0	2	0	0	2

Volume Module:except thru movements

Base Vol:	0	1	0	111	0	489	89	1419	0	0	1603	50
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	1	0	111	0	489	89	1419	0	0	1603	50
Added Vol:	0	0	0	278	0	156	183	3	0	0	2	334
PasserByVol:	0	0	0	86	0	105	86	-86	0	0	-105	105
Initial Fut:	0	1	0	475	0	750	358	1336	0	0	1500	489
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	1	0	475	0	750	358	1336	0	0	1500	489
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	0	475	0	750	358	1336	0	0	1500	489
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
FinalVolume:	0	1	0	475	0	750	358	1336	0	0	1500	489

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.89	1.00	0.89	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.00	1.00	0.00	1.39	0.00	1.61	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	1900	0	2349	0	2729	1805	3800	0	0	3800	1615

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.20	0.00	0.27	0.20	0.35	0.00	0.00	0.39	0.30
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.00	0.11	0.00	0.19	0.00	0.38	0.19	0.56	0.00	0.00	0.38	0.38
Volume/Cap:	0.00	0.00	0.00	1.05	0.00	0.72	1.05	0.62	0.00	0.00	1.05	0.81
Delay/Veh:	0.0	27.5	0.0	68.9	0.0	20.0	91.0	10.8	0.0	0.0	60.1	27.3
User DelAdj:	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	27.5	0.0	68.9	0.0	20.0	91.0	10.8	0.0	0.0	60.1	27.3
LOS by Move:	A	C	A	E	A	C	F	B	A	A	E	C
HCM2k95thQ:	0	0	0	25	0	19	26	19	0	0	44	22

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.774
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 21.5
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, Reduced, PCE, MLF, Final).

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, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 1.342
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 50.8
Optimal Cycle: 180 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, Reduced, PCE, MLF, Final).

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, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 70 Critical Vol./Cap.(X): 0.808
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 26.9
Optimal Cycle: 63 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: Split Phase Split Phase Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 8 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 1 0 0 1 0 1 0 1 1 0 2 0 0 0 0 2 0 1
Volume Module:
Base Vol: 0 1 0 24 0 144 52 871 0 0 1066 74
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 1 0 24 0 144 52 871 0 0 1066 74
Added Vol: 0 0 0 320 0 179 195 3 0 0 3 356
PasserByVol: 0 0 0 98 0 120 98 -98 0 0 -120 120
Initial Fut: 0 1 0 442 0 443 345 776 0 0 949 550
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 1 0 442 0 443 345 776 0 0 949 550
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1 0 442 0 443 345 776 0 0 949 550
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
FinalVolume: 0 1 0 442 0 443 345 776 0 0 949 550
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.90 1.00 0.90 0.95 1.00 1.00 1.00 1.00 0.85
Lanes: 0.00 1.00 0.00 1.50 0.00 1.50 1.00 2.00 0.00 0.00 2.00 1.00
Final Sat.: 0 1900 0 2572 0 2574 1805 3800 0 0 3800 1615
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.17 0.00 0.17 0.19 0.20 0.00 0.00 0.25 0.34
Crit Moves: ****
Green/Cycle: 0.00 0.11 0.00 0.18 0.00 0.39 0.21 0.57 0.00 0.00 0.37 0.37
Volume/Cap: 0.00 0.00 0.00 0.93 0.00 0.44 0.93 0.36 0.00 0.00 0.68 0.93
Delay/Veh: 0.0 27.5 0.0 43.0 0.0 15.9 56.7 8.2 0.0 0.0 20.1 42.5
User DelAdj: 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 27.5 0.0 43.0 0.0 15.9 56.7 8.2 0.0 0.0 20.1 42.5
LOS by Move: A C A D A B E A A A C D
HCM2k95thQ: 0 0 0 19 0 10 21 9 0 0 18 28
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave
Cycle (sec): 70 Critical Vol./Cap.(X): 0.573
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Adjustment, Lanes, and Final Sat values.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1
Cycle (sec): 70 Critical Vol./Cap.(X): 0.797
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.7
Optimal Cycle: 53 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat values.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline AM Peak Hour (Mitigated)

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline AM Peak Hour (Mitigated)

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 70 Critical Vol./Cap.(X): 0.614
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.5
Optimal Cycle: 40 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: Split Phase Split Phase Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 8 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 1 0 0 1 0 1 0 1 1 0 2 0 0 0 0 2 0 1
Volume Module:except thru movements
Base Vol: 0 1 0 48 0 168 142 1039 0 0 1240 48
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 1 0 48 0 168 142 1039 0 0 1240 48
Added Vol: 0 0 0 127 0 66 77 1 0 0 5 140
PasserByVol: 0 0 0 21 0 26 21 -21 0 0 -26 26
Initial Fut: 0 1 0 196 0 260 240 1019 0 0 1219 214
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 1 0 196 0 260 240 1019 0 0 1219 214
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1 0 196 0 260 240 1019 0 0 1219 214
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
FinalVolume: 0 1 0 196 0 260 240 1019 0 0 1219 214
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.90 1.00 0.90 0.95 1.00 1.00 1.00 1.00 0.85
Lanes: 0.00 1.00 0.00 1.43 0.00 1.57 1.00 2.00 0.00 0.00 2.00 1.00
Final Sat.: 0 1900 0 2434 0 2672 1805 3800 0 0 3800 1615
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.08 0.00 0.10 0.13 0.27 0.00 0.00 0.32 0.13
Crit Moves: ****
Green/Cycle: 0.00 0.11 0.00 0.11 0.00 0.30 0.19 0.64 0.00 0.00 0.45 0.45
Volume/Cap: 0.00 0.00 0.00 0.71 0.00 0.32 0.71 0.42 0.00 0.00 0.71 0.29
Delay/Veh: 0.0 27.5 0.0 33.4 0.0 19.0 33.2 6.2 0.0 0.0 16.7 12.2
User DelAdj: 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 27.5 0.0 33.4 0.0 19.0 33.2 6.2 0.0 0.0 16.7 12.2
LOS by Move: A C A C A B C A A A B B
HCM2k95thQ: 0 0 0 9 0 6 12 11 0 0 21 6
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline AM Peak Hour (Mitigated)

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.405
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.9
Optimal Cycle: 0 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic volumes and adjustments. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline AM Peak Hour (Mitigated)

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.263
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.1
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic volumes and adjustments. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Alternative Configuration - RdA/10th Av - All-Way Stops
 Baseline PM Peak Hour (Mitigated)

Scenario Report

Scenario: PM
 Command: PM
 Volume: PM
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: PM
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: PM

 Curtis Park Village
 Alternative Configuration - RdA/10th Av - All-Way Stops
 Baseline PM Peak Hour (Mitigated)

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #17 Road A/Sutterville Road

 Cycle (sec): 70 Critical Vol./Cap.(X): 0.757
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.4
 Optimal Cycle: 55 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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	8	0	4	0	10	4	10	0	0	10	10
Lanes:	0	0	1	0	0	1	1	0	2	0	0	1

 Volume Module:except thru movements
 Base Vol: 0 1 0 76 0 387 54 939 0 0 1193 38
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.08 1.00 1.00 1.00 1.00
 Initial Bse: 0 1 0 76 0 387 54 1014 0 0 1193 38
 Added Vol: 0 0 0 278 0 156 183 3 0 0 2 334
 PasserByVol: 0 0 0 86 0 105 86 -86 0 0 -105 105
 Initial Fut: 0 1 0 440 0 648 323 931 0 0 1090 477
 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 1 0 440 0 648 323 931 0 0 1090 477
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 0 1 0 440 0 648 323 931 0 0 1090 477
 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
 FinalVolume: 0 1 0 440 0 648 323 931 0 0 1090 477

 Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.89	1.00	0.89	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.00	1.00	0.00	1.40	0.00	1.60	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	1900	0	2382	0	2707	1805	3800	0	0	3800	1615

 Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.18	0.00	0.24	0.18	0.25	0.00	0.00	0.29	0.30
Crit Moves:	****			****			****					****
Green/Cycle:	0.00	0.11	0.00	0.21	0.00	0.42	0.21	0.54	0.00	0.00	0.34	0.34
Volume/Cap:	0.00	0.00	0.00	0.87	0.00	0.57	0.87	0.45	0.00	0.00	0.85	0.87
Delay/Veh:	0.0	27.5	0.0	33.5	0.0	16.0	46.3	9.8	0.0	0.0	26.8	35.8
User DelAdj:	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	27.5	0.0	33.5	0.0	16.0	46.3	9.8	0.0	0.0	26.8	35.8
LOS by Move:	A	C	A	C	A	B	D	A	A	A	C	D
HCM2k95thQ:	0	0	0	18	0	14	19	12	0	0	25	24

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline PM Peak Hour (Mitigated)

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.633
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 15.8
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline PM Peak Hour (Mitigated)

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 1.031
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 22.7
Optimal Cycle: 180 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Alternative Configuration - RdA/10th Av - All-Way Stops
 Baseline Saturday Peak Hour (Mitigated)

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

Curtis Park Village
 Alternative Configuration - RdA/10th Av - All-Way Stops
 Baseline Saturday Peak Hour (Mitigated)

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.758
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.3
 Optimal Cycle: 55 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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	8	0	4	0	10	4	10	0	0	10	10
Lanes:	0	0	1	0	0	1	1	0	2	0	0	1

Volume Module:

Base Vol:	0	1	0	21	0	97	41	700	0	0	765	21
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	1	0	21	0	97	41	700	0	0	765	21
Added Vol:	0	0	0	320	0	179	195	3	0	0	3	356
PasserByVol:	0	0	0	98	0	120	98	-98	0	0	-120	120
Initial Fut:	0	1	0	439	0	396	334	605	0	0	648	497
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	1	0	439	0	396	334	605	0	0	648	497
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	0	439	0	396	334	605	0	0	648	497
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
FinalVolume:	0	1	0	439	0	396	334	605	0	0	648	497

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.90	1.00	0.90	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.00	1.00	0.00	1.53	0.00	1.47	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	1900	0	2623	0	2535	1805	3800	0	0	3800	1615

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.16	0.19	0.16	0.00	0.00	0.17	0.31
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.00	0.11	0.00	0.19	0.00	0.40	0.21	0.57	0.00	0.00	0.35	0.35
Volume/Cap:	0.00	0.00	0.00	0.87	0.00	0.39	0.87	0.28	0.00	0.00	0.48	0.87
Delay/Veh:	0.0	27.5	0.0	36.3	0.0	14.8	45.7	7.9	0.0	0.0	17.9	35.0
User DelAdj:	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	27.5	0.0	36.3	0.0	14.8	45.7	7.9	0.0	0.0	17.9	35.0
LOS by Move:	A	C	A	D	A	B	D	A	A	A	B	C
HCM2k95thQ:	0	0	0	17	0	9	19	7	0	0	11	24

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline Saturday Peak Hour (Mitigated)

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave
Cycle (sec): 70 Critical Vol./Cap.(X): 0.502
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach.

Saturation Flow Module table showing Adjustment, Lanes, and Final Sat. for each approach.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline Saturday Peak Hour (Mitigated)

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1
Cycle (sec): 70 Critical Vol./Cap.(X): 0.740
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.4
Optimal Cycle: 45 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for each approach.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ, and LOS by Move.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative AM Peak Hour(Mitigated)

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative AM Peak Hour(Mitigated)

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 100 Critical Vol./Cap.(X): 0.793
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.9
Optimal Cycle: OPTIMIZED 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: Split Phase Split Phase Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 8 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 1 0 0 1 0 1 0 1 1 0 2 0 0 0 0 2 0 1
Volume Module:except thru movements
Base Vol: 0 1 0 32 0 196 338 1521 0 0 1553 107
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 1 0 32 0 196 338 1521 0 0 1553 107
Added Vol: 0 0 0 127 0 66 77 1 0 0 5 140
PasserByVol: 0 0 0 21 0 26 21 -21 0 0 -26 26
Initial Fut: 0 1 0 180 0 288 436 1501 0 0 1532 273
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 1 0 180 0 288 436 1501 0 0 1532 273
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1 0 180 0 288 436 1501 0 0 1532 273
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
FinalVolume: 0 1 0 180 0 288 436 1501 0 0 1532 273
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.89 1.00 0.89 0.95 1.00 1.00 1.00 1.00 0.85
Lanes: 0.00 1.00 0.00 1.38 0.00 1.62 1.00 2.00 0.00 0.00 2.00 1.00
Final Sat.: 0 1900 0 2343 0 2734 1805 3800 0 0 3800 1615
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.08 0.00 0.11 0.24 0.40 0.00 0.00 0.40 0.17
Crit Moves: ****
Green/Cycle: 0.00 0.08 0.00 0.09 0.00 0.37 0.28 0.74 0.00 0.00 0.46 0.46
Volume/Cap: 0.00 0.01 0.00 0.87 0.00 0.29 0.87 0.53 0.00 0.00 0.87 0.36
Delay/Veh: 0.0 42.4 0.0 59.2 0.0 22.5 49.4 5.7 0.0 0.0 29.0 17.6
User DelAdj: 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 42.4 0.0 59.2 0.0 22.5 49.4 5.7 0.0 0.0 29.0 17.6
LOS by Move: A D A E A C D A A A C B
HCM2k95thQ: 0 0 0 13 0 8 28 18 0 0 40 11
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative AM Peak Hour(Mitigated)

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.832
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 19.1
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative AM Peak Hour(Mitigated)

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.523
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.6
Optimal Cycle: 30 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative PM Peak Hour (Mitigated)

Scenario Report

Scenario: PM
 Command: PM
 Volume: PM
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: PM
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: PM

Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative PM Peak Hour (Mitigated)

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #17 Road A/Sutterville Road

 Cycle (sec): 100 Critical Vol./Cap.(X): 0.875
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 33.6
 Optimal Cycle: OPTIMIZED 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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	8	0	4	0	10	4	10	0	0	10	10
Lanes:	0	0	1	0	0	1	1	0	2	0	0	1

Volume Module:except thru movements
 Base Vol: 0 1 0 111 0 489 89 1419 0 0 1603 50
 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 1 0 111 0 489 89 1419 0 0 1603 50
 Added Vol: 0 0 0 278 0 156 183 3 0 0 2 334
 PasserByVol: 0 0 0 86 0 105 86 -86 0 0 -105 105
 Initial Fut: 0 1 0 475 0 750 358 1336 0 0 1500 489
 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 1 0 475 0 750 358 1336 0 0 1500 489
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 0 1 0 475 0 750 358 1336 0 0 1500 489
 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
 FinalVolume: 0 1 0 475 0 750 358 1336 0 0 1500 489

 Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.89	1.00	0.89	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.00	1.00	0.00	1.39	0.00	1.61	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	1900	0	2349	0	2729	1805	3800	0	0	3800	1615

Capacity Analysis Module:
 Vol/Sat: 0.00 0.00 0.00 0.20 0.00 0.27 0.20 0.35 0.00 0.00 0.39 0.30
 Crit Moves: **** **
 Green/Cycle: 0.00 0.08 0.00 0.21 0.00 0.42 0.21 0.62 0.00 0.00 0.41 0.41
 Volume/Cap: 0.00 0.01 0.00 0.96 0.00 0.66 0.96 0.57 0.00 0.00 0.96 0.74
 Delay/Veh: 0.0 42.4 0.0 55.2 0.0 24.2 74.8 11.5 0.0 0.0 42.6 29.1
 User DelAdj: 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 42.4 0.0 55.2 0.0 24.2 74.8 11.5 0.0 0.0 42.6 29.1
 LOS by Move: A D A E A C E B A A D C
 HCM2k95thQ: 0 0 0 27 0 22 27 22 0 0 46 25

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative PM Peak Hour (Mitigated)

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.774
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 21.5
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach.

Saturation Flow Module table showing Adjustment, Lanes, and Final Sat. for each approach.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative PM Peak Hour (Mitigated)

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.996
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 24.7
Optimal Cycle: 129 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. for each approach.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative Saturday Peak Hour (Mitigated)

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative Saturday Peak Hour (Mitigated)

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
 Intersection #17 Road A/Sutterville Road
 Cycle (sec): 100 Critical Vol./Cap.(X): 0.774
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 27.8
 Optimal Cycle: OPTIMIZED 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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	8	0	4	0	10	4	10	0	0	10	10
Lanes:	0	0	1	0	0	1	1	0	2	0	0	1

Volume Module:

Base Vol:	0	1	0	24	0	144	52	871	0	0	1066	74
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	1	0	24	0	144	52	871	0	0	1066	74
Added Vol:	0	0	0	320	0	179	195	3	0	0	3	356
PasserByVol:	0	0	0	98	0	120	98	-98	0	0	-120	120
Initial Fut:	0	1	0	442	0	443	345	776	0	0	949	550
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	1	0	442	0	443	345	776	0	0	949	550
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	0	442	0	443	345	776	0	0	949	550
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
FinalVolume:	0	1	0	442	0	443	345	776	0	0	949	550

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.90	1.00	0.90	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.00	1.00	0.00	1.50	0.00	1.50	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	1900	0	2572	0	2574	1805	3800	0	0	3800	1615

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.17	0.19	0.20	0.00	0.00	0.25	0.34
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.00	0.08	0.00	0.20	0.00	0.43	0.23	0.63	0.00	0.00	0.40	0.40
Volume/Cap:	0.00	0.01	0.00	0.85	0.00	0.40	0.85	0.33	0.00	0.00	0.62	0.85
Delay/Veh:	0.0	42.4	0.0	45.0	0.0	19.9	52.3	8.8	0.0	0.0	24.6	37.3
User DelAdj:	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	42.4	0.0	45.0	0.0	19.9	52.3	8.8	0.0	0.0	24.6	37.3
LOS by Move:	A	D	A	D	A	B	D	A	A	A	C	D
HCM2k95thQ:	0	0	0	21	0	12	23	11	0	0	22	31

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative Saturday Peak Hour (Mitigated)

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #27 Road A/Road C/10th Ave

Cycle (sec): 70 Critical Vol./Cap.(X): 0.573
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Adjustment, Lanes, and Final Sat values.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative Saturday Peak Hour (Mitigated)

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.752
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 13.6
Optimal Cycle: 45 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat values.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ, and LOS by Move.

Note: Queue reported is the number of cars per lane.

Signal Warrant Worksheets

 Curtis Park Village
 Alternative Configuration - RdA/10th Av - All-Way Stops
 Baseline AM Peak Hour

Scenario Report

Scenario: AM
 Command: AM
 Volume: AM
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: AM
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: AM

 Curtis Park Village
 Alternative Configuration - RdA/10th Av - All-Way Stops
 Baseline AM Peak Hour

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 27 Road A/Road C/10th Ave	???	No

 Curtis Park Village
 Alternative Configuration - RdA/10th Av - All-Way Stops
 Baseline AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #27 Road A/Road C/10th Ave

Future 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	Stop Sign	Stop Sign
Lanes:	1 0 0 1 0	0 1 0 1 0	0 0 1! 0 0	0 0 1! 0 0
Initial Vol:	65 247 5	8 243 20	13 5 122	5 5 17
Major Street Volume:	588			
Minor Approach Volume:	140			
Minor Approach Volume Threshold:	468			

 SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Alternative Configuration - RdA/10th Av - All-Way Stops
Baseline PM Peak Hour

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 27 Road A/Road C/10th Ave	???	No

 Curtis Park Village
 Alternative Configuration - RdA/10th Av - All-Way Stops
 Baseline PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #27 Road A/Road C/10th Ave

Future 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	Stop Sign	Stop Sign
Lanes:	1 0 0 1 0	0 1 0 1 0	0 0 1! 0 0	0 0 1! 0 0
Initial Vol:	121 299 5	8 619 48	46 5 91	5 5 9

Major Street Volume: 1100
 Minor Approach Volume: 142
 Minor Approach Volume Threshold: 252

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

 Curtis Park Village
 Alternative Configuration - RdA/10th Av - All-Way Stops
 Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

 Curtis Park Village
 Alternative Configuration - RdA/10th Av - All-Way Stops
 Baseline Saturday Peak Hour

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 27 Road A/Road C/10th Ave	???	No

 Curtis Park Village
 Alternative Configuration - RdA/10th Av - All-Way Stops
 Baseline Saturday Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #27 Road A/Road C/10th Ave

Future 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	Stop Sign	Stop Sign
Lanes:	1 0 0 1 0	0 1 0 1 0	0 0 1! 0 0	0 0 1! 0 0
Initial Vol:	104 279 5	8 318 56	49 5 113	5 5 13

Major Street Volume: 770
 Minor Approach Volume: 167
 Minor Approach Volume Threshold: 375

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Alternative Configuration - Rd A/10th Av - All-Way Stops
Cumulative AM Peak Hour

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 27 Road A/Road C/10th Ave	???	No

 Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #27 Road A/Road C/10th Ave

Future 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	Stop Sign	Stop Sign
Lanes:	1 0 0 1 0	0 1 0 1 0	0 0 1! 0 0	0 0 1! 0 0
Initial Vol:	65 511 5	8 255 20	13 5 122	5 5 17

Major Street Volume: 864
 Minor Approach Volume: 140
 Minor Approach Volume Threshold: 335

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

 Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative PM Peak Hour

Scenario Report

Scenario: PM
 Command: PM
 Volume: PM
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: PM
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: PM

 Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative PM Peak Hour

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 27 Road A/Road C/10th Ave	???	No

 Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #27 Road A/Road C/10th Ave

Future 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	Stop Sign	Stop Sign
Lanes:	1 0 0 1 0	0 1 0 1 0	0 0 1! 0 0	0 0 1! 0 0
Initial Vol:	124 334 5	8 752 48	46 5 100	5 5 9

Major Street Volume: 1271
 Minor Approach Volume: 151
 Minor Approach Volume Threshold: 202

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

 Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

 Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative Saturday Peak Hour

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 27 Road A/Road C/10th Ave	???	No

 Curtis Park Village
 Alternative Configuration - Rd A/10th Av - All-Way Stops
 Cumulative Saturday Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #27 Road A/Road C/10th Ave

Future 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	Stop Sign	Stop Sign
Lanes:	1 0 0 1 0	0 1 0 1 0	0 0 1! 0 0	0 0 1! 0 0
Initial Vol:	126 312 5	8 333 56	49 5 138	5 5 13
Major Street Volume:	840			
Minor Approach Volume:	192			
Minor Approach Volume Threshold:	345			

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

APPENDIX C

May 26, 2009

Craig B. Anderson
Sierra Research
1801 J Street
Sacramento, CA 95811

Subject: **Curtis Park Village Air Quality Mitigation Plan**

Dear Mr. Anderson:

Thank you for submitting the updated version of the Curtis Park Village Quality Mitigation Plan to the Sacramento Metropolitan Air Quality Management District (District) for review.

The District endorses the updated version of the Curtis Park Village Air Quality Mitigation Plan (AQMP) dated March 17, 2009. The District anticipates that implementation of the Mitigation Measures described in the plan will lead to a 17.3 percent or greater reduction in operational emissions from new uses proposed for the project site. This AQMP is consistent with the District's *Recommended Guidance for Land Use Emission Reductions*. The Air District encourages the project proponents to include the AQMP in the Final Environmental Impact Report for this project.

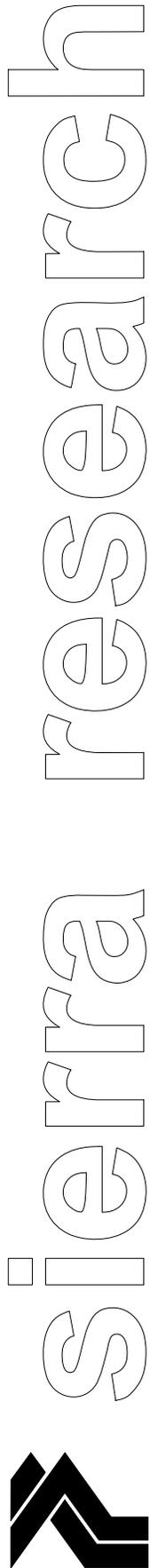
Please do not hesitate to contact me at (916) 874-2694 or jhurley@airquality.org if you have any questions.

Sincerely,



Joseph J. Hurley
Assistant Air Quality Planner Analyst

C: Larry Robinson, Sacramento Metropolitan Air Quality Management District



Curtis Park Village Air Quality Mitigation Plan

for submittal to the:

Sacramento Metropolitan Air Quality Management District

prepared for:

Petrovich Development Company

March 17, 2009

prepared by:

Sierra Research, Inc.
1801 J Street
Sacramento, California 95811
(916) 444-6666

Curtis Park Village – Air Quality Mitigation Plan

for submittal to the
Sacramento Metropolitan Air Quality Management District

Submitted by:

Petrovich Development Company
5046 Sunrise Blvd., Suite 1
Fair Oaks, CA 95628

March 17, 2009

Prepared by:

Sierra Research, Inc.
1801 J Street
Sacramento, California 95811
(916) 444-6666

Curtis Park Village - Air Quality Mitigation Plan

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Introduction

Curtis Park Village is a mixed-use retail, commercial, and residential in-fill redevelopment project located in the City of Sacramento, due south of the urban core. The project is subject to review under the California Environmental Quality Act (CEQA), which requires the preparation of an Environmental Impact Report (EIR). The project will cause both direct and indirect air quality impacts during its construction and operational phases. This Air Quality Mitigation Plan (AQMP) addresses the operational impacts by proposing mitigation measures to be applied to the project. These measures are necessary for the project to meet the requirements of CEQA and to meet regional air quality goals.

As a commenting agency, the Sacramento Metropolitan Air Quality Management District (SMAQMD) must assess whether this project has significant air pollutant emissions impacts. If emissions impacts are significant, then under SMAQMD CEQA guidelines a mitigation plan must be prepared to address these significant impacts. The analysis contained in this AQMP assumes that the emissions impacts associated with Curtis Park Village will be found to be significant. However, it will be shown that the development will provide adequate measures to offset the impacts, primarily of regional ozone precursor emissions.

Purpose of the Air Quality Mitigation Plan (AQMP)

CEQA requires that EIRs identify and evaluate any significant environmental impacts of a proposed project, prior to the application of mitigation. The analysis of significant effects must include both direct project impacts and indirect impacts.¹ The analysis must then describe feasible measures that could minimize or reduce any significant adverse impacts to the maximum feasible extent.² To assist in the evaluation of air quality impacts, the SMAQMD developed its Guide to Air Quality Assessment in Sacramento County (CEQA Guide), dated July 2004. The CEQA Guide outlines a methodology for calculating project emissions whereby a project is divided into separate construction and operational phases. For each phase, the CEQA Guide establishes significance thresholds related to elevated regional ambient ozone concentrations, which are considered cumulative impacts.³ Project emissions are compared to these significance thresholds, and mitigation measures are required for projects with emissions exceeding these thresholds.

In the CEQA process, project operational emissions are calculated and impacts are determined in the draft EIR (DEIR). The CEQA Guide and review process requires preparation of an AQMP that addresses mitigation of a project's significant operational emissions impacts as reported in the EIR.

¹ CCR Title 14, Chapter 3, Section 15126.4(a)(1), Guidelines for Implementation of the California Environmental Quality Act.

² Ibid. Section 15126.2(a).

³ SMAQMD, Guide to Air Quality Assessment in Sacramento County, July 2004, Page 2-10.

As summarized below, the Curtis Park Village project consists of a commercial and residential development of approximately 71.7 acres. Formerly part of a railyard owned by Union Pacific Railroad, the project site currently lies vacant.

Operational emissions for the proposed development will be predominantly indirect in nature, resulting from vehicle exhaust emissions related to shopper vehicles, resident vehicles, worker vehicles, delivery vehicles, and municipal service vehicles. For the purposes of this AQMP, the project's operational impacts are assumed to exceed the SMAQMD significance thresholds for regional ozone precursor emissions, prior to the application of the mitigation measures described herein.

Recognizing that indirect emissions from land use development projects can significantly impact the region's air quality, the County of Sacramento adopted a land use review requirement (Policy AQ-15) for the Air Quality Element in the General Plan.⁴ Several of the incorporated areas within Sacramento County have also adopted air quality elements to their general plans, and the City of Sacramento has proposed to do so as part of its current General Plan Update.⁵ The SMAQMD's land use review policy requires that projects with significant operational air quality impacts (related to regional ozone) reduce direct and indirect emissions by a minimum of 15% by selecting and implementing mitigation measures from a list of SMAQMD recommendations. These recommendations are contained in the SMAQMD's Recommended Guidance for Land Use Reductions, Version 2.4, updated August 15, 2007 (Land Use Guide). The SMAQMD has further determined that this 15% reduction in emissions will satisfy the "all feasible measures" mitigation requirement under CEQA for operational impacts for all jurisdictions within Sacramento County.⁶

To assist in documenting, quantifying, and monitoring the mitigation measures selected by the project proponent, the SMAQMD has prescribed that the selected operational mitigation measures be explained in the context of the AQMP. The AQMP is a standalone document separate from any other documents or plans required by CEQA or other laws, ordinances, or regulations. During the environmental review process, and usually before certification of the DEIR or Mitigated Negative Declaration (MND) by the lead agency, the SMAQMD independently endorses the AQMP via a letter. The endorsed AQMP is then referenced in the DEIR or MND as an air quality mitigation measure; appended to the DEIR or MND; and, at the discretion of the lead agency, may be referenced as a separate condition of approval.

⁴ County of Sacramento, Planning and Community Development Department, General and Advance Planning Section, *Air Quality Element of the Sacramento General Plan*, December 15, 1993, Revised May 2, 1997, Page 14, available at <http://www.planning.saccounty.net/general-plan/docs/pdf/GP-Elements/Air-Quality-Element.pdf>.

⁵ City of Sacramento, General Plan, Technical Background Report, September 2005, Section 6.5, available at http://www.sacgp.org/documents/Chapter6_EnvironmentalResources.pdf.

⁶ SMAQMD Operational Air Quality Mitigation Protocol Fact Sheet, Version 3.1, June 26, 2006, available at <http://www.airquality.org/ceqa/OperationalMitigationProtocol.pdf>.

Project Description

The project is fully described in the Introduction and Project Description chapters of the EIR. The following serves as a summary of pertinent information contained in those chapters that is relevant to the AQMP.

Curtis Park Village is a mixed-use, transit-oriented, in-fill project. The project covers a 71.7-acre site formerly occupied by a Union Pacific Railroad rail yard in the City of Sacramento, directly south of the downtown business district (see Appendices A B). The project area is generally bounded by Sutterville Road to the south, the Curtis Park residential neighborhood to the north and east, and a Union Pacific Railroad switch yard to the west (Appendix A). The project site is generally vacant and devoid of vegetation. Surrounding land uses consist of the single-family dwellings to the north and east, a freight and passenger railway corridor to the west, and commercial buildings to the south, across Sutterville Road.

The project will contain 178 single-family dwellings, 212 dwelling units in multi-family buildings, 80 affordable senior housing dwelling units, 258,641 sq. ft. of neighborhood-serving retail and commercial space, and 7.8 acres of parks and open space. Table 1 shows the general land use type by parcel. The parcel numbers are depicted in Appendix A.

Methodology

The SMAQMD guideline includes a list of potential mitigation measures approved by the SMAQMD. These measures are related to bicycle/pedestrian use, transit, parking, commercial and residential development design, building design, and commuting. Each measure has been assigned a land use type for which credit may be claimed for that measure, and a point value. The land use types include residential (R), commercial (C), and mixed-use (M). Each point, or fraction thereof, associated with a particular measure corresponds to an equal percentage of emission reductions. Residential and commercial projects may claim credit only for measures identified as “R” or “C,” respectively, while mixed-use residential and commercial projects may claim credit for any measure. Mixed-use projects claiming credit for a strictly commercial or residential measure must scale the credit claimed to that fraction of project that is commercial or residential.⁷

The SMAQMD Land Use Guide allows for a project proponent to scale the credit claimed for single land uses by one of three methods: trip generation, building square footage, or net lot area. Since the exact trip generation rates and residential square footage are not known at the time of the preparation of the AQMP, scaling will be performed using the net lot area option.

⁷ SMAQMD Land Use Guide, p. 8

In general, the project may be characterized as mixed-use. The project will therefore be claiming credit for measures primarily related to mixed uses at full credit, but will also be claiming credit for several strictly residential and commercial measures as well. The generalized land types and lot areas by parcel are shown in Table 1. Individual parcels are depicted in Appendix A. The land use type as a percentage of the project total is shown in Table 2.

**Table 1
Land Use Type and Lot Area by Parcel**

Parcel No.	Lot Area (acres)	Land Use Type
1	19.5	Residential
2	9.8	Residential
3	0.2	Residential
4	4.0	Residential
5	7.8	Residential
6	1.7	Residential
7	2.2	Retail/Commercial
8	0.5	Retail/Commercial
9	3.0	Retail/Commercial
10	1.4	Retail/Commercial
11	1.3	Retail/Commercial
12	1.1	Retail/Commercial
13	1.2	Retail/Commercial
14	0.6	Retail/Commercial
15	0.6	Retail/Commercial
16	4.6	Retail/Commercial
17	1.6	Retail/Commercial
18	0.6	Retail/Commercial
19	2.2	Retail/Commercial
20	6.8	Residential ^a
21	0.7	Residential ^a
22	0.1	Residential ^a
23	0.2	Residential ^a
Total	71.7	Mixed Use

^a Parcels 20, 21, 22, and 23 contain parks or open space. These parcels are counted as “residential” for scaling purposes since they primarily benefit the project’s residential occupants. However, these parcels are typically excluded from residential density calculations.

	Lot Area (acres)	Percent of Total Project Area	Scaling Factor for AQMP
Total Residential	50.8	70.9%	0.709
Total Commercial	20.9	29.1%	0.291
Total Mixed Use	71.7	100%	1.0

Mitigation Measures

The following headings contain the operational mitigation measures that have been selected from the SMAQMD Land Use Guide, and the non-scaled point value (percent reduction) associated with each measure. A concise explanation of how the project will incorporate and enforce the selected measure follows each heading. The scaled credit claimed for each measure is summarized at the end of this discussion, in Table 7.

M1 – Non-Residential Projects Provide Plentiful Short-term and Long-term Bicycle Parking Facilities to Meet Peak Season Maximum Demand (0.625 Points)

The availability of bicycle parking is a key factor in encouraging both employees and patrons of nonresidential establishments to use a bicycle for commuting. For this measure, the SMAQMD Land Use Guide requires a minimum ratio of one bike rack space per 20 vehicle spaces for short-term parking facilities. Long-term parking facilities should be provided at a minimum ratio of one long-term bicycle storage space per 20 employee parking spaces.

Short-term parking facilities are to be located adjacent to destination(s), within 50 feet of all primary entrances, and the racks should be a non-enclosed design that allows for the use of high-security U-shaped locks to lock the frame and one wheel to the rack. Long-term parking facilities should consist of one of the following: a bicycle locker, a locked room with short-term bicycle parking facilities and access limited to bicyclists only, or a standard rack in a location that is staffed or monitored by video surveillance during standard operating hours.

Additional requirements in the Land Use Guide stipulate that all bicycle facilities are to be weather-protected and secure. Facilities are to be at ground level and free of access restrictions that could impede bicycle storage.

Credit for this measure is being claimed for the commercial portion of the project. The bicycle parking facilities will be located at convenient locations adjacent to the parking areas of the structures. The project will contain 983 shared parking spaces. The Land

Use Guide requires that bicycle parking be provided at the rate of one short-term facility per 20 vehicle spaces; therefore, a total of 50 bicycle parking facilities will be provided, as shown in Table 3.

The Land Use Guide also specifies that long-term bicycle parking facilities should be provided at the rate of one space per 20 employee parking spaces. The project will not contain segregated employee parking. At full project implementation, the project is expected to employ 571 people, with the number of employees supporting the senior housing units undetermined. It is further estimated that up to 20% (197 spaces) of the total parking spaces may be occupied by project employee vehicles at any given time, and that these are “employee parking spaces.” This yields a minimum number of 10 long-term bicycle parking facilities. As a result, of the 50 total bicycle facilities, 10 will be long-term, as shown in Table 4.

Table 3 Total Bicycle Parking	
Total Number of Parking Spaces	Curtis Park Village Calculation
983 spaces	983 spaces / 20 = 49.2 spaces
Total Bicycle Parking Provided	50 facilities

Table 4 Long-Term Bicycle Parking	
Number of Employee Parking Spaces	Curtis Park Village Calculation
983 spaces x 20% = 197 employee spaces	197 employee spaces / 20 = 9.9 spaces
Total Long-Term Bicycle Parking Facilities	10 facilities

M4 – Entire Project is Located Within 1/2-Mile of an Existing Class I or Class II Bike Lane and Project Includes an Internal Network that Connects the Project Uses to the Existing Offsite Facility (0.625 Points)

The Freeport/21st Street Two-Way Conversion Project was recently completed by the City of Sacramento. The conversion involved converting 21st Street from a three-lane northbound street to a two-lane north-south street. Additionally, 21st Street was converted from a Class III bicycle route to a Class II bikeway with dedicated bike lanes in both the north and south directions. The project begins at the intersection of 21st Street and 4th Avenue, and continues north to Broadway. Recent improvements to 21st Street in Midtown have reduced the number of travel lanes from three to two, and added dual

bicycle lanes on each side of the street. The combination of these two projects has resulted in an unbroken Class II bike lane from the project area to the urban core.

Connectivity to this bike lane can be gained through the residential neighborhood to the north and east of the project. The project connects to this neighborhood via a new approximately 200-foot connector road to Portola Way at the northern tip of the project. The project provides an additional three connections to the neighborhood to the east, thereby facilitating bicycle travel to the new 21st Street bike lanes. Appendix C contains the latest Sacramento bikeway map and the new bicycle lanes. Future bicycle lanes are also planned for Sutterville Road running east-west along the southern boundary of the project.

Additionally, the project will provide bicycle lanes along both sides of the four-lane arterial street that intersects Sutterville Road. Similar intersection bicycle lanes were recently added to the Sutterville Bypass entrance to Sacramento City College, ¼-mile west of the entrance to the project.

M5 – The Project Provides a Pedestrian Access Network that Internally Links All Uses and Connects to All Existing or Planned External Streets and Pedestrian Facilities Contiguous with the Project Site (1.0 Point)

The project will meet the criteria of this measure by providing a complete network of internal sidewalks connecting all internal uses and existing external streets. As shown in Appendix A, all internal project streets will contain sidewalks five feet in width, with several sections exceeding this dimension. All sidewalks will be separated from the traffic lane by a vertical curb and a planter strip. The project will contain connections to the surrounding neighborhoods at Sutterville Road, 10th Avenue, Donner Way, 5th Avenue, and at the northern tip of the project to Portola Way. Project sidewalks will connect to the existing neighborhood sidewalks, eliminating the dead ends that are currently at these locations.

M6 – Site Design and Building Placement Minimize Barriers to Pedestrian Access and Interconnectivity. Physical Barriers such as Walls, Berms, Landscaping, and Slopes Between Residential and Non-Residential Uses that Impede Bicycle or Pedestrian Circulation are Eliminated (1.0 Point)

The project design does not include walls, berms, landscaping, or slopes that could impede bicycle or pedestrian flow between land uses. Rather, as outlined in site plans contained in Appendix A, connectivity between all planned uses will be maximized by broad pedestrian facilities and bicycle routes.

The project plan contains pedestrian oriented, comfortable access to all project areas. Landscape planters will guide the pedestrian traffic and discourage “jay walking” across major entry driveways. No walls will separate any internal areas of the project, but a

boundary wall will separate the development from the railroad tracks to the west. Residential property standards are included in the Curtis Park Pattern Book contained in Appendix B.

M7 – Bus or Streetcar Service Provides Headways of One Hour or Less for Stops Within 1/4-Mile; Project Provides Safe and Convenient Bicycle/Pedestrian Access to Transit Stop(s) and Provides Essential Transit Stop Improvements (i.e., Shelters, Route Information, Benches, and Lighting) (1.0 Point)

Regional Transit operates several bus routes in the area of Curtis Park Village and there are two light rail stations at opposite ends of the west side of the project site (City College and 4th Avenue/Wayne Hultgren). Both regional transit stations face west and are located across major railroad tracks and switch areas that are greater than 200 feet in depth between the project property boundary and the light rail station. The railroad operations will continue “as-is” for the foreseeable future. From a pedestrian connection perspective, the light rail stations are within walking distances of 1,200 feet and 700 feet from the Curtis Park Village site, respectively.

However, Regional Transit does provide bus circulation in the Curtis Park area and has agreed to move onto the Curtis Park Village site. This service will provide access to the light rail station at Sacramento City College within 5 minutes. The relocation of the Regional Transit bus route (Route 63) that currently moves north/south through Curtis Park on 24th Street to the Curtis Park Village main north/south street will remove from 24th Street a major circulation element that the street was never designed to accommodate. Additionally, bus stops will be provided at the 10th Avenue, Donner Way, and 5th Avenue pedestrian connections within the Curtis Park Village project to allow for a direct transit connection to Regional Transit. To and from Curtis Park Village, the bus route will connect to the Regional Transit Light Rail Station at Sacramento City College, providing direct transit access to many areas of the Sacramento region. Additionally, the Route 83 bus line runs along Sutterville Road at the southern border of the project, providing a western route to other portions of Sacramento.

Figures showing Sacramento Regional Transit’s Light Rail system and bus routes 63 and 83 are included in Appendix D.

M9 – Project design includes pedestrian/bicycle safety and calming measures in excess of jurisdictional requirements. Roadways are designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips by featuring traffic calming measures. (1.0 Point)

Credit for this measure is contingent on several project design criteria. First, all sidewalks internal to the project must be a minimum of five feet in width and feature vertical curbs. Second, project intersections cannot be “skewed,” but must meet at right angles. And finally, if the above two criteria are met, credit is granted based on the percentage of internal project intersections and streets that are improved with one or more

of the following: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, or roundabouts/mini circles, on-street parking, planter strips, or chicanes/chokers.

The project qualifies for full credit under this measure by eliminating all skewed intersections from the design. Additionally, five-foot wide sidewalks with vertical curbs are standard throughout the project. Also, all project intersections will be improved with marked crosswalks, and all project streets will contain on-street parking and a sidewalk separated by a planter strip containing shade trees.

M12 – Provide Parking Reduction less than Code (12.0 Points Maximum)

Parking for the commercial portion of the project will consist of 983 on-street and off-street parking spaces. The jurisdictional parking requirements for the project are found in Sections 17.64 and of the City Zoning Code. From these sections of the City Zoning Code, both the jurisdictional minimum and maximum parking requirements for the project were calculated, as shown in Table 5. Due to the shared parking arrangement, parking will be provided at a reduced level from what would otherwise be required.

The trip reduction factor associated with this measure was determined by utilizing the Institute of Transportation Engineers (ITE) parking generation publication.⁸ The reduction in trips was computed, as shown below, as the ratio of the difference of the parking required by code (or reduced parking below code) and ITE peak parking demand to the ITE peak parking demand for the land uses, multiplied by 50%.

$$\text{Percent Trip Reduction} = 50\% \times [(\text{Minimum parking allowed by the code} - \text{ITE peak parking demand}) / (\text{ITE peak parking demand})]$$

The parking provided by the project, the project's ITE parking demand, and the parking required by the City Zoning Code are summarized in Table 5.

⁸ The ITE Parking Generation Manual (3rd Edition) is available for purchase online at <http://www.ite.org/tripgen/parking.asp>. The ISBN number for this publication is 0-935403-79-5.

<p align="center">Table 5 Parking Demand and Parking Provided</p>							
Land Use	Project Parameter	Parking Factor Required By Code	Applicable Code Section	Code-Required No. of Spaces	ITE Peak Parking Demand	ITE-Required Parking	Parking Provided
Area 1 Retail	154,825 S.F.	4 per 1,000 S.F.	17.64.020.2	619	3.02 per 1,000 S.F.	468	597
Area 2 Retail	15,816 S.F.	4 per 1,000 S.F.	17.64.020.2	63	3.02 per 1,000 S.F.	48	63
Area 3 Restaurants	400 Seats/ 12,000 S.F.	1 per 3 seats	17.64.020.2	133	17.2 per 1,000 S.F.	207	106
Area 3 Retail	38,000 S.F.	4 per 1,000 S.F.	17.64.020.2	152	3.02 per 1,000 S.F.	115	121
Area 3 Theater	480 Seats/ 38,000 S.F.	1 per 4 seats	17.64.020.2	120	0.26 per seat	125	96
Total				1,087		963	983

From the totals in Table 5, the percent trip reduction was calculated according to the following equation:

$$\% \text{ Trip Reduction} = 50 * (1087 \text{ spaces} - 963 \text{ spaces}) / 963 \text{ spaces} = 6.44$$

The un-scaled trip reduction estimate is 6.44%. However, after the commercial scaling factor of 0.291 is applied, the credit for this measure is reduced to 1.87 points.

M13 – Provide a Parking Lot Design That Includes Clearly Marked and Shaded Pedestrian Pathways Between Transit Facilities and Building Entrances (0.5 Points)

The parking lots of the commercial portion of the project will include a pedestrian network connecting all building major entrances and transit facilities. Shading of all pedestrian pathways will be provided. Pedestrian walkways and shading are shown in the figures contained in the Appendix A.

M14 – Parking Facilities are not Adjacent to Street Frontage (1.5 Points)

Parking for this mixed-use development will be mostly hidden from view from the main road. Several techniques will be used to obscure available parking, namely (1) locating most retail and commercial parking spaces in a centralized location, with the buildings between the roads and the parking lots; (2) planters with a minimum width of 10 feet in

depth and planted with a combination of trees and shrubs; (3) fences with a maximum height of 4 feet; (4) trellis structures with vines; and (5) a site wall with a maximum height of 4 feet containing decorative finishes and details. Furthermore, the parking facilities for the senior housing area and all properties along the eastern boundary of the development will be behind the structures and only accessible from an alley way. As a result of these multiple factors, this project qualifies for the 1.5 point range.

To determine the mitigation percent, a scaling fraction was calculated based on the ratio of residential and commercial areas with obscured parking to the total project area. The ratio was calculated by summing the area of residential parcels 2, 4, 5, and 6, totaling 23.3 acres, and the area of commercial parcels 7-19, totaling 20.9 acres, and then dividing by the total project area of 71.7 acres to yield a scaling fraction of 0.616 and a mitigation point value of 0.924.

M16 – Project is Oriented Towards Existing Transit, Bicycle, or Pedestrian Corridor. Setback Distance is Minimized (0.5 Points)

The project complies with this measure by virtue of its location in proximity to two of Sacramento Regional Transit's light rail stations and two bus lines. Setbacks are minimized to the extent possible. In this way, bicycles and pedestrians may enter directly from the sidewalks or connecting streets. This location serves as a major pedestrian and bicycle corridor, with Regional Transit's stations less than ¼-mile to the north and south ends of the project, and Sacramento City College beyond. Together, Regional Transit's bus routes 63 and 83 provide headways of less than 15 minutes, in addition to the 15-minute headways for light rail.

M18 – Project Provides High-Density Residential Development (12.0 Points Maximum)

The proximity of this project area to two Sacramento Regional Transit light rail stations and multiple bus routes, combined with the inclusion of several multi-family and affordable senior housing, apartment-style buildings and numerous, closely spaced row houses, provides for a high-density residential development. These factors, combined with direct access to existing sidewalks and bike lanes connecting the development to the nearby neighborhood facilities and amenities, will lead to reduced vehicle trips and emissions.

The residential portion of the development will consist of 470 dwellings and the buildings will cover an area of 43.0 acres, as can be seen in Appendix A. This results in a residential density of 11 dwelling units/acre (du/acre). Based on the table provided for this measure in the SMAQMD Land Use Guide, the location of the development within ¼-mile of the existing transit station, which has a headway frequency of 15 minutes, a du/acre in the 11-20 du/acre range, and a residential scaling factor of 0.709, the project is claiming 3.5 points for this measure.

Table 6 Residential Density Calculation	
Residential Parcels	Area (acres)
Parcel 1	19.5
Parcel 2	9.8
Parcel 3	0.2
Parcel 4	4.0
Parcel 5	7.8
Parcel 6	1.7
Residential Total	43.0
Dwellings	470
Dwelling units/acre	11

M19 – Multiple and Direct Street Routing (1.0 Point)

This measure requires that an internal connectivity factor of >0.80 be maintained and that multiple external connections average less than ¼-mile apart. The internal connectivity factor is defined as the ratio of the number of intersections to the sum of the number of intersections plus cul-de-sacs. As shown in Appendix A, the project is characterized by right-angle intersections and a roundabout, and it does not contain any cul-de-sac streets. These factors all improve traffic routing through the development; therefore, an internal connectivity factor of 1.0 will be achieved. Additionally, external connections to Sutterville Road, 10th Avenue, Donner Way, 5th Avenue, 24th Street, and Portola way occur at a distances in close proximity.

M21 – Affordable Housing Component (4.0 Points Maximum)

Out of the 470 residential units planned for this project, 80 of them will be designated for affordable senior housing and will be contained in one, multi-story, apartment-style complex adjacent to the commercial/retail area of the development. The complex’s proximity to the commercial and retail establishments will reduce the need for vehicles and transportation assistance for its residents; therefore, using the equation provided in the SMAQMD Land use Guide, the mitigation points associated with this measure are computed as follows:

$$\% \text{ Reduction} = 80 \text{ units below market rate housing} / 470 \text{ units total} * 0.04 = 0.68$$

The un-scaled trip reduction estimate is 0.68%. However, after the residential scaling factor of 0.709 is applied, the credit for this measure is reduced to 0.48 points.

M23 – Suburban Mixed-Use: Have at Least Three of the Following on Site and/or Offsite Within ¼ Mile: Residential Development, Retail Development, Park, Open Space, or Office (3.0 Points)

Credit for this measure is contingent on there being at least three distinct land-use types existing within the project or within ¼-mile of the project. The project itself contains all three of the required land uses, with the free-standing retail stores satisfying the commercial element, the single-family dwellings satisfying the residential component, and the neighborhood park satisfying the open space element. Directly west of the project, across the railroad tracks, lies Sacramento City College, adding an educational/institutional land use within ¼ mile. It is foreseeable that many of the Sacramento City College visitors (students, faculty, and employees) will travel to the project via non-vehicle modes.

M25 – Project Does Not Feature Fireplaces or Wood Burning Stoves (1.0 Point)

The residential portion of the project does not include the installation of wood burning fireplaces or other wood burning appliances. The project may include natural-gas fireplaces, which are not restricted by this measure.

M27 – Install Energy Star Labeled Roof Materials (1.0 Point)

Credit is being claimed for the commercial portion of the project. One-half of a point is granted for roofing materials that have achieved Energy Star Certification by the US Environmental Protection Agency/Department of Energy. An additional one-half point is granted if the Solar Reflectance Index (SRI) for the roofing material exceeds 29, which is synonymous with a high emissivity roof.

The roofing materials for the commercial portion of the project have not yet been selected, but will conform to the requirements of this measure.

Conclusion

The application of the above mitigation measures to the proposed project will exceed the 15% emission reduction/mitigation guideline established by the SMAQMD, as shown in Table 7. According to the credit assigned by the SMAQMD Land Use Guide, application of the above mitigation measures to the proposed project will reduce the project's operational NOx emissions by 17.3%. These reductions exceed the SMAQMD's 15% minimum to satisfy the "all feasible measures" requirement under CEQA for significant operational impacts.

**Table 7
Mitigation Measures**

Measure # ^a	Description	Development Type ^b	Unscaled Point Value	Scaling Fraction ^c	Credit Claimed for Measure
1	Bike Parking	C	0.625	0.291	0.182
4	Proximity to Bike Lanes	M	0.625	1.0	0.625
5	Pedestrian Network	M	1.0	1.0	1.000
6	Pedestrian Barriers Minimized	M	1.0	1.0	1.000
7	Bus Shelter for Existing Transit Service	M	1.0	1.0	1.000
9	Traffic Calming	M	1.0	1.0	1.000
12	Parking Reduction Below Code	C	6.44	0.291	1.874
13	Pedestrian Pathway Through Parking	C	0.5	0.291	0.146
14	Parking Facilities Away from Street Frontage	C	1.5	0.616	0.924
16	Orientation to Existing Transit, Bikeway, Or Pedestrian Corridor	M	0.5	1.0	0.500
18	High-Density Residential Development	R	5.0	0.709	3.545
19	Street Grid	M	1.0	1.0	1.000
21	Affordable Housing	R	0.68	0.709	0.482
23	Suburban Mixed-use	M	3.0	1.0	3.000
25	No Fireplace	R	1.0	0.709	0.709
27	Energy Star Roof	C	1.0	0.291	0.291
Total					17.3

^a As indicated on the SMAQMD list of recommended measures.

^b R = residential, C = commercial, M = mixed use developments.

^c From Table

APPENDIX A
PROJECT PLANS

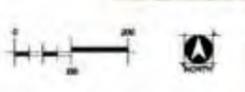
ILLUSTRATIVE PLAN
CURTIS PARK VILLAGE
 CITY OF SACRAMENTO, CALIFORNIA
 NOVEMBER 17, 2008



PROJECT SUMMARY
 TOTAL PROJECT ACREAGE: 71.7 +/-
 TOTAL DWELLING UNITS: 470 DU
COMMERCIAL AREA
 - TOTAL SQUARE FOOTAGE: 258,641
SINGLE FAMILY HOME AREA
 - TOTAL SINGLE FAMILY HOME SITES: 178 DU
MULTI-FAMILY AREA
 - TOTAL MULTI-FAMILY UNITS: 232 DU
SENIOR HOUSING AREA
 - TOTAL SENIOR HOUSING UNITS: 80 DU
PARK OPEN SPACE
 - NET ACRES: 6.82
 ALL ACREAGES ARE APPROXIMATE

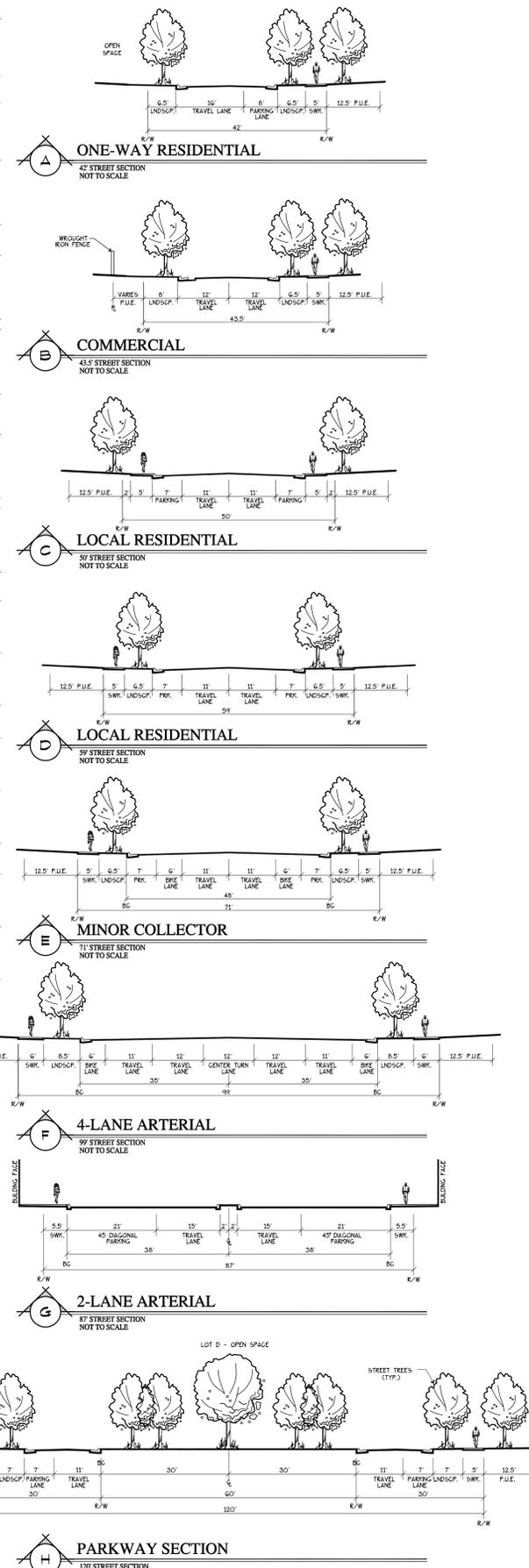
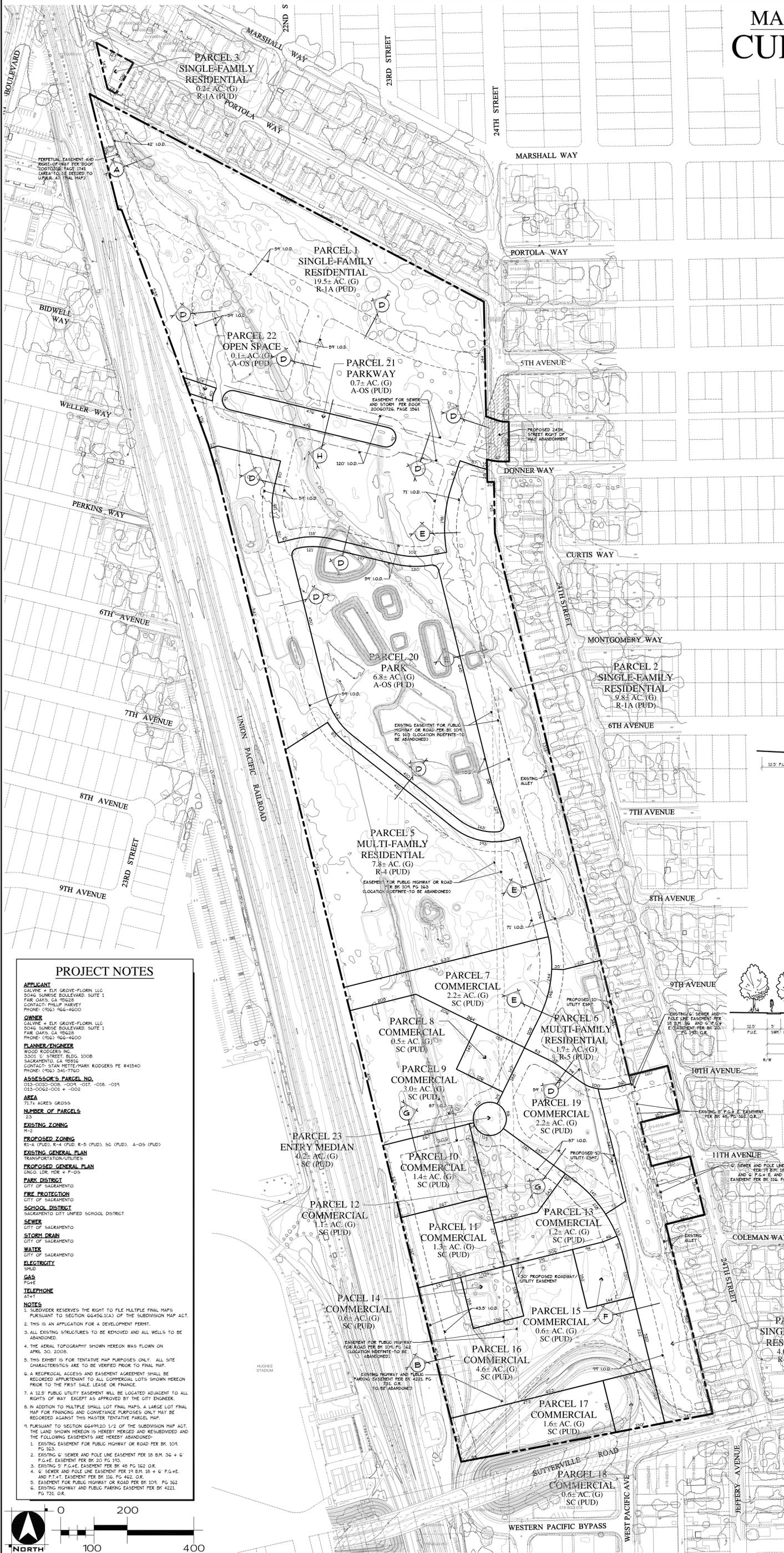


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 3301 C St, Bldg. 100-B Tel 916.341.7760
 Sacramento, CA 95816 Fax 916.341.7767



MASTER TENTATIVE PARCEL MAP CURTIS PARK VILLAGE

CITY OF SACRAMENTO, CALIFORNIA
JUNE 6, 2008
(REVISED OCTOBER 27, 2008)



PROJECT NOTES

APPLICANT: ELK GROVE-FLOREN, LLC
3046 SUNRISE BOULEVARD, SUITE 1
FAIR OAKS, CA 95628
CONTACT: PHELPS HARVEY
PHONE: (916) 966-4600

OWNER: ELK GROVE-FLOREN, LLC
3046 SUNRISE BOULEVARD, SUITE 1
FAIR OAKS, CA 95628
PHONE: (916) 966-4600

PLANNER/ENGINEER: WOOD RODGERS, INC.
3301 O STREET BLDG. 100B
SACRAMENTO, CA 95816
CONTACT: STAN HETTE/MARK RODGERS PE #14540
PHONE: (916) 341-7760

ASSESSOR'S PARCEL NO.: 013-0010-008, 009, 017, 018, 019, 013-0062-001 + -002

AREA: 73.3 ACRES GROSS

NUMBER OF PARCELS: 23

EXISTING ZONING: R-1A (PUD), R-4 (PUD), R-5 (PUD), SC (PUD), A-OS (PUD)

PROPOSED ZONING: R-1A (PUD), R-4 (PUD), R-5 (PUD), SC (PUD), A-OS (PUD)

EXISTING GENERAL PLAN: TRANSPORTATION/UTILITIES

PROPOSED GENERAL PLAN: UNCLD, LDR, HDR + P-OS

PARK DISTRICT: CITY OF SACRAMENTO

FIRE PROTECTION: CITY OF SACRAMENTO

SCHOOL DISTRICT: SACRAMENTO CITY UNIFIED SCHOOL DISTRICT

SEWER: CITY OF SACRAMENTO

STORM DRAIN: CITY OF SACRAMENTO

WATER: CITY OF SACRAMENTO

ELECTRICITY: SMUD

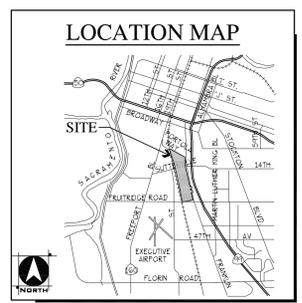
GAS: PG&E

TELEPHONE: AT&T

NOTES:
1. SUBMITTER RESERVES THE RIGHT TO FILE MULTIPLE FINAL MAPS PURSUANT TO SECTION 66456.3(a) OF THE SUBDIVISION MAP ACT.
2. THIS IS AN APPLICATION FOR A DEVELOPMENT PERMIT.
3. ALL EXISTING STRUCTURES TO BE REMOVED AND ALL WELLS TO BE ABANDONED.
4. THE AERIAL PHOTOGRAPHY SHOWN HEREON WAS FLOWN ON APRIL 30, 2008.
5. THIS EXHIBIT IS FOR TENTATIVE MAP PURPOSES ONLY. ALL SITE CHARACTERISTICS ARE TO BE VERIFIED PRIOR TO FINAL MAP.
6. A RECIPROCAL ACCESS AND EASEMENT AGREEMENT SHALL BE RECORDED APPURTENANT TO ALL COMMERCIAL LOTS SHOWN HEREON PRIOR TO THE FIRST SALE, LEASE OR FINANCE.
7. A 12.5' PUBLIC UTILITY EASEMENT WILL BE LOCATED ADJACENT TO ALL RIGHTS OF WAY EXCEPT AS APPROVED BY THE CITY ENGINEER.
8. IN ADDITION TO MULTIPLE SMALL LOT FINAL MAPS, A LARGE LOT FINAL MAP FOR FINANCING AND CONVEYANCE PURPOSES ONLY MAY BE RECORDED AGAINST THIS MASTER TENTATIVE PARCEL MAP.
9. PURSUANT TO SECTION 66412.0 1/2 OF THE SUBDIVISION MAP ACT, THE LAND SHOWN HEREON IS HEREBY MERGED AND RESUBDIVIDED AND THE FOLLOWING EASEMENTS ARE HEREBY ABANDONED:
1. EXISTING EASEMENT FOR PUBLIC HIGHWAY OR ROAD PER BK. 104, PG. 163.
2. EXISTING G, SEWER AND POLE LINE EASEMENT PER 18 BM, 36 + G, P.G. 4-E, EASEMENT PER BK 104, PG. 163.
3. EXISTING S, P.G. 4-E, EASEMENT PER BK 48, PG. 162 O.R.
4. G, SEWER AND POLE LINE EASEMENT PER 19 BM, 18 + G, P.G. 4-E, AND P.T. 1-E, EASEMENT PER BK 106, PG. 462 O.R.
5. EASEMENT FOR PUBLIC HIGHWAY OR ROAD PER BK 104, PG. 162.
6. EXISTING HIGHWAY AND PUBLIC PARKING EASEMENT PER BK 4221, PG. 731 O.R.

LAND USE SUMMARY

PARCEL	GENERAL PLAN	ZONE	GROSS ACRES	USE
1	LDR	R-1-A (PUD)	19.5	SINGLE-FAMILY RESIDENTIAL
2	LDR	R-1-A (PUD)	4.8	SINGLE-FAMILY RESIDENTIAL
3	LDR	R-1-A (PUD)	0.2	SINGLE-FAMILY RESIDENTIAL
4	LDR	R-1-A (PUD)	4.0	SINGLE-FAMILY RESIDENTIAL
5	HDR	R-4 (PUD)	7.8	MULTI-FAMILY RESIDENTIAL
6	HDR	R-5 (PUD)	1.7	MULTI-FAMILY RESIDENTIAL
7	SC	SC (PUD)	2.2	RETAIL COMMERCIAL
8	SC	SC (PUD)	0.5	RETAIL COMMERCIAL
9	SC	SC (PUD)	3.0	RETAIL COMMERCIAL
10	SC	SC (PUD)	1.4	RETAIL COMMERCIAL
11	SC	SC (PUD)	1.3	RETAIL COMMERCIAL
12	SC	SC (PUD)	1.1	RETAIL COMMERCIAL
13	SC	SC (PUD)	1.2	RETAIL COMMERCIAL
14	SC	SC (PUD)	1.6	RETAIL COMMERCIAL
15	SC	SC (PUD)	0.6	RETAIL COMMERCIAL
16	SC	SC (PUD)	4.6	RETAIL COMMERCIAL
17	SC	SC (PUD)	1.6	RETAIL COMMERCIAL
18	SC	SC (PUD)	0.6	RETAIL COMMERCIAL
19	SC	SC (PUD)	2.2	RETAIL COMMERCIAL
20	PROS	A-OS (PUD)	0.8	PARKWAY
21	PROS	A-OS (PUD)	0.7	PARKWAY
22	PROS	A-OS (PUD)	0.1	OPEN SPACE
23	SC	SC (PUD)	0.2	ENTRY MEDIUM
TOTAL			71.7	



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Oakland, CA. 94607 Fax 510.208.2401

PROJECT SUMMARY

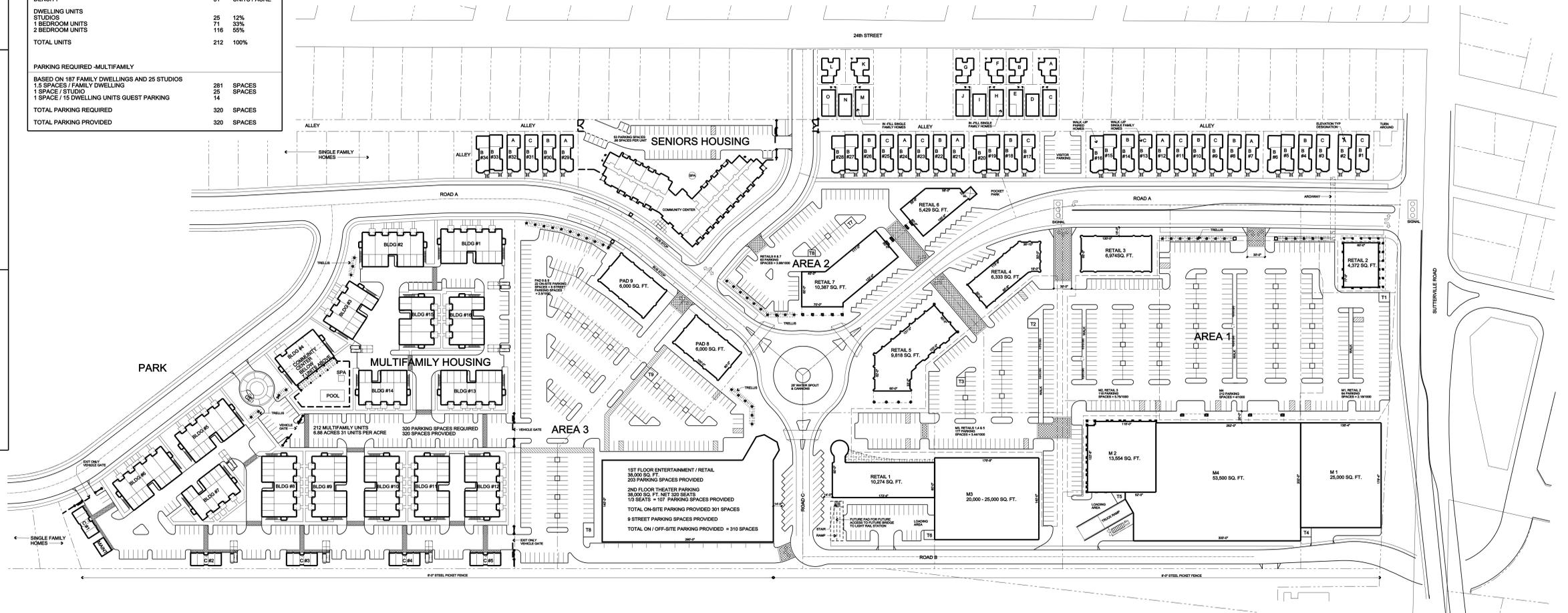
AREA 1 RETAIL SUMMARY		
M1	25,000	SQ. FT.
M2	13,554	SQ. FT.
M3	25,000	SQ. FT.
M4	53,500	SQ. FT.
RETAIL 1	10,274	SQ. FT.
RETAIL 2	4,372	SQ. FT.
RETAIL 3	6,974	SQ. FT.
RETAIL 4	6,333	SQ. FT.
RETAIL 5	9,818	SQ. FT.
TOTAL RETAIL SQ. FT.	154,825	SQ. FT.
AREA 1 PARKING RETAIL		
PARKING REQUIRED 4-1000 SQ. FT.	619	SPACES
PARKING PROVIDED		
PARKING STANDARD	597	SPACES
PARKING STREET	26	SPACES
PARKING TOTAL	623	TOTAL
PARKING OVERAGE	4	SPACES
PARKING PROVIDED 4.02 / 1000		
AREA 2 RETAIL SUMMARY		
RETAIL 6	5,429	SQ. FT.
RETAIL 7	10,387	SQ. FT.
TOTAL RETAIL SQ. FT.	15,816	SQ. FT.
AREA 2 PARKING RETAIL		
PARKING REQUIRED 3 1/2-1000 SQ. FT.	55	SPACES
PARKING PROVIDED		
PARKING STANDARD	63	SPACES
PARKING STREET	26	SPACES
PARKING TOTAL	89	TOTAL
PARKING OVERAGE	34	SPACES
PARKING PROVIDED 5.63 / 1000		
AREA 3 RETAIL SUMMARY		
PAD 8	6,000	SQ. FT.
PAD 9	6,000	SQ. FT.
TOTAL COMMERCIAL SQ. FT.	12,000	SQ. FT.
PARKING PROVIDED		
PARKING STANDARD	22	SPACES
PARKING STREET	8	SPACES
PARKING TOTAL	30	TOTAL
PARKING PROVIDED 2.5 / 1000		
1ST FLOOR ENTERTAINMENT / RETAIL	38,000	SQ. FT.
PARKING PROVIDED	203	SPACES
2ND FLOOR 8 PLEX X 40 SEAT THEATER - 320 SEATS	38,000	NET SQ. FT.
PARKING REQUIRED	107	SPACES
1 / 3 SEATS		
PARKING PROVIDED-TOTAL AREA 3		
PARKING STANDARD	301	SPACES
PARKING STREET	9	SPACES
PARKING TOTAL	310	TOTAL
TOTAL SQ. FT.	258,641	SQ. FT.
TOTAL RETAIL PARKING (INCLUDING STREET PARKING)	1,052	SPACES
TOTAL RETAIL PARKING PROVIDED SPACES 4 / 1000 SQ. FT.		
RETAIL AREAS BY TYPE		
M1	25,000	SQ. FT.
M2	13,554	SQ. FT.
M3	25,000	SQ. FT.
M4	53,500	SQ. FT.
SUBTOTAL M RETAIL SQ. FT.	117,054	SQ. FT.
RETAIL 1	10,274	SQ. FT.
RETAIL 2	4,372	SQ. FT.
RETAIL 3	6,974	SQ. FT.
RETAIL 4	6,333	SQ. FT.
RETAIL 5	9,818	SQ. FT.
RETAIL 6	5,429	SQ. FT.
RETAIL 7	10,387	SQ. FT.
PAD 8	6,000	SQ. FT.
PAD 9	6,000	SQ. FT.
THEATER	38,000	SQ. FT.
ENTERTAINMENT / RETAIL	38,000	SQ. FT.
TOTAL RETAIL / RESTAURANT SQ. FT.	141,587	SQ. FT.
TOTAL M & RETAIL / RESTAURANT SQ. FT.	258,641	SQ. FT.

PROJECT SUMMARY SENIORS HOUSING

SENIORS HOUSING - 80 TOTAL UNITS		
SITE AREA	1.32	ACRES
DENSITY	61	UNITS / ACRE
DWELLING UNITS		
1 BEDROOM UNITS	73	91%
2 BEDROOM UNITS	7	9%
TOTAL UNITS	80	100%
PARKING PROVIDED		
TOTAL PARKING PROVIDED	53	SPACES
PARKING SPACES PER UNIT	0.66	SPACES
UNIT COUNT		
1ST FLOOR	16	1-BEDROOM UNITS
2ND FLOOR	19	1-BEDROOM UNITS
3RD FLOOR	19	1-BEDROOM UNITS
4TH FLOOR	19	1-BEDROOM UNITS
TOTAL UNITS	73	1-BEDROOM UNITS = 91%
TOTAL UNITS	7	2-BEDROOM UNITS = 9%
TOTAL UNITS	80	TOTAL UNITS

PROJECT SUMMARY MULTIFAMILY HOUSING

MULTIFAMILY 212 TOTAL UNITS		
SITE AREA	6.88	ACRES
DENSITY	31	UNITS / ACRE
DWELLING UNITS		
STUDIOS	25	12%
1 BEDROOM UNITS	71	33%
2 BEDROOM UNITS	116	55%
TOTAL UNITS	212	100%
PARKING REQUIRED -MULTIFAMILY		
BASED ON 187 FAMILY DWELLINGS AND 25 STUDIOS		
1.5 SPACES / FAMILY DWELLING	281	SPACES
1 SPACE / STUDIO	25	SPACES
1 SPACE / 15 DWELLING UNITS GUEST PARKING	14	SPACES
TOTAL PARKING REQUIRED	320	SPACES
TOTAL PARKING PROVIDED	320	SPACES



PROJECT SUMMARY

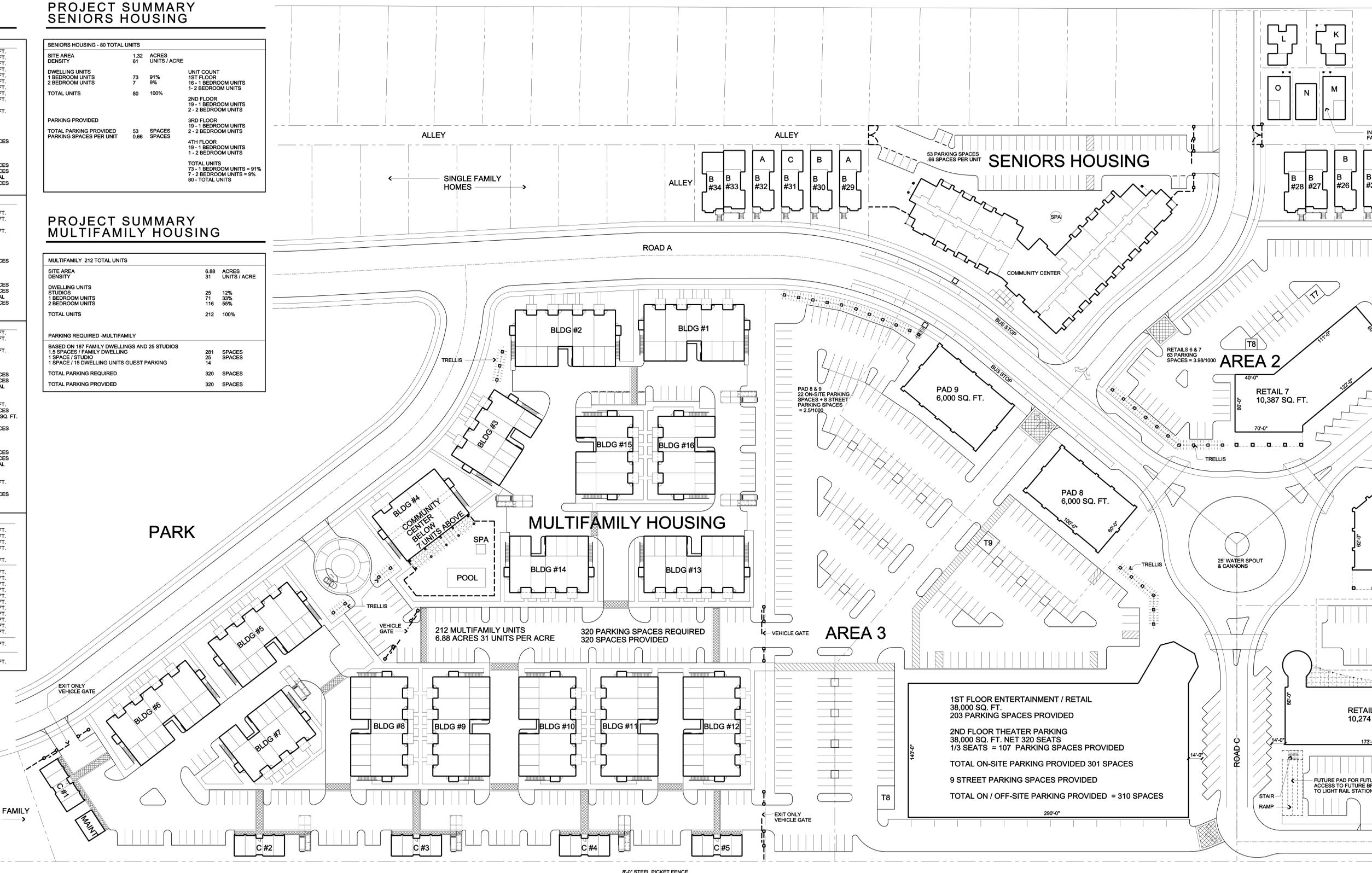
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PARKING STANDARD	597	SPACES
PARKING STREET	26	SPACES
PARKING TOTAL	623	TOTAL
PARKING OVERAGE	4	SPACES
PARKING PROVIDED 4.02 / 1000		
AREA 2 RETAIL SUMMARY		
RETAIL 6	5,429	SQ. FT.
RETAIL 7	10,387	SQ. FT.
TOTAL RETAIL SQ. FT.	15,816	SQ. FT.
AREA 2 PARKING RETAIL		
PARKING REQUIRED 3 1/2-1000 SQ. FT.	55	SPACES
PARKING PROVIDED		
PARKING STANDARD	63	SPACES
PARKING STREET	26	SPACES
PARKING TOTAL	89	TOTAL
PARKING OVERAGE	34	SPACES
PARKING PROVIDED 5.63 / 1000		
AREA 3 RETAIL SUMMARY		
PAD 8	6,000	SQ. FT.
PAD 9	6,000	SQ. FT.
TOTAL COMMERCIAL SQ. FT.	12,000	SQ. FT.
PARKING PROVIDED		
PARKING STANDARD	22	SPACES
PARKING STREET	8	SPACES
PARKING TOTAL	30	TOTAL
PARKING PROVIDED 2.5 / 1000		
1ST FLOOR ENTERTAINMENT / RETAIL	38,000	SQ. FT.
PARKING PROVIDED	203	SPACES
2ND FLOOR PLEX X 40 SEAT THEATER - 320 SEATS	38,000	NET SQ. FT.
PARKING PROVIDED	107	SPACES
PARKING PROVIDED-TOTAL AREA 3		
PARKING STANDARD	301	SPACES
PARKING STREET	9	SPACES
PARKING TOTAL	310	TOTAL
TOTAL SQ. FT.	258,641	SQ. FT.
TOTAL RETAIL PARKING (INCLUDING STREET PARKING)	1,052	SPACES
TOTAL RETAIL PARKING PROVIDED SPACES 4 / 1000 SQ. FT.		
RETAIL AREAS BY TYPE		
M1	25,000	SQ. FT.
M2	13,554	SQ. FT.
M3	25,000	SQ. FT.
M4	53,500	SQ. FT.
SUBTOTAL M RETAIL SQ. FT.	117,054	SQ. FT.
RETAIL 1	10,274	SQ. FT.
RETAIL 2	4,372	SQ. FT.
RETAIL 3	6,974	SQ. FT.
RETAIL 4	6,333	SQ. FT.
RETAIL 5	9,818	SQ. FT.
RETAIL 6	5,429	SQ. FT.
RETAIL 7	10,387	SQ. FT.
PAD 8	6,000	SQ. FT.
PAD 9	6,000	SQ. FT.
THEATER	38,000	SQ. FT.
ENTERTAINMENT / RETAIL	38,000	SQ. FT.
TOTAL RETAIL / RESTAURANT SQ. FT.	141,887	SQ. FT.
TOTAL M & RETAIL / RESTAURANT SQ. FT.	258,641	SQ. FT.

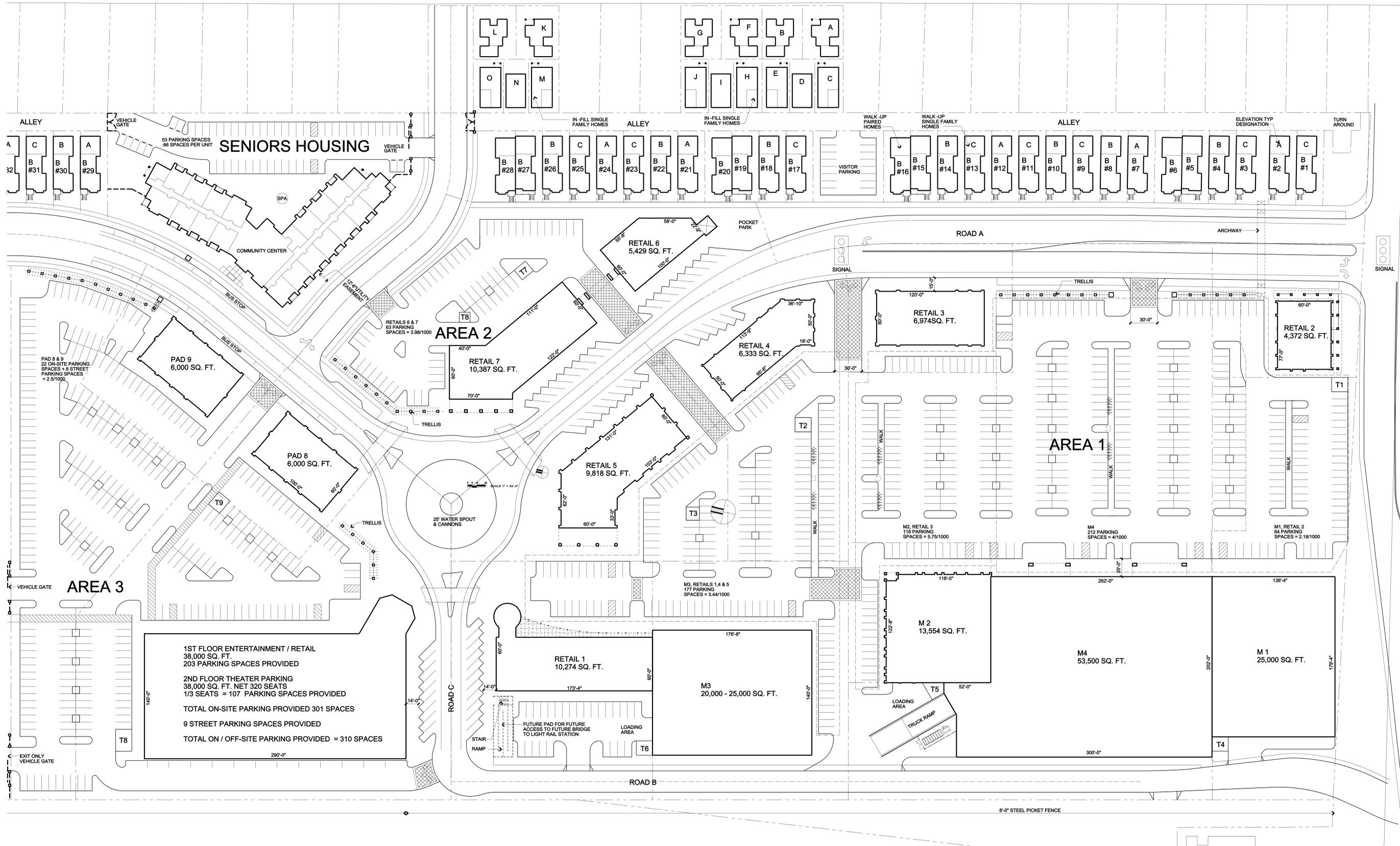
PROJECT SUMMARY SENIORS HOUSING

SENIORS HOUSING - 80 TOTAL UNITS		
SITE AREA	1.32	ACRES
DENSITY	61	UNITS / ACRE
DWELLING UNITS		
1 BEDROOM UNITS	73	91%
2 BEDROOM UNITS	7	9%
TOTAL UNITS	80	100%
PARKING PROVIDED		
TOTAL PARKING PROVIDED	53	SPACES
PARKING SPACES PER UNIT	0.66	
UNIT COUNT		
1ST FLOOR	16	1-1 BEDROOM UNITS
2ND FLOOR	19	1-1 BEDROOM UNITS
3RD FLOOR	19	1-1 BEDROOM UNITS
4TH FLOOR	16	1-1 BEDROOM UNITS
TOTAL UNITS	73	1-1 BEDROOM UNITS = 91%
	7	2-2 BEDROOM UNITS = 9%
	80	TOTAL UNITS

PROJECT SUMMARY MULTIFAMILY HOUSING

MULTIFAMILY 212 TOTAL UNITS		
SITE AREA	6.88	ACRES
DENSITY	31	UNITS / ACRE
DWELLING UNITS		
STUDIOS	25	12%
1 BEDROOM UNITS	71	33%
2 BEDROOM UNITS	116	55%
TOTAL UNITS	212	100%
PARKING REQUIRED - MULTIFAMILY		
BASED ON 187 FAMILY DWELLINGS AND 25 STUDIOS	281	SPACES
1.5 SPACES / FAMILY DWELLING	25	SPACES
1 SPACE / STUDIO	14	SPACES
1 SPACE / 15 DWELLING UNITS GUEST PARKING	14	SPACES
TOTAL PARKING REQUIRED	320	SPACES
TOTAL PARKING PROVIDED	320	SPACES





APPENDIX B

PROJECT DESIGN GUIDELINES

Curtis Park Village PUD



Design Guidelines

Curtis Park Village PUD Design Guidelines

November 2008

Prepared for



Petrovich Development
Company

5046 Sunrise Blvd., Ste. 1
Fair Oaks, CA 95628

Prepared by



Kuchman Architects PC

2203 13th Street
Sacramento California 95818

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1.0 INTRODUCTION

- 1.1 Location and Context
- 1.2 Goals and Objectives
- 1.3 Purpose and Intent
- 1.4 Procedures for Approval and Amendment

1.1 LOCATION, CONTEXT AND VISION

On the site of a former Union Pacific railyard, the 72-acre Curtis Park Village Planned Unit Development (PUD) is located to the south of Sacramento’s central city area, surrounded by neighborhoods established early in the 20th century. Within walking distance of Sacramento City College and Land Park, the property is currently in a toxic material remediation program under the State of California Department of Toxics and Substance Control. This brownfield development will constitute one of the largest infill sites in the metropolitan Sacramento area. The project is bordered on the west by Union Pacific and Light Rail, to the north and east by the existing Curtis Park neighborhood and to the south by Sutterville Road. Also nearby are the Land Park, Western Pacific Addition, and Hollywood Park neighborhoods.

Curtis Park Village has been laid out using current City of Sacramento “Pedestrian Friendly Street Standards” and with convenient linkages to nearby public transportation. There are two light rail stations at opposite ends of the site’s west side. It is envisioned that the bus routes currently running along nearby 24th Street will be re-routed to the main north-south road through Curtis Park Village. The design has been based on urban infill and sustainable design principles, as well as the strong community planning traditions of Sacramento’s historic and long-established neighborhoods.

The vision for Curtis Park Village is a vibrant mixed-use neighborhood developed at a pedestrian scale. Uses of the site will be: detached brownstones, cluster-housing, single-family detached homes, affordable seniors and market-rate multi-family housing, a community shopping and retail/commercial development area, and a neighborhood park. These elements will combine into a truly vibrant mixed-use neighborhood. Curtis Park Village incorporates values of new urbanism and smart growth, including walkable neighborhoods with tree-lined streets, pedestrian-scaled architecture, with effective connections to surrounding communities.

1.2 GOALS AND OBJECTIVES

Curtis Park Village PUD strives to achieve four primary goals. Each of these goals will be pursued focusing on specific design objectives:



Vibrant walkable neighborhoods



- ❖ Create a visually interesting, pedestrian friendly mixed-use neighborhood that promotes smart growth principles
- ❖ Emphasize the creation of spaces and places that encourage social interaction and foster community pride and support
- ❖ Maintain a high quality of life and create charm and character for the emerging neighborhood
- ❖ Utilize a consistent set of design elements throughout the PUD to unify the area visually and to enhance people's lives and property values
- ❖ Provide a vibrant and successful neighborhood retail center
- ❖ Provide an integrated development theme while still permitting flexibility in the location and development of businesses to respond to changing market conditions
- ❖ Implement design standards that encourage design innovation and flexibility
- ❖ Provide various housing choices including single-family and cluster, affordable seniors, and market-rate multi-family residences
- ❖ Maximize opportunities for efficient transit provided by the public transportation and roadway corridors serving the site of the PUD



- ❖ Encourage the use of public transportation through site design that emphasizes convenient transit access and use
- ❖ Develop appropriate linkages to surrounding neighborhoods including pedestrian, bicycle, vehicle and alternative transportation modes.

1.3 PURPOSE AND INTENT

These guidelines incorporate both mandates and recommendations. Where the word ‘shall’ is used, it is intended to be a mandate; otherwise, these are to be considered guidelines and recommendations, subject to interpretation and with room for minor variations.

The Curtis Park Village design guidelines have been adopted by the Sacramento City Council under authority of Chapter 17.180 of Title 17 of the Sacramento City Code (the Zoning Code) to implement the Curtis Park Village Planned Unit Development (PUD). These guidelines contain the development standards applicable to development within the Curtis Park Village PUD and contain specific details, elements, conditions, and restrictions that the City Council determined to be necessary and appropriate to carry out the vision of the Curtis Park Village PUD.

To achieve these goals, this comprehensive set of guidelines has been created. They are formulated in a flexible manner to provide for creative solutions to a variety of design situations.

1.4 PROCEDURES FOR APPROVAL AND AMENDMENT

All development in the Curtis Park Village PUD is subject to Planning Director Plan Review to ensure conformance with the PUD schematic plan and with these guidelines. The plan review application shall include information required on the standard City of Sacramento application.

Amendments to these guidelines and development project entitlements approved in the Curtis Park Village PUD are subject to review and approval by the City of Sacramento as required by the Zoning Code and subject to the provisions of the Curtis Park Village Development Agreement.

2.0 LAND USE DEVELOPMENT STANDARDS

- 2.1 Concept and Land Use
- 2.2 Commercial Zone
- 2.3 Single Family Residential Uses
- 2.4 Multi-Family Residential
- 2.5 Neighborhood Park

2.1 CONCEPT AND LAND USE

Curtis Park Village is comprised of three interconnected zones linked by a network of pedestrian friendly streets and open spaces.



- ❖ The single family neighborhood zone to the north complements the character and style of the surrounding Curtis Park community; like many historic Sacramento neighborhoods Curtis Park Village has at its heart a neighborhood park.

- ❖ Multi-family Housing

- ❖ The Brownstone row is a slightly more urbanized residential area, and acts as a transition between the single family and commercial zones.

- ❖ Affordable Seniors Housing transitions between single-family and commercial zones

- ❖ Cottage Homes

- ❖ Brownstone row

The commercial zone will serve surrounding residential neighborhoods, creating destinations, convenient shopping and entertainment within walking/biking distance.

2.2 *COMMERCIAL ZONE*

As an infill project, Curtis Park Village is bordered by already busy thoroughfares: Sutterville Road, the railroad and light rail lines, nearby Highway 99 and Freeport Blvd.

This location provides a unique opportunity for the commercial zone to be both economically successful and an ‘active buffer’ between the residential new and existing neighborhoods and these large transportation corridors.

The commercial zone will strike a balance between serving the more intimate immediate local community with walkable destinations, and welcoming the greater community and larger customer base required to nourish a viable environment for thriving businesses.

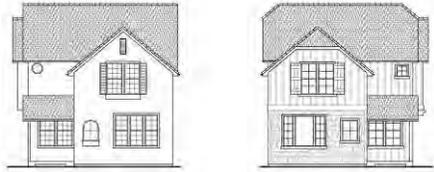
Nearby light rail service will add to the synergy by providing convenient public transportation.

More than 20,000 students at adjacent Sacramento City College widen the customer base considerably. They will have access to services and destinations while contributing to the viability of the commercial zone.

The character of the commercial zone is to be sensitively informed by the adjacent pedestrian- and bicycle-friendly, urban-forested neighborhoods.

2.3 SINGLE FAMILY RESIDENTIAL USES

For design guidelines for single family neighborhood at north end of Curtis Park Village, see Appendix A, Pattern Book: Curtis Park Village. Supplementary information for brownstone neighborhood and for cottage infill sites appears below.



Cottage elevation



Cottage siting

- ❖ Cottage infill
 - ❖ Cottage infill sites occur along the west side of 24th Street and near the project's commercial zone
 - ❖ These sites may be developed at a density of 20 units per acre
 - ❖ Integrate cottages into existing neighborhood fabric by means of architectural character, continuity, mass, scale, details and rhythm
- ❖ Brownstone neighborhood
 - ❖ The vertical stature of the homes in this neighborhood complements the architecture of the commercial area across the street, the main access to Curtis Park Village. The Brownstones provide transition between the existing and new residential neighborhood and the commercial areas of Curtis Park Village



Brownstone streetscape

2.4 MULTI-FAMILY RESIDENTIAL

Multi-family residential uses shall consist of affordable seniors housing and market rate multi-family housing. These shall comply with City of Sacramento Multi-family Residential Design Principles except where noted differently below, and shall respect the special character of Curtis Park Village as set forth in this document.



Photos courtesy of

www.pedbikeimages.org /DanBurden



Affordable Seniors Housing

- ❖ Heights should be limited to four stories
- ❖ These elements should be integrated within the community
- ❖ Affordable seniors housing
 - ❖ Acts as transitional land use bridging existing Curtis Park single family housing and commercial areas within Curtis Park Village
 - ❖ Acts as a low-impact buffer adjacent existing Curtis Park single family housing
 - ❖ Fulfills affordable housing element for Curtis Park Village
 - ❖ Integrates seniors housing with the general community
 - ❖ Provide a minimum parking ratio of 0.50 parking spaces per dwelling unit
 - ❖ Provide the following setbacks:

From back edge of public sidewalk	Approximately 12'6"
From property line of nearest existing Curtis Park single family residential housing	Approximately 50 feet
From property line of nearest new Curtis Park single family residential housing	Approximately 50 feet

- ❖ Market-rate Multi-family housing
 - ❖ Provides additional pedestrian links through Curtis Park Village



Multifamily Residential

- ❖ Acts as a buffer between Curtis Park Village single family residential and Curtis Park Village commercial areas
- ❖ Provides an alternative type of housing for the neighborhood
- ❖ Neighborhood Park will provide shared recreational, open space, and tot lot facilities
- ❖ Provide a parking ratio of 1.50 parking spaces per dwelling unit. This ratio includes visitor parking

Provide a variety in exterior architectural forms through the use of various building materials and colors. Shared common open space may be substituted for private patios and balconies. Provide the following setbacks:

From back edge of public sidewalk	Approximately 14 feet
From property line of nearest existing Curtis Park single family residential housing	Approximately 50 feet
From property line of nearest commercial use	Minimum 20 feet
Between living areas in any two multifamily buildings	Minimum 25 feet
Between utility rooms in any two multifamily buildings	Minimum 17 feet
Between carriage houses and property line of Union Pacific Railroad property	Minimum 5 feet (sound attenuation required)
Between 3-story multifamily residential buildings and property line of nearest new Curtis Park single family residential housing	Approximately 50 feet
Between carriage houses and property line of nearest new Curtis Park single family residential housing	Approximately 15 feet

2.5 NEIGHBORHOOD PARK

An approximately 6.1 acre neighborhood park is located near the center of the single-family residential area. A park preserves open space for outdoor recreation, provides for public health and safety, and is a visual amenity. At Curtis Park Village the park will include a children's play area, bantam soccer field, basketball and volleyball courts, open park area, picnic areas, an amphitheater, pedestrian and bicycle paths, and other amenities. Park design shall be in compliance with City of Sacramento Department of Parks and Recreation design guidelines.



Curtis Park Village neighborhood park

3.0 LAND USE DESIGN GUIDELINES: COMMERCIAL AREAS

- 3.1 Site Design and Building Orientation
- 3.2 Building Design Principles
- 3.3 Building Form
- 3.4 Building Details
- 3.5 Building Utilities
- 3.6 Sustainability
- 3.7 Security
- 3.8 Public Utilities

3.1 *SITE DESIGN AND BUILDING ORIENTATION*

Site planning and design are vital in creating usable, successful outdoor spaces. The arrangement and siting of buildings, the scale and location of spaces and landscaping, and the way these elements relate to each other, will determine the vitality of the neighborhood.



Activate the street

- ❖ Develop individual site plans to positively relate with neighboring properties
- ❖ Design for lively pedestrian use
- ❖ Provide a continuous network of safe, convenient, comfortable and interesting walkways and sidewalks
- ❖ Provide pedestrian paths to connect Curtis Park Village to the surrounding neighborhoods along transportation connections
- ❖ Carefully plan outdoor spaces with defined edges, lighting and enhanced paving
- ❖ Design spaces at a pedestrian scale
- ❖ Enrich spaces with seating and landscaping, fountains, public art, and trellises
- ❖ Design plazas, courtyards, pocket parks, and outdoor cafes to encourage pedestrian activity
- ❖ Create destinations that attract people
- ❖ Create focal points as placemaking landmarks
- ❖ Orientation of buildings at the edge of pedestrian walks is encouraged



Create interesting spaces



Design at a pedestrian scale

3.2 BUILDING DESIGN PRINCIPLES

Key concepts direct the feel of a neighborhood, and determine the community identity, economic vitality and levels of activity and use.



Doors and windows break up mass, add interest



Details add visual interest and break up mass

- ❖ Architectural Character: Consider building type, materials, form and design, the relationship to other buildings in the neighborhood, and the overall effect on the viewer. No particular architectural theme or style is being recommended; rather a variety of styles with consideration for the surrounding area
- ❖ Continuity: a connection or harmony among buildings in form, scale and proportions
- ❖ Mass: The volume defined by a building relative to its surroundings and to its solidity and weight. Details, such as window size and placement, or open spaces in the forms, can change the visual perception of mass and make a building more interesting
- ❖ Scale: the proportion of one element to another. The overall scale is determined by the size and proportions of the elements, their relationship to each other and to the building itself, as well as the spaces and buildings in view.
- ❖ Rhythm: the relationship of building components, the relationship of buildings to each other, and the spaces in between, form a visual rhythm. This contributes to the excitement, comfort and charm of the area.

- ❖ 360 degree architecture: buildings, especially those on corner lots or with high visibility, should be aesthetically pleasing from all angles. Details on each side of the building complement and enhance the primary street view



Details at back of building

3.3 BUILDING FORMS

Building forms and facades influence cohesiveness, comfort and aesthetic pride and at the same time can encourage shopping, increase a sense of security and generate pedestrian activity.



Articulate facades



Provide visual interest and variety

- ❖ Building Articulation
 - ❖ Articulate building facades based on multiples of 40-feet maximum
- ❖ Building Facades
 - ❖ Clearly organize facades to have a base (bottom), street wall (middle), and cornice (top)
 - ❖ Design proportions of façade elements to be in harmony within the context of the street
 - ❖ Design facades to be pedestrian-friendly
 - ❖ Design roof lines to be varied in height
 - ❖ Allow for architectural treatments and heights of up to 52 feet
- ❖ Building Base
 - ❖ Visually anchor the building through good base design using wainscoting or other architectural elements
 - ❖ Provide visual interest and variety
 - ❖ Design in a scale complementary to human scale
 - ❖ The use of durable materials such as cast concrete, masonry and stone is encouraged
- ❖ Building Street Wall
 - ❖ Reflect the patterns of the neighborhood
 - ❖ Structure meaningful urban massing using good street wall design
 - ❖ Use color and texture to provide visual interest



Details, such as awnings, add visual interest



Corner entrance with awning

- ❖ Provide visual interest using windows, balconies, arcades, colonnades, awnings, reveals, step backs, moldings, and other changes in the vertical plane
- ❖ Provide clear-glazed fenestration on approximately 50% of each building façade that abuts a pedestrian way
- ❖ **Building Cornice**
 - ❖ Design parapets and roof elements with decorative treatments that clearly define the top of the building
 - ❖ Design roof lines to be varied in height
 - ❖ Consider the special articulation in the cornice above entries and building corners
 - ❖ The use of projecting cornices, lentils, caps, and other elements are encouraged
 - ❖ Finish the interior sides of parapets that are visible similar to the front sides
- ❖ **Building Entrances**
 - ❖ Consider micro-climatic conditions such as solar orientation, wind and shadows when siting buildings and locating building entrances
 - ❖ Orient building main entrances to streets or public spaces wherever possible or practical
 - ❖ Multiple entrances or corner entrances are encouraged at street corners to activate both street frontages
 - ❖ Locate sidewalk entrances to accommodate ease of pedestrian movement
 - ❖ Articulate building entrances with canopies, awnings, special lighting and other features



Tower elements at corners



Consider view corridors

- ❖ Locate service entrances away from pedestrian entrances
- ❖ Building Corners
 - ❖ Design buildings to be in compliance with City of Sacramento required visibility triangles
 - ❖ Use building corners to emphasize street intersections
 - ❖ Consider increased pedestrian activity in the design of building corners
- ❖ Tower Elements
 - ❖ The inclusion of tower elements is encouraged at corners and at view corridor terminuses
 - ❖ Integrate tower elements with the lower elements of the building
- ❖ Roofs
 - ❖ Consider the aesthetics of rooftops as viewed from other buildings.
 - ❖ Screen rooftop mechanical equipment from public view
- ❖ Other Considerations
 - ❖ Consider view corridors when siting buildings
 - ❖ The use of corporate “chain” architecture is strongly discouraged. Design buildings for corporate tenants to express the uniqueness of location and structure

3.4 BUILDING DETAILS

Building details enhance buildings by promoting visual vitality through the use of interesting forms, textures, patterns, colors and shadows.



Maintain consistency of style



Awnings articulate doors and windows

- ❖ General Guidelines
 - ❖ Apply finished building materials to all sides of a building
 - ❖ Maintain a consistency of style using building materials, textures, colors, roof treatment and landscaping
 - ❖ Maintain compatibility with exterior building materials in screening utility equipment
 - ❖ Blank walls on visible facades are strongly discouraged
- ❖ Building entrances
 - ❖ Use distinctive architectural elements and materials
- ❖ Doors and windows
 - ❖ Organize to present a unified appearance except where variations are an integral and necessary part of the exterior design
- ❖ Transparent glazing
 - ❖ Use transparent glazing wherever practical
 - ❖ Dark tinted glazing is acceptable only when required to screen views into a building
 - ❖ The use of simulated, reflective, mirrored or dark tinted glazing is strongly discouraged
- ❖ Awnings
 - ❖ Awnings may be of translucent glazing, metal or canvas



Articulate portions of building facade



Trellis adds interest,



Use of concrete, masonry

- ❖ The use of awnings to articulate the tops of doors and windows is encouraged
- ❖ Use lighting to highlight awnings
- ❖ Wall transitions
 - ❖ The use of columns and pilasters to articulate wall transitions is strongly encouraged
- ❖ Cornice details
 - ❖ Use offsets and jogs in cornices and parapets
 - ❖ Make parapets of sufficient height to screen roof-mounted equipment from public view
- ❖ Exterior Decorative Elements
 - ❖ The use of wall pattern treatments, changes in materials, building pop-outs and recessed areas are encouraged to create shadow patterns and depth on wall surfaces
 - ❖ Articulate different portions of the building façade to create images of buildings that have been developed over time
 - ❖ Display cases may be considered to add interest to large blank wall surfaces
- ❖ Exterior Building Materials
 - ❖ Use materials, roofing, color and lighting that is compatible with other buildings within Curtis Park Village
 - ❖ Use materials that hold up well under public use
 - ❖ The use of masonry, concrete and cement plaster is encouraged
 - ❖ Do not change materials at an outside building corner

- ❖ Building Color
 - ❖ Use colors that are harmonious with other colors within Curtis Park Village
 - ❖ The use of color is encouraged to create interest, focus, unity and compatibility for building surfaces and details
 - ❖ Do not change colors at an outside building corner



Color and detail

3.5 BUILDING UTILITIES

Utility service areas are building components or features that are necessary for a building's function. Incorporate these elements integrally into the building and site design



Screen trash enclosures



Screen with similar materials and colors

- ❖ Loading and delivery areas
 - ❖ Locate in less conspicuous places
 - ❖ Design delivery areas so as not to impede traffic flow
 - ❖ Clearly distinguish delivery areas from parking and driveway areas
- ❖ Recycling and trash enclosures
 - ❖ Design using similar materials and colors as the surrounding buildings
 - ❖ Screen with a surrounding wall at least 6-feet high and with landscaping
 - ❖ The use of vines to cover screen walls is encouraged
 - ❖ Separate from adjacent parking spaces by planters with a minimum width of 3-feet
 - ❖ Provide a gated pedestrian entrance to the enclosure
- ❖ Electrical service panels
 - ❖ Place within enclosures that are architecturally integrated into the building design wherever possible
 - ❖ Provide utility company access as required.
- ❖ Roof access
 - ❖ Provide roof access from the interior of the building
 - ❖ Exterior roof access ladders are strongly discouraged



Paint to integrate downspouts & gutters

- ❖ Rooftop equipment
 - ❖ All roof-top equipment shall be screened from public view if visible from the street and/or positioned to be invisible to the passerby
 - ❖ Mechanical equipment should be located below the highest vertical element of the building
- ❖ Gutters and downspouts
 - ❖ Paint to integrate with the building design
- ❖ Sheet metal vents, pipe stacks and flashing
 - ❖ Paint to match adjacent materials

3.6 SUSTAINABILITY

As a mixed-use infill project making use of a formerly brownfield site near the heart of the city, Curtis Park Village is by its nature improving the environmental footprint of the community. The impact can be further mitigated through architectural, construction and landscaping techniques.



Taking advantage of shade



Provide pedestrian and bicycle linkages
(Photo courtesy of www.pedbikeimages.org/DanBurden)

- ❖ Preparation of a 'Green Development Plan' is strongly encouraged
- ❖ Siting and neighborhood fabric
 - ❖ Buildings should be sited to take advantage of 'solar passage' and to utilize natural breezes to assist heating and cooling systems when possible
 - ❖ Provide pedestrian and bicycle linkages
 - ❖ Provide preferred parking for vanpools, carpools, car sharing services and bicycles
- ❖ Site improvements
 - ❖ A storm water management plan shall be developed for any new commercial structure
 - ❖ Use landscaping to shade and cool buildings and spaces and reduce the 'urban heat island' effect (the temperature increase due to development)
- ❖ Water conservation
 - ❖ Use water conserving appliances and fixtures
 - ❖ Provide an efficient landscape irrigation system
- ❖ Energy efficiency
 - ❖ All buildings shall meet or exceed Title 24 requirements
 - ❖ Use Energy Star Appliances
 - ❖ Provide energy-efficient lighting
 - ❖ Utilize daylighting strategies



EnergyStar appliances

<http://www.energystar.gov>



- ❖ The use of photovoltaic (PV) systems or PV-ready structures is encouraged
- ❖ Utilize materials beneficial to the environment wherever possible including:
 - ❖ The use of regional building materials and products is encouraged
 - ❖ Prepare a construction waste management plan to reduce impact on landfills, emphasize recycling and reuse of materials
 - ❖ Use of recycled materials is encouraged
 - ❖ Design roofing, paving and plantings to reduce Heat Island Effect
- ❖ Healthy living environment
 - ❖ Use no / low VOC materials
 - ❖ Use energy efficient HVAC systems and water heaters

3.7 SECURITY

A lively pedestrian streetscape is an important component in security and is enhanced by a feeling of safety and comfort. Appropriately arranged spaces, entries and buildings, and proper lighting can create safer, ‘defensible’ spaces. Safeguard property and promote public welfare and safety by providing minimum security standards to be used in the design, construction, alteration, and maintenance of buildings and facilities and the quality of materials used therein.



Establish visual corridors

Photos courtesy of www.pedbikeimages.org/DanBurden



Well lighted entrances

- ❖ Establish visual corridors by limiting dense landscaping near structures and at the periphery of parking areas
- ❖ Each building shall display its well lit street number in a prominent location on the street side of the building
- ❖ Building entrances should be enlivened and well-lighted
- ❖ Possible crime risk areas, such as automatic teller machines, should be located in highly visible and well-lighted areas
- ❖ Provide wide-angle door viewer at all exterior doors used to the side or rear
- ❖ Openable windows shall be constructed so that when they are locked, they cannot be lifted from the frame
- ❖ Plants should be selected, trimmed, spaced and irrigated in a way that hampers the spread of fire and minimizes available fuel
- ❖ Visibility of parking area entrances should be maximized from adjacent uses and public streets
- ❖ Use of traffic calming strategies is encouraged

3.8 PUBLIC UTILITIES

Mechanical equipment and utility areas should be designed and placed to ensure that they do not impair pedestrian flow nor the aesthetic quality of the area. Locate equipment so that it does not cause nuisance or discomfort from noise, fumes, odors, etc.

- ❖ All new utility lines (telephone, electrical, cable, etc) shall be underground
- ❖ Equipment shall not be located adjacent to residential areas or within any required landscaped setback area
- ❖ Mechanical and communications equipment, utility meters, and storage tanks should be placed within the building whenever possible
- ❖ Utility components required to be above ground (transformers, meters, cable boxes, SMUD equipment and the like) shall be located away from public view, views from neighboring properties, and/or screened by landscaping or decorative wall
- ❖ The screening of utility equipment shall be architecturally compatible with the building it serves, using the same materials, color and style
- ❖ Ground equipment
 - ❖ If the utility area is separate from the building it serves, it should be consistent with the theme of the Curtis Park Village streetscape
- ❖ The design of visual barriers shall be subject to review and approval by the city police department prior to construction

4.0 CIRCULATION AND PARKING

- 4.1 Streetscape and Circulation
- 4.2 Traffic Circle
- 4.3 Bicycle and Pedestrian Circulation
- 4.4 Public Transportation
- 4.5 Parking Area Design

4.1 STREETScape AND CIRCULATION

The character and feel of a community are in large part determined by its streetscape. Curtis Park Village streetscape will respect and build on the distinctive identity of the Curtis Park neighborhood while allowing for innovation and enhancement.

The streetscape should provide visual continuity, be welcoming and engaging. Streetscape elements should combine to provide an environment that is walkable, sustainable, safe and attractive.

Curtis Park Village will have an intimacy of scale and a sense of community that will invite pedestrian use and interaction. This will contribute to the richness of the Curtis Park Village experience for residents and visitors.



Photos courtesy of www.pedbikeimages.org /DanBurden

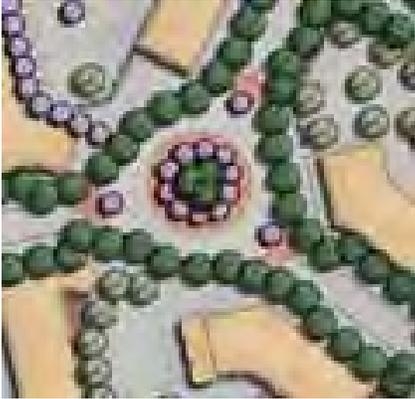


- ❖ Provide visual continuity of streetscape elements, such as parking, planters, landscaping, sidewalks, building scale and setbacks along each street
- ❖ Make width of sidewalks consistent and abundantly wide as required by City of Sacramento standards
- ❖ Provide tree canopy that is consistent and generous
- ❖ Ensure that public areas are well lighted without causing glare or light spill
- ❖ Utilize traffic calming curb extensions, such as bulb-outs and neck-downs, and wide, well marked crosswalks, to promote safety of pedestrian-vehicle interface and as required by City of Sacramento street standards

4.2 TRAFFIC CIRCLE

The Traffic Circle will be the major hub for pedestrian, bicycle and vehicle circulation. Traffic circles allow for unsignaled intersections and keep traffic moving to prevent heavy traffic buildup. The Traffic Circle will be a landmark that will enrich the pedestrian experience and calm traffic.

All other intersections in Curtis Park Village shall be in compliance with City of Sacramento improvement standards.



Traffic circle

- ❖ Traffic Circle:
 - ❖ Shall provide visual interest, improved traffic flow, and a unique design feature.
 - ❖ Provide sculpture, a fountain, and/or enhanced landscaping at the center of the traffic circle
 - ❖ Provide enhanced paving within the roadway at the perimeter of the traffic circle
 - ❖ Provide for bicycle traffic at the outside perimeter of the surrounding roadway
 - ❖ Surrounding the traffic circle, across the roadway, provide open space areas that complement adjacent buildings through the use of landscaping, seating and pedestrian walkways
 - ❖ Design of the roundabout and the surrounding area shall provide for the safety of pedestrians and vehicle movement.
 - ❖ Include adequate street lighting at pedestrian crosswalks at the roundabout

4.3 BICYCLE AND PEDESTRIAN CIRCULATION

The success of Curtis Park Village as a community will be strongly linked to its success as a pedestrian- and bicycle-friendly community. Creative design solutions which further enhance the walkability and connectivity of the area are strongly encouraged.



Clearly mark crosswalks



Photo courtesy of www.pedbikeimages.org /DanBurden

- ❖ Give pedestrians and bicyclists the same importance as motor vehicles, and buffer them from the street where possible, according to City of Sacramento standards
- ❖ All public streets shall have sidewalks on both sides of the street
- ❖ Sidewalks and bicycle paths should be perceived as safe, clean and well-lit
- ❖ Pedestrian-transit linkages are intended to facilitate direct access to light rail stations and bus stops
- ❖ Section 5.3 includes guidelines on hardscape materials and treatments
- ❖ Pedestrian paths and walkways
 - ❖ Provide convenient walkway access between uses and neighborhoods
 - ❖ Clearly define building entry zones through the use or combined use of elements such as accent paving, planting, potted plants, and bollards
 - ❖ Selectively use enhanced paving, striping or other distinguishing design features to emphasize special areas
 - ❖ Sidewalks may be used for outdoor dining, signage, or merchandise display, except where necessary to provide public access



Adequate, safe bicycle parking



Bicycle storage or parking

- ❖ Separate sidewalks from the street using bollards, parked cars and/or street trees in order to provide a sense of protection for the pedestrian per City of Sacramento standards
- ❖
- ❖ Sidewalks may provide pedestrian amenities such as seating, shelter, information, art, and room for gathering
- ❖ Clearly mark crosswalks
- ❖ Bicycle paths
 - ❖ Provide adequate and secure bicycle parking
 - ❖ Bicycle storage is encouraged at parking lots and places of employment
 - ❖ Clearly mark bicycle bicycle storage
- ❖ Signed bicycle lanes are located along Road A and Road C within the commercial zone per City of Sacramento standards

4.4 PUBLIC TRANSPORTATION

Two Sacramento Regional Transit (RT) services will function in conjunction to provide convenient public transportation options:



Current bus service



Wayne Hultgren Station,
21st and Freepport

- ❖ Bus: RT proposes to reroute the current bus lines from existing 24th Street to within Curtis Park Village along the main north/south roadway. This will serve two primary purposes: relieve 24th Street of bus traffic, and provide better transportation options for residents and shoppers.
- ❖ Bus stops shall incorporate seating, shelter and adequate lighting
- ❖ Bus stops should provide protection from rain, wind and hot direct sunlight. Shelters should not include advertising in an area or manner that blocks views into, out of and through the shelter
- ❖ At least one bus stop should be located at an intensive pedestrian node
- ❖ Bus shelters shall contain trash receptacles, route maps and schedule,s and shall conform to the requirements of Sacramento Regional Transit
- ❖ Light Rail: The RT South (light rail) Line runs near Curtis Park Village, providing service between Meadowview and Downtown. Stops are located near the northern portion of the site at Freepport Boulevard and 4th Avenue (Wayne Hultgren Station), and at Sacramento City College. The South Line operates at 15-minute intervals and provides weekend service.



City College Station

- ❖ Curtis Park Village and the two light rail stations are separated by a wall/fence that protects pedestrians and bicyclists from crossing the train tracks in unprotected locations. Residents will be able to walk, bicycle or take a bus to the Sacramento City College Station from within Curtis Park Village.



4.5 *PARKING AREA DESIGN*

Well designed parking areas can be comfortable to use, aesthetically pleasing and provide a sense of security to the user. Make parking areas easy for vehicles and pedestrians to access and navigate. Aesthetically blend parking areas into site plans.



Parking area screening



Pedestrian way through parking area

- ❖ Parking areas should be functional and efficient
- ❖ Design parking areas as well-defined spaces with landscaping, decorative lighting, and pedestrian walkways
- ❖ Generously landscape parking areas with shade trees
- ❖ Provide strong pedestrian linkage to parking areas.
- ❖ Provide convenient and attractive areas for bicycle parking
- ❖ Limit or obscure public perception of delivery areas
- ❖ Screen automobile headlight illumination from neighboring residential areas
- ❖ Provide one or more of the following to buffer each parking area from a public sidewalk or street:
 - ❖ A planter that is a minimum of 10' in depth and planted with a combination of trees and shrubs
 - ❖ A fence with a maximum height of 4'
 - ❖ Trellis structures with vines
 - ❖ A site wall, maximum height of 4', with decorative finish and details.
- ❖ Through good design, encourage users to return or corral shopping carts

❖ Required Parking:

Use	Minimum Parking Required
Retail Commercial	3.5 spaces / 1000 sq. ft.
Hotel	1 space / 3 rooms
Fitness Facility	1 space / 200 sq. ft.
Dinner Theater	5 spaces / 1000 sq. ft.
Restaurant	1..5 spaces / 3 seats
Single Family Housing	1 off street space / dwelling unit



Photo courtesy of www.pedbikeimages.org/DanBurden

5.0 LANDSCAPE AND STREETSCAPE

- 5.1 Monument Features
- 5.2 Landscape Elements
- 5.3 Hardscape Materials and Treatments
- 5.4 Landscaping
- 5.5 Fencing and Walls
- 5.6 Public Art

5.1 MONUMENT FEATURES

Themed monument features, strategically placed, provide unity throughout an entire neighborhood. Curtis Park Village shall have a hierarchy of monument features that announce a sense of arrival and create a sense of place upon entry. Scale of monumentation should be attuned with the size and use of the space. Each monument will highlight and strengthen the project's design theme with consistent materials and landscape palette. Use landscape plantings and trees to complement project monumentation.



❖ Major entry monument

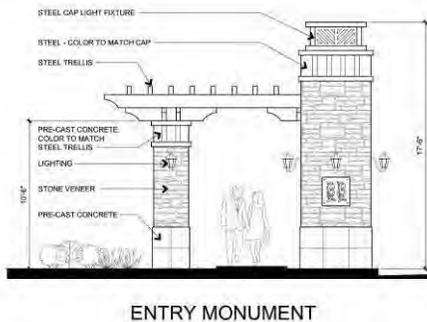
- ❖ Provide signature monumentation for the development that exemplifies an overriding design theme
- ❖ Provide a major entry monument at the major entry to the project from Sutterville Road

❖ Minor entry monuments

- ❖ Provide minor entry monuments as a secondary level of signature for the development and in keeping with the design theme
- ❖ Make minor entry monuments smaller than the major entry monument.
- ❖ Locate minor entry monuments at the transition between the single family neighborhood zone and the mixed-use neighborhood zone

❖ Traffic circle monument

- ❖ Create a traffic circle monument to provide an internal level of signature monumentation for Curtis Park Village
- ❖ Use vertical elements such as art, raised planters, flag poles, or banners at the center of the traffic circle to add visual interest
- ❖ Consider safety issues, such as visibility, in design of monuments



5.2 LANDSCAPE ELEMENTS

The goal for the use of landscape elements is to create enjoyable outdoor spaces and to provide comfortable amenities for relaxation and leisure. Street furniture is encouraged in outdoor areas; harmonize style, design and materials with surroundings. Street furniture should predominantly be placed on the street side of sidewalks, facing the building.



Benches



Decorative bollards provide security



Bike racks

- ❖ Seating:
 - ❖ Provide a variety of seating alternatives such as benches and seat walls in outdoor spaces and walkways
 - ❖ Design spaces at a pedestrian scale
 - ❖ Enrich spaces with seating and landscaping, fountains, public art, and trellises
 - ❖ Provide skate stops on unbroken surfaces
- ❖ Bollards
 - ❖ Use to define edges of pedestrian/vehicle interfaces
 - ❖ Use to protect utilities and vulnerable elements from vehicle traffic
 - ❖ Use of decorative bollards is encouraged
- ❖ Trash & recycling receptacles
 - ❖ Place near benches, at regular intervals throughout area
- ❖ Bicycle racks:
 - ❖ Provide in adequate numbers per City of Sacramento standards
 - ❖ Place in easily accessible locations in clear public view
 - ❖ Locate such that use of surrounding spaces is unimpeded



Clustered newspaper racks



Trellis portal

- ❖ Newspaper stands (if allowed)
 - ❖ Locate near circulation intersections to provide easy access to material
 - ❖ Cluster stands to avoid cluttered look
 - ❖ Provide stands consistent with the neighborhood design theme
- ❖ Pet waste stations
 - ❖ In mixed use zone, supply 1 biodegradable pet waste bag dispenser per 300'
- ❖ Information kiosk
 - ❖ If an information kiosk is planned, consideration should be made for consistency with neighborhood design theme, and monitoring of postings
- ❖ Trellises
 - ❖ Provide trellises to define outdoor spaces and seating areas
 - ❖ Independently or combined with landscaping, trellises may be used to screen undesirable views
 - ❖ Use to contrast scale and mass of buildings

5.3 *HARDSCAPE MATERIALS AND TREATMENTS*

Good paving design enhances the cohesiveness of a neighborhood and provides visual cues about the purpose of spaces. Use a hierarchy of hardscape materials, textures and treatments to distinguish vehicle, bicycle and pedestrian pathways and linkages. Landscape materials should be consistent with City of Sacramento standards.



Use historic Sacramento paving patterns

- ❖ Sidewalks
 - ❖ Maintain consistency with historic sidewalk patterns of City of Sacramento
 - ❖ Provide scorelines at 3'6" apart in both directions
 - ❖ Provide scorelines to create 6" strip at each side of sidewalk parallel to street
 - ❖ Provide scorelines 1/4" wide by 1/4" deep
 - ❖ Use lamp black in concrete mix to provide color consistency among separate pours
 - ❖ Specialty paving associated with a building may interrupt the standard sidewalk color and pattern at certain special locations, such as building entrances



Enhanced paving at crosswalks

- ❖ Crosswalks
 - ❖ At selected paved crosswalks, use stamped colored asphaltic concrete paving or other suitable material in durability and quality
 - ❖ Enhance paving at crosswalks to be 15' in width, with 2' wide bands at edges per City of Sacramento standards

- ❖ Enhanced street paving
 - ❖ Use enhanced colored paving at traffic circle in mixed use neighborhood zone
 - ❖ Use enhanced paving at medians with turning lanes or tapered ends where too narrow to support plant life or to be efficiently irrigated



Enhanced paving at sidewalk

5.4 LANDSCAPING

Thoughtful landscaping design in Curtis Park Village should complement the long-established neighboring area, noted for its “urban forest” of shady old-growth trees and gracious plantings. Use landscaping to enhance architectural character, to define exterior spaces, and to promote a comfortable pedestrian experience.



Tree grate

- ❖ Street trees
 - ❖ Install a consistent network of street trees along travel corridors to establish shade, beauty, and human scale
 - ❖ Maintain visual order by planting street trees of the same genus and species along the length of any street per City of Sacramento standards
 - ❖ Enhance identity of individual streets by varying genus or species
 - ❖ Select trees on a performance basis with the objective of minimizing water use, providing shade, minimizing hazardous litter, minimizing root intrusion, and providing color and contrast
 - ❖ Select evergreen and deciduous or flowering trees in combination to create visual interest and a dynamic landscape
 - ❖ Plant street trees at approximately 30' on center
 - ❖ Locate trees to allow for mature and long-term growth
 - ❖ Install 5' by 5' minimum size tree grates around trees adjacent to plazas, dining patios or other similar conditions



Landscaping for screening



Xeriscape ideas from cconserv.org

- ❖ Site landscaping
 - ❖ Select accent planting for entrances and key activity hubs
 - ❖ Select planting to screen or separate less desirable areas from public view, such as dumpster enclosures, parking areas, storage areas, loading areas, and public utilities
 - ❖ Plant vines where appropriate along solid walls and screen fences
 - ❖ Avoid short-lived plants, plants susceptible to disease, and large expanses of single plant varieties
 - ❖ Group plants in high- and low-maintenance zones as well as traffic zones, and hydrozones
 - ❖ Landscaping may be used to bio-filtrate storm water runoff
- ❖ Irrigation and water conservation
 - ❖ Design irrigation systems to ensure the efficient use of water and to discourage vandalism
 - ❖ The use of low-water native plants is highly encouraged
 - ❖ Control all automatic irrigation systems with a timer
 - ❖ Use rain shutoff valves and moisture sensors to minimize overwatering
 - ❖ Use plant materials or other attractive site elements to screen irrigation controls and pedestals from view
 - ❖ The use of drip or bubbler-type irrigation is encouraged to promote water conservation



- ❖ Use conventional spray irrigation systems with head-to-head coverage for turf areas
- ❖ Cover all exposed soil in planter areas with 3” of bark mulch to reduce moisture evaporation and to help control weeds
- ❖ Comply with local water use standards

5.5 FENCING AND WALLS

Fences and walls provide security, privacy, visual screening and sound attenuation as well as separation between uses of differing intensities. If used in excess, fences and walls can discourage pedestrian movement between residential, commercial, and public use areas, and therefore should be used only where necessary.



Photos courtesy of www.pedbikeimages.org/
DanBurden



- ❖ Use aesthetically pleasing, high-quality fencing and wall materials to complement the character of the unique areas within Curtis Park Village
- ❖ Use permeable fencing to allow visual access to view corridors, parks and public spaces
- ❖ Coordinate fencing and walls with the architecture with which they are associated
- ❖ Keep front setback areas clear of solid screen walls
- ❖ Consider graffiti control when selecting fence and wall materials
- ❖ Specific fence requirements as required by the project noise study in the EIR:
 - ❖ Install an 8' tall masonry fence along the Union Pacific property line to the north of Road C, per EIR noise study
 - ❖ Install an 8' high steel picket fence along the Union Pacific property line to the south of Road C, per EIR noise study

5.6 PRIVATE ART IN PUBLIC PLACES

Public art expresses and enhances the personality and character of a community. Art adds visual interest, engages community members and visitors and creates a sense of place.



Art reflective of locale

- ❖ The integration of public art into the design of buildings and site is encouraged
- ❖ Locate public art where it can be enjoyed by a large number of people: at sidewalks, intersections, plazas, and building entrances
- ❖ Public art can be created in small elements, such as tile banding on a stair riser, or in larger pieces, such as interpretive sculptures and functional art
- ❖ Public art can be an interactive media, such as video projections, fountains or water elements
- ❖ Public art can be used as a wayfinding feature to attract pedestrians to key locations such as a plaza, or can be developed as murals representing the area's unique history and people of significance
- ❖ Public art can take the form of decorative detail on benches, walls, stairs and entries
- ❖ Art that is responsive to the environment is encouraged (eg: clocks, benches, bicycle racks)
- ❖ Use art as a means of enhancing community understanding and history of Sacramento and the unique cultural assets and appreciation for local artists
- ❖ Public art may consist of both permanent and temporary installations

6.0 SIGNAGE AND GRAPHICS

Signs attract attention and provide information and directions. In Curtis Park Village signs are to enhance the visual quality of the space, have a consistent and aesthetically pleasing look, and assist wayfinding by pedestrian, bicycle and motor traffic.



Directional sign



Projecting blade sign

- ❖ General guidelines for signs
 - ❖ Easy to read and decipher
 - ❖ Provide clear identification
 - ❖ Simple sign designs are preferred
 - ❖ Enhance aesthetic environment through design consistency and quality
 - ❖ Use colors that are compatible with those used throughout Curtis park Village
 - ❖ Highlight the unique character of the neighborhood
 - ❖ Assist wayfinding - the ability of a person to find his or her way to a given destination - in a safe and clear manner
 - ❖ Be vandal-resistant
 - ❖ Signs that rotate or flash may not be used
 - ❖ Design so that electrical connections will not be visible on signs
 - ❖ Meet existing city codes
 - ❖ All signage will be subject to review and approval by the Design Review Committee
- ❖ Lighted Signs:
 - ❖ Lighted from a concealed light source, nonintrusive to vehicular or pedestrian traffic, or to neighbors
 - ❖ The light for a sign shall originate from an indirect source



Awning sign



Projecting signage

- ❖ Light shall be directed at the sign from an external, shielded lamp. Internal illumination of a sign is inappropriate
- ❖ Halo and silhouette signs are encouraged
- ❖ No sign should be illuminated by fluorescent or backlighting
- ❖ No sign or part of a sign may move, rotate, flash or change its brightness
- ❖ A warm light, similar to daylight, is appropriate
- ❖ The use of neon and/or incandescent bulbs may be considered
- ❖ Use neon in limited amounts so it does not become visually obtrusive
- ❖ Plastic internally illuminated sign cabinets are strongly discouraged
- ❖ Internal illumination of an entire sign panel is prohibited
- ❖ Regulatory signage: Convey information concerning rules, ordinances or laws per City of Sacramento regulations
 - ❖ Paint back surfaces
 - ❖ Use colors to coordinate with other streetscape elements
 - ❖ Consolidate regulatory signs on poles where possible
- ❖ Projecting signage: A building mounted sign with the faces of the sign perpendicular to the building fascia
 - ❖ Projecting signage (sometimes referred to as “blade” signs) is encouraged along pedestrian paths



Regulatory signs

- ❖ Use projecting signage to identify the name and business of occupant
- ❖ Design with maximum dimensions of 36-inches in width by 24-inches in height
- ❖ Install with bottom edge of sign at approximately 8-feet above the pedestrian way
- ❖ Awning signage: a name, logo of other identifying feature painted or placed on an awning, canopy, structural projection or cover over a door, window, storefront, or outdoor service area, typically non-illuminated
- ❖ Use a simple text or logo design that will not detract from the overall streetscape
- ❖ Window signage: any sign or painting on a window, intended to be viewed from the outside.
 - ❖ Subtle in size and design
 - ❖ Use to cover no more than 15% - 30% of display window space
- ❖ Fascia signage: A flat sign that is mounted on a wall and whose face runs parallel to it.
- ❖ Rooftop signage
 - ❖ No rooftop signage is allowed
- ❖ Bicycle signage
 - ❖ Provide “share the road” signage along on-road bicycle paths

7.0 LIGHTING

Well-designed outdoor lighting is an integral component in the creation of an active, walkable neighborhood for use when natural light is not sufficient. Lighting in Curtis Park Village serves to illuminate buildings, spaces and signage, to provide an adequate level of personal safety while enhancing the appearance of the area and is to be based upon sustainable neighbor-friendly principles.



Light fixtures complement building design



Energy efficient lighting at pedestrian scale

- ❖ Design lighting to provide ambiance, safety, and security without unnecessary spillover or glare onto adjacent properties
- ❖ Use current energy efficient fixtures and technology
- ❖ Adequately light pedestrian areas, plazas, sidewalks and building entrances to provide safety and security
- ❖ Scale light pole heights to complement adjacent areas
- ❖ When security lighting is needed, use lighting design to prevent offsite glare and light trespass
- ❖ Address special circumstances such as ‘areas in shadow’
- ❖ Utilize vandal-resistant fixtures
- ❖ Meet IESNA standards
- ❖ Building lighting:
 - ❖ Select building light fixtures that are architecturally compatible with buildings and to complement the theme of the surrounding area
 - ❖ Provide good lighting at building entrances
 - ❖ Use architectural lighting to provide for the safety of pedestrian movement
 - ❖ The use of lighting to wash primary walls and to highlight architectural features or detailing of building facades is encouraged



Lights compatible with building design



Parking lot lighting reflects design of neighborhood

- ❖ Do not use blinking, flashing lights, or exposed neon lighting to illuminate building facades or to outline buildings. Exception: temporary decorative lights, such as holiday lighting, may be allowed for temporary periods during the calendar year
- ❖ Do not use wall pack lighting on facades facing streets, parking or publicly accessible areas
- ❖ Parking lot lighting:
 - ❖ Use human scale lighting to illuminate pedestrian walkways within parking areas
 - ❖ Use light standards that do not exceed 30' in height for parking areas
 - ❖ The ratio between maximum and minimum lighting levels shall not exceed 4:1
 - ❖ Fully integrate and coordinate lighting and tree plans to avoid conflicts
 - ❖ Provide light standards and fixtures to meet minimum City of Sacramento illumination requirements
- ❖ Pedestrian area lighting:
 - ❖ In pedestrian areas, use light fixtures compatible with other light fixtures in Curtis Park Village
 - ❖ Illuminate building facades fronting on public streets with a minimum of 3 foot-candles
 - ❖ Light standards for pedestrian areas shall not exceed 12' in height
 - ❖ Use bollard-type fixtures to provide lower intensity lighting where appropriate



Cross-arms on street lights from which to suspend banners

- ❖ Street lighting:
 - ❖ Provide roadway scale illumination at intervals designed to promote safety, visual continuity, and community identity per City of Sacramento standards`
 - ❖ Provide street lighting standards with cross-arms from which to suspend graphics at designated locations
 - ❖ Design the size, number, and spacing of street light standards to achieve at least the minimum illumination standards of the City of Sacramento
- ❖ Sign lighting – see Section 6, Signage and Graphics

APPENDIX A



PATTERN BOOK CURTIS PARK VILLAGE

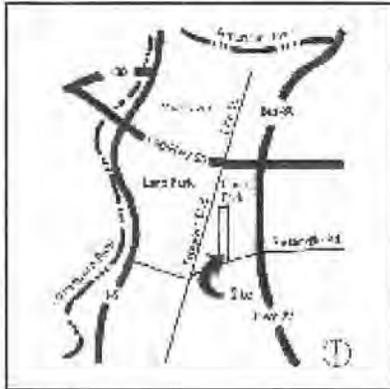
PREPARED FOR:
PETROVICH DEVELOPMENT COMPANY
5046 SUNRISE BLVD., SUITE ONE
FAIR OAKS, CA 95628-4945

PREPARED BY:
LPA SACRAMENTO, INC.
2484 NATOMAS PARK DRIVE, SUITE 100
SACRAMENTO, CA 95833

28 MAY 2004

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Location Map

Introduction

WE long to find remnants that link us to our past. These guidelines were born in an effort to establish and nourish the community and visual links between Curtis Park Village, Curtis Park and the other surrounding neighborhoods. These design guidelines serve to:

- ☞ Invoke the sense of Curtis Park.
- ☞ Allow a wide range of creativity, while, at the same time, bid the designer to respect and incorporate the historic visual and community elements that evoke the essence of Curtis Park.
- ☞ Provide a framework that enables Curtis Park Village to knit together the existing surrounding neighborhoods

Inherent Principles

TWO general planning principles are inherent, although not necessarily dwelt upon in great detail, in these design guidelines. The first is the creation of an urban forest and the second is passive environmental design. These two guiding principles reside in the molecular structure or "DNA" of these guidelines.

URBAN FOREST

Probably the most striking aspect of the Curtis Park and Land Park neighborhoods are the trees. It is the goal of these guidelines, first and foremost, to extend this urban forest to this newest phase of Curtis Park. Street trees that are common to the surrounding neighborhoods, picturesque, and amenable to urban uses, will form the spines of the neighborhoods.

Success may be measured by dappled shade and the familiar little leaf debris piles along the curbs of Curtis Park Village.



Urban Forest



Curtis Park Landscape

Success may be measured by the amount of summertime evening sounds coming from the porches and open windows along the residential streets and by the amount of social interaction between the residents.

PASSIVE ENVIRONMENTAL DESIGN

Inherent in the Curtis Park Village Design Guidelines are design strategies encouraging energy savings and conservation. The goal of incorporation of passive solar techniques such as wide overhangs and porches, deciduous trees and site orientation is to moderate extreme seasonal temperatures without the use of additional fuel sources.

Design Review

THE Petrovich Development Company or its successors shall perform design review on all new construction projects within Curtis Park Village

View from the Street

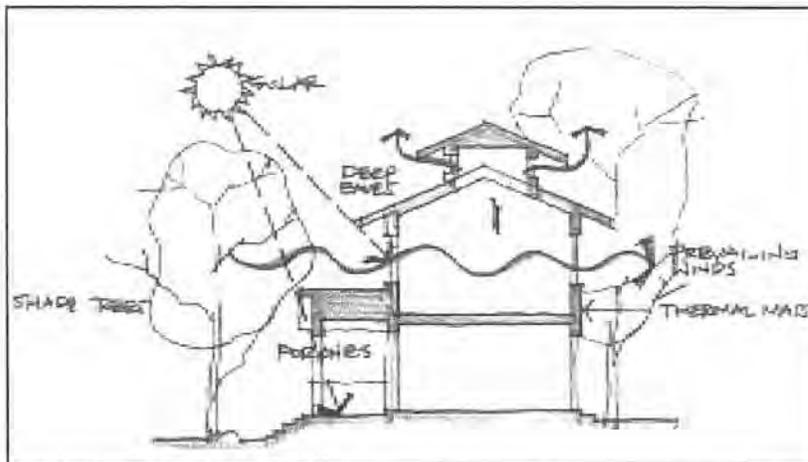
Success may be defined by reading a Sacramento Bee classified ad that a Curtis Park Village home is "charming."

AT the heart of Curtis Park Village are the single-family neighborhoods and streets. When we hear the words "Curtis Park", we think of the graceful and tasteful homes under the canopies of arching trees.

Simply put, these guidelines attempt to evoke the same sense of attraction and desire as the earlier phases of Curtis Park evoke for us today.

The following guidelines apply:

BUILDING RELATION TO GRADE



Passive, energy saving design elements



Home with raised entry

SETBACKS

Yards are comprised of areas "setback" from the property lines. Setbacks are to be landscaped and "frame" the dwelling. Building is allowed behind the setback on the lot but not between the setback line and the property line. Minimum setbacks are as follows and are to be coordinated with the requirements of the California edition of the Uniform Building Code. Actual front setbacks are to be coordinated with the Curtis Park Village Design Review Board.

Alley Loaded Lots (40'X100' typical)

- ☞ Front – 12.5' to 18'
- ☞ Side – 5'; Corner Lot (45' typical) – 10' setback
- ☞ Rear (Garage along alley) – 3'; 6' for single loaded alley
- ☞ Rear (Structure) – 10'

Tree lots (Alley Loaded - 80' X 100", typical) – Double 40' lots

- ☞ Front – 12' to 18'
- ☞ Side – 5'; Corner Lot – 10' setback
- ☞ Rear (Garage along alley) – 3'; 6' for single loaded alley
- ☞ Rear (Structure) – 10'

Street Loaded Lots (50' X 100', typical) –

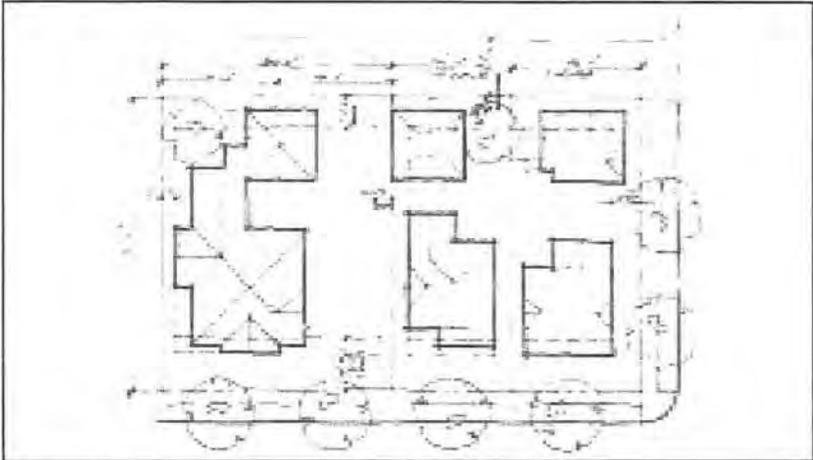
- ☞ Front – 12' to 18'
- ☞ Side – 5'; Corner Lot (55' typical) – 10' setback
- ☞ Rear – 10'

Deep, Street Loaded Lots (50' X 120', typical) –

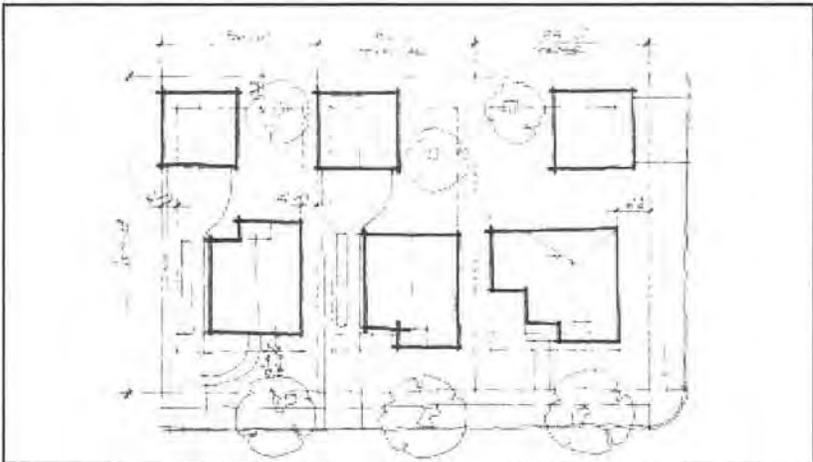
- ☞ Front – 15' to 18'
- ☞ Side – 5'; Corner Lot (55' typical) – 10' setback
- ☞ Rear – 10'

Row Housing Lots (30'X80', typical)

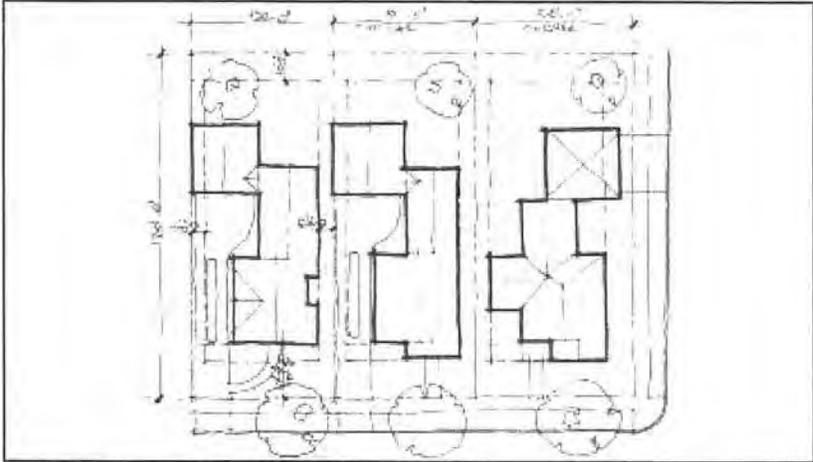
- ☞ Front – 5'
- ☞ Side – Setback on the adjacent lot to the zero setback side yard lot shall be either 0' or 5'



Alley Loaded Lots 40'x100'



Street Loaded Lots 50'x100'



Deep Street Loaded Lots 50'x120'

Cottage Lots –

- ☞ Side – 0'
- ☞ Side – 0'
- ☞ Rear – 0'
- ☞ Reduced parking requirements - one on-site parking space required; not necessary to have a garage.

PRIVATE LANDSCAPES

The front yard, normally lawn, in combination with foundation planting, is the traditional Curtis Park landscape treatment and is recommended for new single-family residences. Where a lawn is inappropriate due to lot size, setbacks or is not the selection of the homeowner, other, well-designed landscaping is encouraged. Ornamental trees, shrubs and seasonal flowers add sensory interest and are recommended. The use of trees for shade and screening is encouraged.

Courtyards and other landscape features may be combined with any landscape treatment. Care should be taken as to not separate the front yard completely from the street life.

ENTRIES

Entries shall be pronounced. Entries may include:

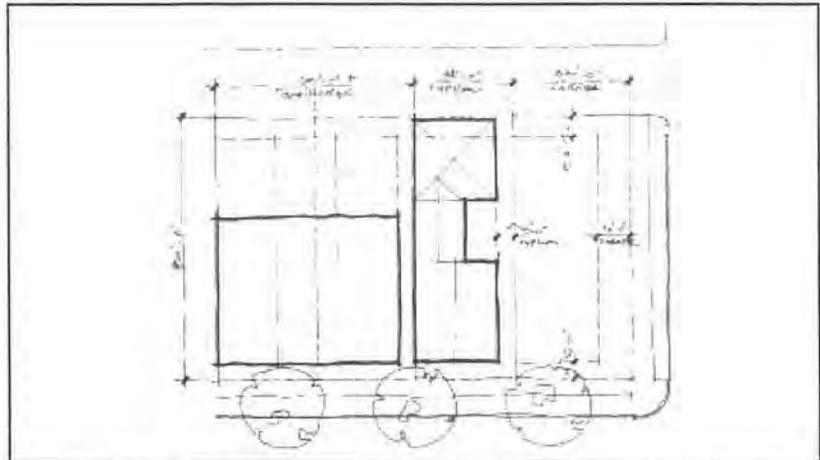
- ☞ Porches with roofs.
- ☞ Integral porticos over the front door.
- ☞ Small entry plazas or patios.

Entries may include:

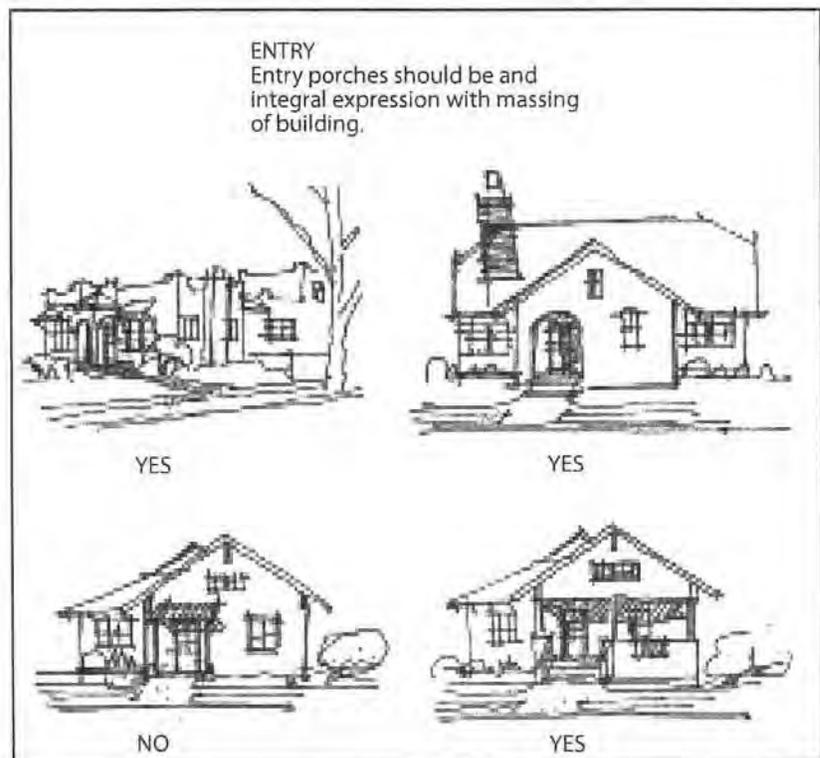
- ☞ Front steps that elevate the entry at least 18 inches above grade.
- ☞ A front door visible from the street.

STYLE

- ☞ Style of residences should complement the massing,



Row Housing Lots 30'x80'



Entries

- ☞ One and two story homes are appropriate and in character with the surrounding Curtis Park residences. Three story homes should treat the third story as an “attic story” in order to reduce the overall building height and enhance the intricacy of the roof-scape.

DRIVES AND WALKWAYS

- ☞ All residences may have side yard access drives even if the garage is accessed via an alley.
- ☞ Shared drives reduce curb cuts and are consistent with existing planning in Curtis Park.
- ☞ Walkways should extend from the public Right of Way (R.O.W.) to the front door, separately from the driveway and may also extend to the side yard driveway or, a combination of both.

FENCES

- ☞ Low fences and walls not to exceed 42" in height may be used to define outdoor living spaces, terraces, etc. and not to delineate the extent of the property line in the front yard.
- ☞ Higher walls and fences, not to exceed six feet in height, are appropriate for side yards and rear yards only.
- ☞ Fences and gates are allowed to screen garages from the street and must be opaque. No chain link fencing is to be visible from the street, even if it is covered with vines or other landscaping.

GARAGES

- ☞ All garages may contain “granny flats” having bathrooms and kitchens.
- ☞ Garages facing alleys may be built to the side property lines (no setbacks required)



Second story as "attic story"



Third story as "attic story"

Single sideyard with carport and overlapping pedestrian and vehicular



YES

DRIVEWAYS/GARAGES
Garages should be located toward the back of the lot with either sideyard or alley access. Garages should not be a prominent feature in street elevation.

Shared Sideyard



YES
YES



YES



NO



Single Sideyard

Driveways and Garages

- ☞ Garages for row houses must be served from an alley and may be integral to the dwelling.
- ☞ Lots with alleys are required to locate their garage on the alley with vehicular access to the garage from the alley only.
- ☞ Freestanding garages shall be coordinated with the primary structure in terms of architectural style, color, materials, and detailing.

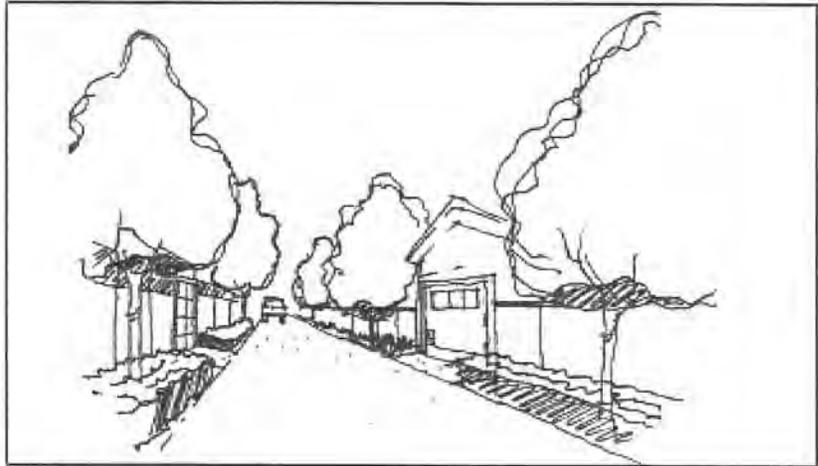
View from the Alley

Success may be defined by the first multi-yard front yard football game in this neighborhood.

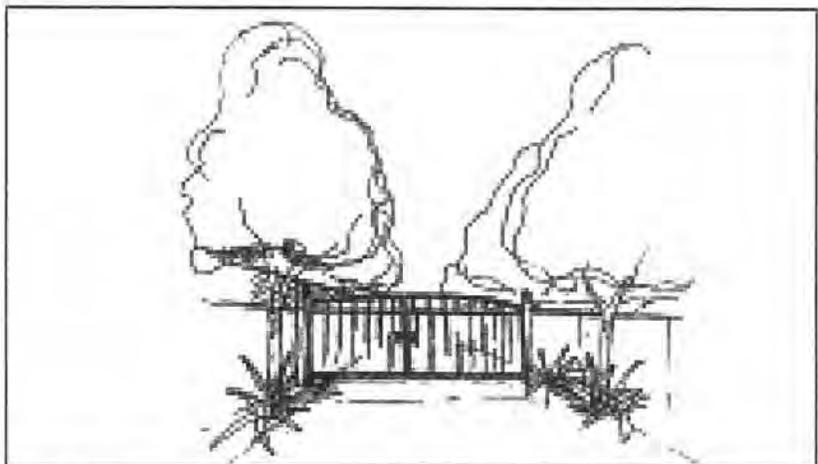
In the single-family neighborhoods, alleys primarily serve the automobile. Instead of a garage door and parked automobiles dominating the front of a home, those necessary functions are removed to the rear of the lot allowing family use of the front of the home.

ALLEYS

- ☞ Alleys shall be 20 feet in width.
- ☞ Alleys shall be paved in accordance with Sacramento County Road Standards (chip and seal with no curb and gutters).
- ☞ Alleys may be gated for the security and privacy of the residents.
- ☞ The gates shall be designed to "fit" with the overall character of the neighborhood and family of streetscape furniture.
- ☞ The gate area shall be lighted.
- ☞ Landscaping will be allowed around alley gates so as not to provide hiding places.



Alley-scape



Gate at alley

- ☞ Fencing shall not exceed six feet in height except for a two-foot trellis may be added for a maximum of eight feet in height.

STORAGE AND WASTE STORAGE

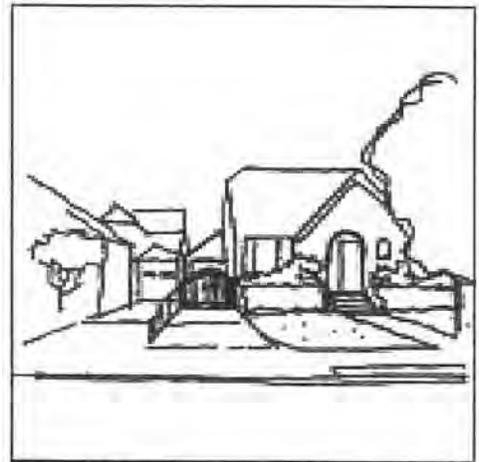
- ☞ An enclosed and roofed area for storing waste is allowable but only within private property and not within the alley right-of-way or front yard area. The materials, color and style of the storage facility shall match the rear fence and garage.

PARKING

- ☞ No parked vehicle shall intrude into the alley right of way.

LANDSCAPING

- ☞ One "alley street tree" per residence is encouraged.
- ☞ The "alley street" trees shall be planted in a planting bed between the alley right of way line and the rear fence of a residence.
- ☞ Additional landscaping in this planting bed is encouraged.



Gate at driveway

FENCES/WALLS
Fences/walls should be used to define outdoor space and appear to be a natural extension of the building. Fences/walls should not be used to define property



YES



YES



NO

Fences and Walls

APPENDIX C
SACRAMENTO BIKEWAYS

Sacramento Bikeways

Legend

- Bikeways**
-  Existing On-street
 -  Existing Off-street
- Other**
-  Schools
 -  Parks
 -  City Boundary

0 0.25 0.5 0.75 1 1.25
Miles



Department of
TRANSPORTATION
City of Sacramento

Map Date: Jan 2009, Map Contact: S. Tobin email: stobin@cityofsacramento.org

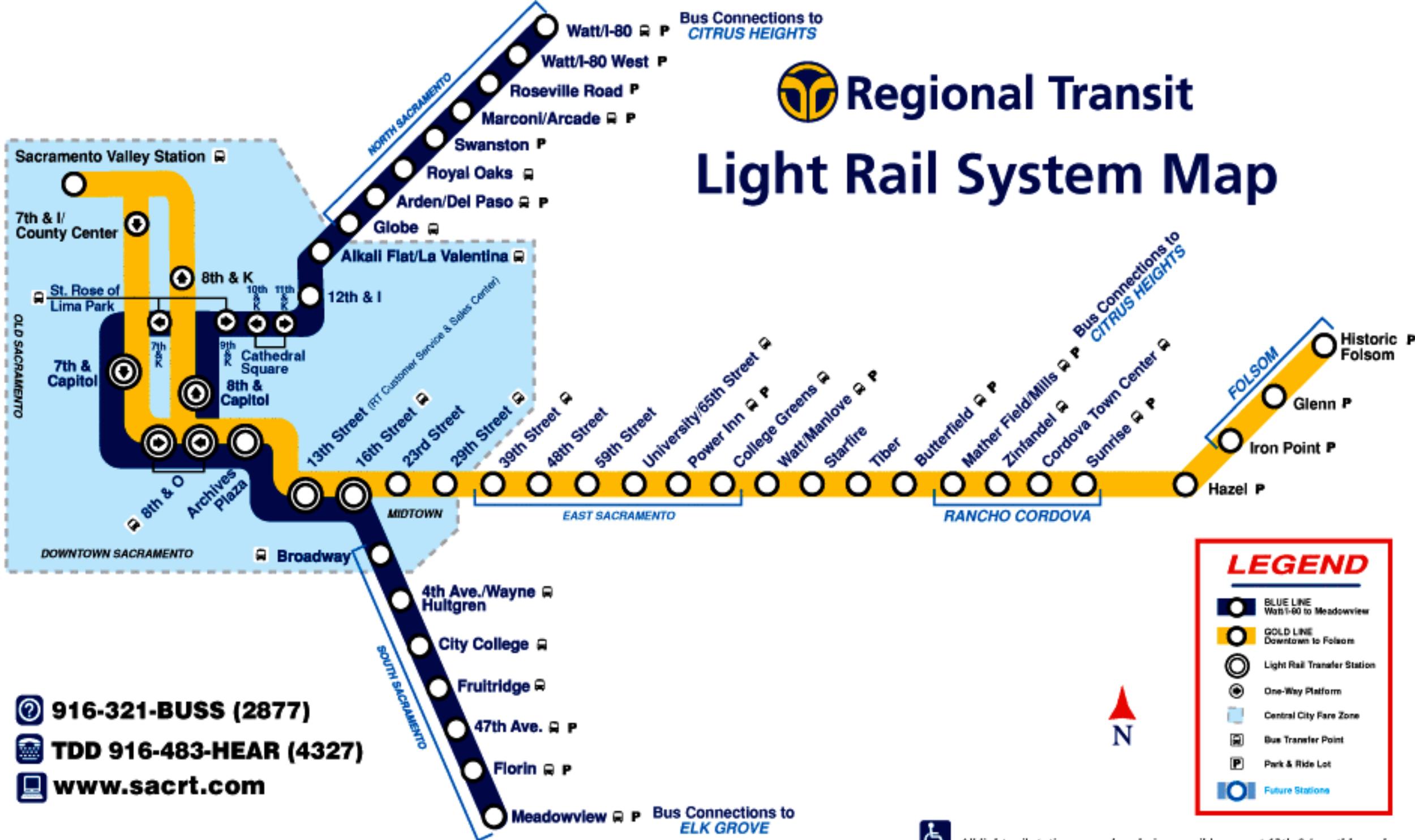


APPENDIX D

**SACRAMENTO REGIONAL TRANSIT MAPS
LIGHT RAIL AND BUS ROUTES**



Regional Transit Light Rail System Map



916-321-BUSS (2877)
TDD 916-483-HEAR (4327)
www.sacrt.com

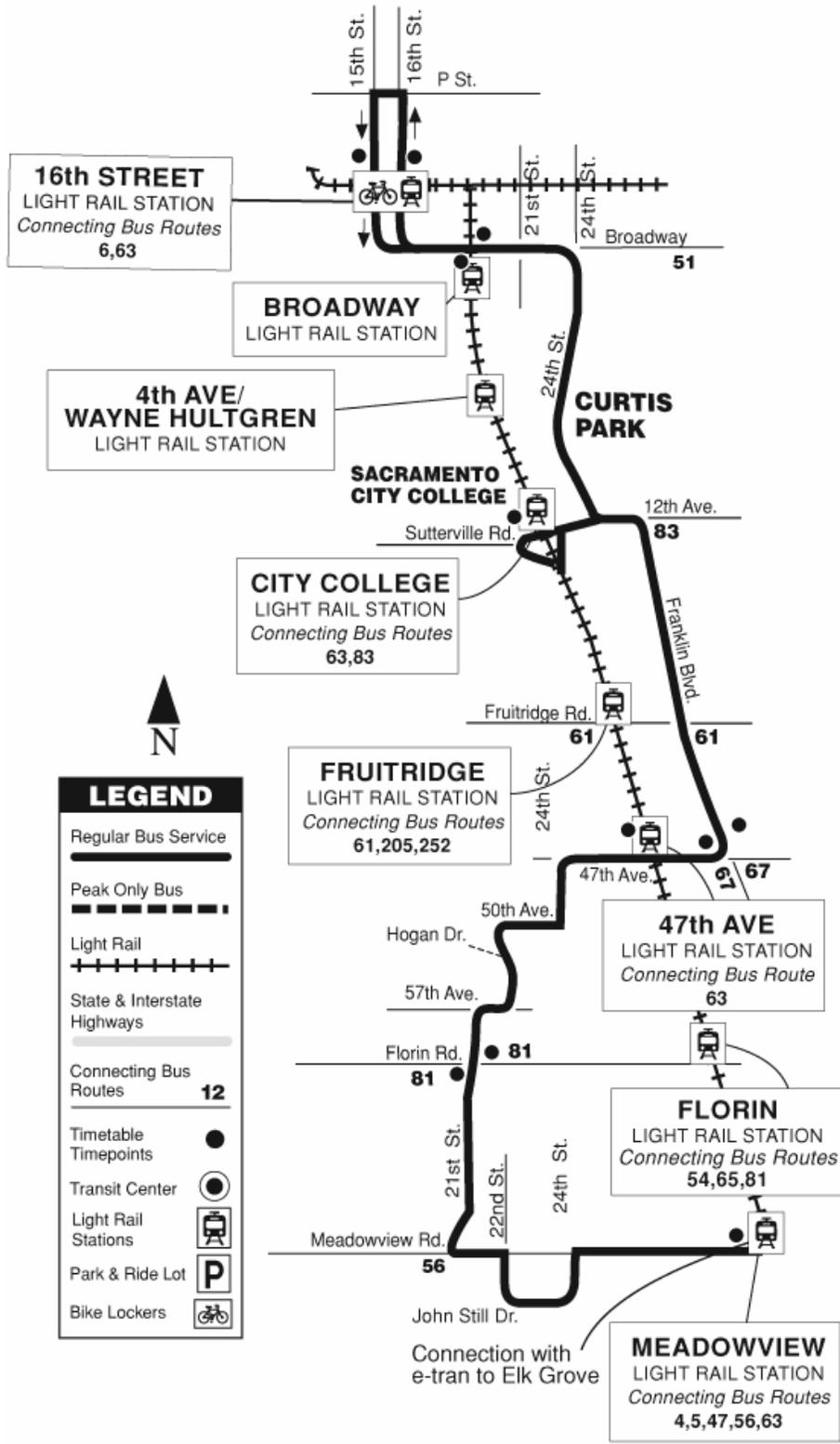
LEGEND

- BLUE LINE
Watt/I-80 to Meadowview
- GOLD LINE
Downtown to Folsom
- Light Rail Transfer Station
- One-Way Platform
- Central City Fare Zone
- Bus Transfer Point
- Park & Ride Lot
- Future Stations



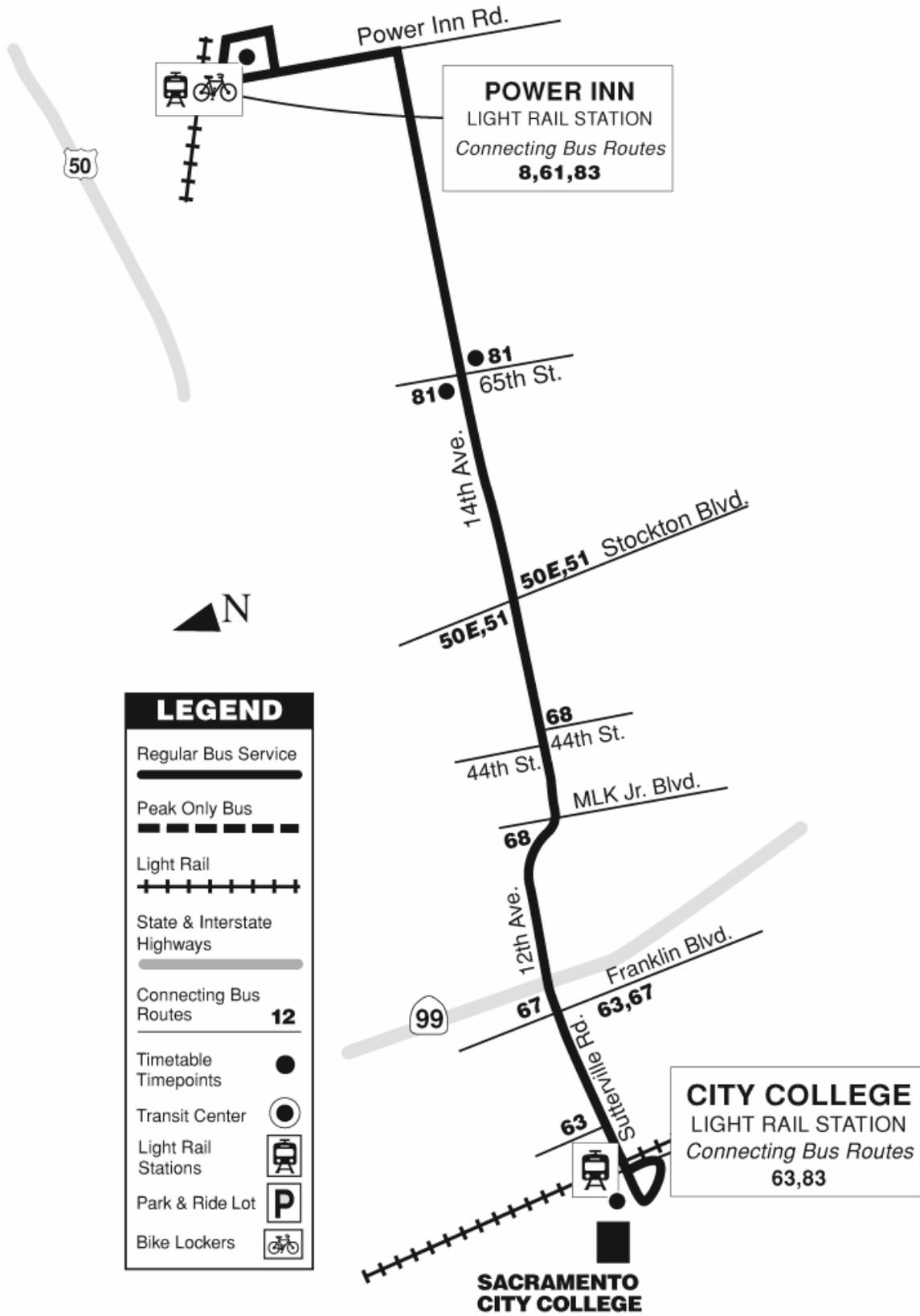
All light rail stations are wheelchair accessible, except 12th & I southbound

DOWNTOWN SACRAMENTO



LEGEND

- Regular Bus Service
- Peak Only Bus
- Light Rail
- State & Interstate Highways
- Connecting Bus Routes **12**
- Timetable Timepoints
- Transit Center
- Light Rail Stations
- Park & Ride Lot
- Bike Lockers



LEGEND

- Regular Bus Service
- Peak Only Bus
- Light Rail
- State & Interstate Highways
- Connecting Bus Routes **12**
- Timetable Timepoints
- Transit Center
- Light Rail Stations
- Park & Ride Lot
- Bike Lockers

POWER INN
 LIGHT RAIL STATION
Connecting Bus Routes
8,61,83

CITY COLLEGE
 LIGHT RAIL STATION
Connecting Bus Routes
63,83

SACRAMENTO CITY COLLEGE

APPENDIX D



Sacramento
Housing &
Redevelopment
Agency

December 16, 2009

David Kwong
Director of Planning
City of Sacramento
300 Richards Boulevard
Third Floor
Sacramento, CA 95814

Re: Curtis Park Village Inclusionary Housing Plan

Dear Mr. Kwong:

I am writing in regards to the Curtis Park Village project, file number P04-109. As you know, this project is subject to the City's Mixed Income Housing Ordinance.

SHRA has received and reviewed the enclosed Inclusionary Housing Plan for Curtis Park Village. Our staff has found the plan acceptable under the ordinance, and is now forwarding it to the City for final review.

If you have any questions, please call Catherine Orr, Housing Finance Analyst, at (916) 440-1399 ext. 1223, or Jeree Glasser-Hedrick, Program Manager, at (916) 440-1302. Thank you for your consideration.

Sincerely,

Catherine Orr
Housing Finance Analyst

Attachment: Inclusionary Housing Plan

Inclusionary Housing Plan #3
Onsite Multifamily Rental

**City of Sacramento
Inclusionary Housing Plan**

**Multifamily Rental Project
Onsite Inclusionary Housing Component**

Project Name: Curtis Park Village
Project Location Sutterville Rd. (between 24th and the Railroad)
Developer Name Calvine & Elk Grove-Florin, LLC
**Developer Address
And Phone Number** 5046 Sunrise Blvd., Fair Oaks, CA 95628
(916) 966-4600
Gross Acreage 71.7 acres
Number of Units 522

Mixed Income Housing Policy

The Project site is located in a new growth area and thus is subject to the City's Mixed Income Housing Policy. The Mixed Income Housing Policy adopted in the City of Sacramento Housing Element and required by the City's Mixed Income Housing Ordinance, City of Sacramento City Code Chapter 17.190.010 requires that residential projects in such area contain a defined percentage of housing affordable to low income and very low income households.

Inclusionary Housing Plan

Pursuant to the City Code Section 17.190.110 (B), an Inclusionary Housing Plan ("Plan") must be approved prior to or concurrent with the approval of legislative, or as applicable in this case, adjudicative entitlements for the Project. City Code Section 17.190.110 (A) sets forth the number, unit mix, location, structure type, affordability and phasing of the Inclusionary Units in the Project. This document constitutes the Plan, and, as supplemented and amended from time to time, is intended to begin implementation of the Inclusionary Requirement for the Project. All future approvals for the Project shall be consistent with this Plan.

Inclusionary Housing Plan #3
Onsite Multifamily Rental

The Inclusionary Requirement for the Project will be set forth in more detail in the Inclusionary Housing Agreement (Agreement) executed by the Developer and the Sacramento Housing and Redevelopment Agency (“SHRA”) and will be consistent with this Plan. The Agreement shall be executed and recorded against the entire development no later than the approval of the first final map.

Number of Inclusionary Units

The Developer, or its successors and assignees, shall construct or cause to be constructed a multifamily rental development affordable to Very Low Income Households (“Very Low Income Units”) and Low Income Households (“Low Income Units”) as defined in the Sacramento City Code Section 17.190.020, equal to ten percent (10%) and five percent (5%) of the total number of housing units approved for the Project, respectively. Based on the current Project proposal, the Inclusionary Requirement for the Project is presented in the table below.

Table 1: Number and Income Affordability of Inclusionary Units

Total Number of Units within the Project	522
Very Low Income Units (10% of units)	52
Low Income Units (5% of units)	26
Total Number of Inclusionary Units	78

If the Project approvals are amended to increase the number of units in the Project, this Plan will be amended to reflect a number of equal to ten percent (10%) of the increased total residential units in the amended entitlements for Very Low Income units and five percent (5%) for Low Income units. If the Project approvals are amended to decrease the number of residential units in the Project, this Plan will be amended to reflect a number equal to ten percent (10%) for the decreased total residential units in the amended entitlements for Very Low Income units and five percent (5%) for Low Income units. However, after a building permit has been issued for a structure to contain Inclusionary Units, those Units will be constructed and maintained as Inclusionary Units pursuant to the terms of Chapter 17.190 of the City Code regardless of any subsequent reduction in the number of approved total residential units in the Project.

Location of Inclusionary Units within the Project

The Inclusionary housing component shall accommodate diverse family sizes by including units with different numbers of bedrooms. Units should be dispersed to the maximum extent feasible, but may be located in a single building or complex. Multifamily buildings may contain any proportion of inclusionary units. The unit mix and sizes for the inclusionary units are presented in the table below.

Inclusionary Housing Plan #3
 Onsite Multifamily Rental

Table 2: Unit Mix, Unit Numbers, and Unit Size of Inclusionary Units

Number of Inclusionary Units	Level of Affordability	Unit Numbers	Number of Bedrooms	Square Footage
35	Very Low Income	TBD	1	600
17	Very Low Income	TBD	1 or 2	600-750
17	Low Income	TBD	1	600
9	Low Income	TBD	1 or 2	600-750

Affordability Requirements

Rents of the Inclusionary Units shall be restricted to households with incomes, at the time of initial occupancy, that do not exceed 50 percent (50%) of the median income for Sacramento County, adjusted for actual household size for Very Low Income households and 80 percent (80%) of the median income for Low Income households and shall be consistent with the SHRA guidelines. Median income figures are those published annually by the United States Department of Housing and Urban Development. The rents of the Inclusionary Units will be set in accordance with the Guidelines for the Sale of Inclusionary Housing and Section 17.190.090 of the Ordinance, where the renter shall not pay more than 30 percent (30%) of gross monthly income for rent adjusted for an appropriate allowance for utilities and services. The duration of affordability of the inclusionary units will be for a period of thirty (30) years.

Phasing of Development of the Inclusionary Units

The Inclusionary Units shall be developed concurrently with the development of the remaining units in the Project, as defined in Sacramento City Code Section 17.190.020. The nature of the concurrency is defined by a series of linkages between approvals of the market rate units and the development of the Inclusionary Units.

Market Rate Housing/Inclusionary Unit Linkages

The following describes the relationship of market rate development activity to the activity of inclusionary unit development activity. The milestones outlined below are to ensure that the development of affordable units occurs concurrently with the development of market rate units.

- The Inclusionary Housing Plan shall be approved concurrently with the approval of the Project's tentative map.
- The Inclusionary Housing Agreement shall be executed and recorded against the entire development concurrently with the recordation of the Project's first final map.
- No more than seventy-five percent (75%) of the building permits for market rate residential units may be pulled prior to the issuance of 100 percent (100%) of the building permits for the Inclusionary residential units.

Inclusionary Housing Plan #3
Onsite Multifamily Rental

- A Release of Inclusionary Housing Agreement shall be recorded for the market rate residential lots when 100% of the building permits are pulled for the Inclusionary units.
- A Regulatory Agreement specifying rent restrictions for a period of no less than thirty (30) years shall be recorded against the Inclusionary units when building permits are pulled, or when multifamily housing financing is closed for the Inclusionary units.
- A Release of Inclusionary Housing Agreement shall be recorded for Inclusionary units concurrently with recordation of the Regulatory Agreement.
- Marketing of the inclusionary units within the Project shall occur as soon as the Inclusionary units are constructed.

Fee Reductions

The City of Sacramento may provide \$4,000 per unit in fee reductions for obligated very-low income inclusionary housing units and \$1,000 for obligated low income inclusionary housing units. Currently, no funding is available for the Low Income Housing Fee Waiver and Deferral Program, however, reductions depend on the availability of funding at the time of recordation of the Inclusionary Housing Agreement. The Planning Director shall approve fee reductions and approvals are valid for 18 months after the recordation of the Inclusionary Housing Agreement.

Fee reductions are being requested in the amount of \$234,000 as presented in the table below.

Table 3: Fee Reduction Request

Units	Income Affordability	Fee Reduction per Unit	Total Fee Reduction
52	Very-low income	\$4,000	\$ 208,000
26	Low income	\$1,000	\$ 26,000

Amendment and Administration of the Inclusionary Housing Plan

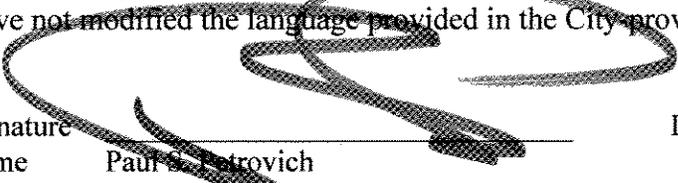
The Planning Director, with the advice of the Executive Director of SHRA, shall administer this Inclusionary Housing Plan. The Planning Director may make minor administrative amendments to the text of this Plan as provided in Sacramento City Code Section 17.190.110(B) (1).

Minor amendments include modifications in total number and location of units and the unit size and mix necessary to reflect changes in the design of the underlying development project, including changes in unit size, on-site location and other similar changes may be approved by the Planning Director. Recordation of an amendment will not be required to be recorded against the entire project. Major amendments must be approved by the governing body approving the Project and a new Agreement shall be recorded against the entire development project.

Inclusionary Housing Plan #3
Onsite Multifamily Rental

Developer Acknowledgement

I attest that I have prepared this Inclusionary Housing Plan to comply with the Mixed Income Housing cited above and that all information provided is accurate and complete to the best of my knowledge. Except for project-specific information requested in the template, I have not modified the language provided in the City provided template.

Developer Signature 
Developer Name Paul S. Petrovich
Title Manager, Carvine & Elk Grove-Florin, LLC
Phone Number 916-966-4600

Date 12/16/09

APPENDIX E

Curtis Park Village

Planned Unit Development

Schematic Plan and Development Guidelines



**Curtis Park Village
Planned Unit Development
Schematic Plan and Development Guidelines**

(Text-only version)

DRAFT 01.29.2010

P04-109
Approved (DATE)
Sacramento City Council Resolution 2009-###

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Appendix A: Curtis Park Village Single Family Home Design Guidelines

1.0 INTRODUCTION

- 1.1 Location, Context and Vision
- 1.2 Goals and Objectives
- 1.3 Purpose and Intent
- 1.4 Procedures for Approval and Amendment

1.1 LOCATION, CONTEXT AND VISION

On the site of a former Union Pacific railyard, the 72-acre Curtis Park Village Planned Unit Development (PUD) is located to the south of Sacramento's central city area, surrounded by neighborhoods established early in the 20th century and within walking distance of Sacramento City College and Land Park. The project is bordered on the west by Union Pacific and Light Rail, to the north and east by the existing Curtis Park neighborhood and to the south by Sutterville Road. Also nearby are the Western Pacific Addition and Hollywood Park neighborhoods.

Curtis Park Village has been laid out using current City of Sacramento "Pedestrian Friendly Street Standards" and with convenient linkages to nearby public transportation. There are two light rail stations at opposite ends of the site's west side. It is envisioned that the bus routes currently running along nearby 24th Street will be re-routed to the main north-south road through Curtis Park Village. The design has been based on urban infill and sustainable design principles, as well as the strong community planning traditions of Sacramento's historic and long-established neighborhoods.

The vision for Curtis Park Village is a vibrant mixed-use neighborhood developed at a pedestrian scale. Uses of the site include: detached brownstones, cluster-housing, single-family detached homes, affordable seniors and market-rate multi-family housing, a community shopping and retail/commercial development area, and a neighborhood park. These elements will combine into a truly vibrant mixed-use neighborhood. Curtis Park Village incorporates values of new urbanism and smart growth, including walkable neighborhoods with tree-lined streets, pedestrian-scaled architecture, with effective connections to surrounding communities.

1.2 GOALS AND OBJECTIVES

Curtis Park Village PUD strives to achieve four primary goals. Each of these goals will be pursued focusing on specific design objectives:

1. Create a visually interesting, pedestrian friendly mixed-use neighborhood that promotes smart growth principles
 - A. Emphasize the creation of spaces and places that encourage social interaction and foster community pride and support
 - B. Maintain a high quality of life and create charm and character for the emerging neighborhood
 - C. Utilize a consistent set of design elements throughout the PUD to unify the area visually and to enhance people's lives and property values

2. Provide a vibrant and successful neighborhood retail center
 - A. Provide an integrated development theme while still permitting flexibility in the location and development of businesses to respond to changing market conditions
 - B. Implement design standards that encourage design innovation and flexibility

3. Provide various housing choices including single-family and cluster, affordable seniors, and market-rate multi-family residences

4. Maximize opportunities for efficient transit provided by the public transportation and roadway corridors serving the site of the PUD
 - A. Encourage the use of public transportation though site design that emphasizes convenient transit access and use
 - B. Develop appropriate linkages to surrounding neighborhoods including pedestrian, bicycle, vehicle and alternative transportation modes.



Vibrant walkable neighborhoods



1.3 PURPOSE AND INTENT

The Curtis Park Village Schematic Plan and Development Guidelines contain specific details, elements, conditions, and restrictions to carry out the vision of the Curtis Park PUD.

To achieve the goals and objectives of the Curtis Park Village PUD, the Guidelines are formulated in a flexible manner to provide for creative solutions to a variety of design situations.

These guidelines are intended as a supplement to existing City Ordinances and shall prevail when different from other applicable City Ordinances.

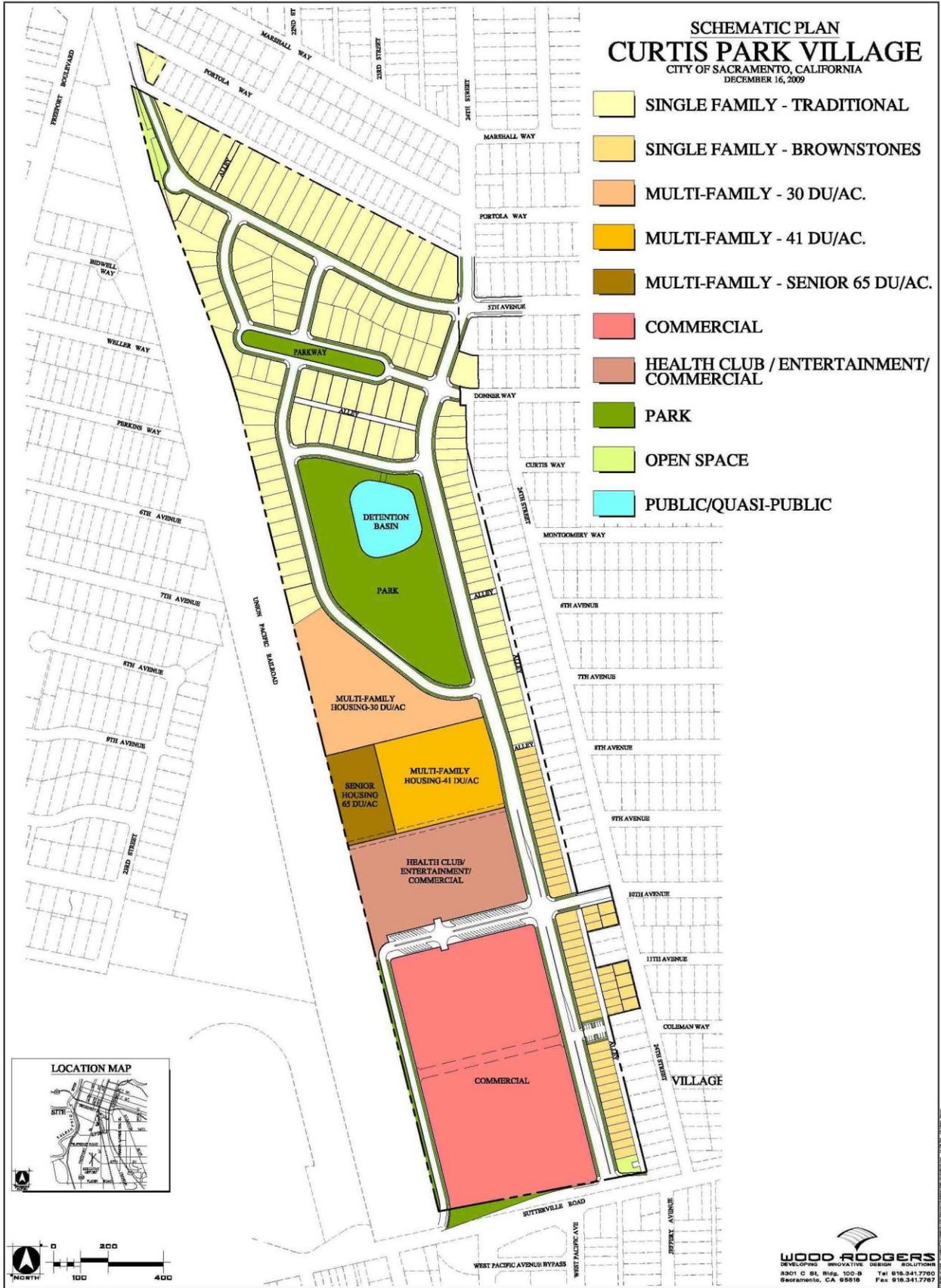
1.4 PROCEDURES FOR APPROVAL AND AMENDMENT

The procedures for approval of development under, as well as amendments to, these Guidelines are as set forth in Title 17 of the Sacramento City Code, and as it may be amended from time to time.



Photo by Marjorie Schreiber Lear

Curtis Park Village Planned Unit Development City of Sacramento



2.0 LAND USE DEVELOPMENT STANDARDS

- 2.1 Concept and Land Use
- 2.2 Commercial Zone: Shopping Center SC (PUD) Zone
- 2.3 Single Family Residential Uses: Single-Family Alternative R1-A (PUD) and R2-B (PUD) Zones
- 2.4 Multi-Family Residential: Multi-Family Residential R4-A (PUD) Zone
- 2.5 Neighborhood Park

2.1 CONCEPT AND LAND USE

Curtis Park Village is comprised of three predominate types of development for three predominate land uses linked by a network of pedestrian friendly streets, open spaces, and a neighborhood park.

1. **Commercial Use Area:** The most southern portion of the site extending from Sutterville to the parcels on the north or Road “D” and just south of the multi-family housing area that forms the south edge of the neighborhood park. Within this zone is a neighborhood shopping center area zoned SC(PUD). The layout of the commercial zone is schematic with the Schematic Plan for the PUD showing use areas including the Commercial and Health Club/Entertainment Commercial areas. The street system in this area and parcel layout provide a grid pattern for pedestrian, bicycle, and vehicle circulation consistent with the “Traditional Center” for commercial uses and “Traditional Neighborhood High” residential requirements of the City of Sacramento 2030 General Plan land use designations. The eventual locations of buildings will be further defined within the commercial use area to be consistent with the 2030 General Plan Land Use requirements and Zoning Code designations of the City of Sacramento and the requirements of these Design Guidelines. The commercial zone will serve surrounding residential neighborhoods, creating destinations, convenient shopping and entertainment within walking/biking distance.

2. **Single-Family Housing Area:** The Single-Family Housing area of the plan is generally located in the northern half of Curtis Park Village, extending from the southern edge of the new neighborhood park to the private drives that forms the northern edge of the development. Within this zone are single family residential lots designated “Traditional Neighborhood Low” and zoned R-1A (PUD). The single family neighborhood zone complements the character and style of the surrounding Curtis Park community and like many historic Sacramento neighborhoods Curtis Park Village has at its heart the neighborhood park.

Higher density single-family housing is found along the east side of Road “A” in the Curtis Park Village plan. This area is designed as Traditional Neighborhood Medium per the City of Sacramento 2030 General Plan and the Zoning Code designation is R2-B (PUD). Single-family homes in this location can be described as the following two types:

- A. The Brownstone row, a slightly more urbanized residential area that acts as a transition between the existing Curtis Park single family uses to the east of Curtis Park Village in the Traditional Neighborhood Medium, R2-B (PUD) area.
 - B. Cottage Homes infilling empty parcels along 24th Street in the existing Curtis Park neighborhood and activating the new private drives in the Traditional Neighborhood Medium, R2-B (PUD) area.
3. **High-Density Housing Area:** The area between the south of the new neighborhood park and the north edge of the commercial zone can best be described as the high-density housing in the Curtis Park Village plan allowing for the development of apartments and condominium multi-family housing. The high-density housing area acts as a transitional zone between the less intense single-family development to the north and the commercial zone in the south of Curtis Park Village. Within this zone

are multi-family housing with a Traditional Neighborhood High land use designations in the City of Sacramento 2030 General Plan and zoned R-2B(PUD), and R-4(PUD) in the Zoning Ordinance. This area includes:

- A. Multi-family Housing in the Traditional Neighborhood High, R4-A (PUD) area.
- C. Affordable Senior Housing Apartments in the Traditional Neighborhood High, R4-A (PUD) area along the western edge of Curtis Park Village and integrated with the multi-family housing area adjacent to the commercial uses in the SC (PUD) zone.

2.2 COMMERCIAL AREA: Shopping Center (SC) Zone

Background information:

As an infill project, Curtis Park Village is bordered by already busy thoroughfares: Sutterville Road, the railroad and light rail lines, nearby Highway 99 and Freeport Blvd. This location provides a unique opportunity for the commercial zone of Curtis Park Village to be both economically successful and an “active buffer” between both the new and existing residential neighborhoods and these large transportation corridors.

The commercial zone will strike a balance between serving the more intimate immediate local community with walkable destinations, and welcoming the greater community and larger customer base required to nourish a viable environment for thriving businesses.

Nearby light rail service will add to the synergy by providing convenient public transportation.

More than 20,000 students at adjacent Sacramento City College widen the customer base considerably. They will have access to services and destinations while contributing to the viability of the commercial zone.

The character of the commercial zone is to be sensitively

informed by the adjacent pedestrian- and bicycle-friendly, urban-forested neighborhoods.

The procedures for approval of development within the Shopping Center (SC) Zone shall be in compliance Title 17 of the Sacramento City Code, and as it may be amended from time to time.

Exceptions to compliance with Title 17 within Curtis Park Village that are allowed per these design guidelines:

1. Building Heights may be increased up to 45' to allow for mixed use and multi-family housing attached to ground floor commercial and retail development.

2.3 SINGLE FAMILY RESIDENTIAL USES: R1-A (PUD) and R2-B (PUD) Zones

For Design Guidelines for single family neighborhood at north end of Curtis Park Village, see Appendix A, Single-Family Home Design Guidelines: Curtis Park Village. Supplementary information for brownstone neighborhood and for cottage infill sites appears below.

1. Single-Family Homes: Traditional Neighborhood Low, R1-A (PUD) Zone
 - A. The Traditional Single Family Home Neighborhood of Curtis Park Village is intended to create a visual integration the planning, architectural design, and style of the existing Curtis Park neighborhoods.
 - B. These sites may be developed at a density of up to 6 dwelling units per net acre.
 - C. Development standards applicable to the Tradition Single Family Neighborhood sites are found in Appendix A: Curtis Park Village Single Family Home Design Standards included in this document..
 - D. Design Review for Single-Family Homes within the Curtis Park Village PUD shall be per Section 17.180 of the Sacramento City Code.

2. Brownstone Homes: Traditional Neighborhood
Medium, R2-A (PUD) Zone

A. The vertical stature of the homes in this neighborhood complements the architecture of the commercial area across the street, the main access to Curtis Park Village. The Brownstones provide transition between the existing and new residential neighborhood and the commercial areas of Curtis Park Village. The design intent for the Brownstone Neighborhood is that the homes constructed in this area of Curtis Park Village reflect the traditional brownstone homes found in cities such as Boston, New York, and Washington, D.C.



B. These sites may be developed at a density of up to 13 dwelling units per net acre.

C. It is the intention that the Brownstone Neighborhood homes shall be designed as an integrated neighborhood with a common design theme with a variety of street facades that are coordinated to present a traditional brownstone neighborhood. The Single-Family Housing Design Guidelines shall apply to the Brownstone Neighborhood homes.

D. Development standards applicable to the Brownstone Neighborhood are incorporated in "Appendix A: Curtis Park Village Single Family Design Guidelines" incorporated in these PUD Design Guidelines.



E. Design Review for the Brownstone Home designs within the Curtis Park Village PUD shall be per Section 17.180 of the Sacramento City Code.

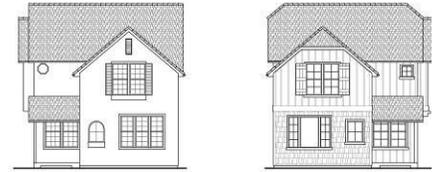
3. Cottage In-Fill Homes: Traditional Neighborhood
Medium, R2-A (PUD) Zone

A. Cottage infill sites occur along the west side of 24th Street and near the project's Shopping Center (SC) zone

B. These sites may be developed up to a

density of 20 dwelling units per net acre.

- C. The Infill Cottages should be integrated into the existing neighborhood fabric by means of architectural character, continuity, mass, scale, details and rhythm.
- D. Development standards applicable to the Infill Cottage housing sites are incorporated in "Appendix A: Curtis Park Village Single Family Design Guidelines" incorporated in these PUD Design Guidelines.
- E. Design Review for the Cottage In-Fill Homes within the Curtis Park Village PUD shall be per Section 17.180 of the City Code.



Cottage elevation

2.4 MULTI-FAMILY RESIDENTIAL: R4-A (PUD) Zone

Multi-family residential uses shall consist of affordable seniors housing and market rate multi-family housing. These developments shall respect the special character of Curtis Park Village as set forth in this document, in addition to any other applicable City-adopted residential design guidelines.

- 1. Heights should be limited to 45' to the top of the plate on the highest floor.
- 2. Affordable Housing for Seniors
 - A. Acts as transitional land use bridging Curtis Park market rate non-age restricted multi-family housing and commercial areas within Curtis Park Village.
 - B. Fulfills affordable housing element for Curtis Park Village
 - C. Integrates senior housing for seniors with the general community.
 - D. Provide a minimum parking ratio of 0.50 parking spaces per dwelling unit.
 - E. Provide the following minimum setbacks:



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www.pedbikeimages.org/
DanBurden



1. Front yard setback from back edge of public sidewalk: 12'-6"
2. Side yard setback: 35'-0"
3. Rear setback: 50'-0"

F. The design of the building for the affordable housing for seniors should incorporate design features and elements found in Appendix A: Single Family Housing Design Guidelines for Curtis Park Village. Elements such as roof lines, building materials, finishes, and windows will provide a residential design to the affordable senior housing building(s) that will integrate the affordable housing for seniors component into the overall Curtis Park Village residential community. It should be recognized, however, that the massing and scale of the affordable housing for seniors building(s) will be larger than single-family home structures and the design elements and materials should be appropriate to the scale, mass, and character of buildings for affordable housing for senior.



Affordable Seniors Housing

G. Design Review for the building(s) for the Affordable Housing for Seniors within the Curtis Park Village PUD shall be per Section 17.180 of the City Code.

3. Market-Rate Multi-Family Housing

- A. Provides additional pedestrian links through Curtis Park Village
- B. Acts as a buffer between Curtis Park Village single family residential and Curtis Park Village commercial areas
- C. Provides an alternative type of housing for the neighborhood
- D. Neighborhood Park will provide shared recreational, open space, and tot lot facilities
- E. Provide a parking ratio of 1.50 parking spaces per dwelling unit. This ratio includes visitor parking



- F. Achieve variety in exterior architectural forms through the use of various building materials and colors
- G. Shared common open space space may be substituted for private patios and balconies
- H. Provide the following minimum setbacks:
 - 1. Front yard setback from back edge of public sidewalk: 14'-0"
 - 2. From property line of nearest existing Curtis Park single family residential housing: 45'-0"
 - 3. From property line of nearest commercial use: 20'-0"
 - 4. Between living areas in any two multifamily buildings: 25'-0"
 - 5. Between utility rooms in any two multifamily buildings: 17'-0"
 - 6. Between carriage houses and property line of Union Pacific Railroad property: 5'-0" (sound attenuation required)
 - 7. Between 3-story multifamily residential buildings and property line of nearest new Curtis Park single family residential housing: 50'-0"
 - 8. Between carriage houses and property line of nearest new Curtis Park single family residential housing: 15'-0"
- I. The design of the buildings for the market rate multi-family housing should incorporate design features and elements found in Appendix A: Single Family Housing Design Guidelines for Curtis Park Village. Elements such as roof lines, building materials, finishes, windows, etc. will provide a residential design character to the market rate multi-family housing buildings and will integrate the multi-family housing buildings into the overall Curtis Park Village residential community. It should be recognized, however, that the massing and scale of the



Multifamily Residential

market rate multi-family housing buildings will be larger and different than those of the single-family home structures. The design elements from the Single-Family Housing Design Guidelines should be appropriate to the scale, mass, and nature of the multi-family housing buildings.

- J. Design Review for the building(s) for the Market Rate Multi-Family Housing buildings within the Curtis Park Village PUD shall be per Section 17.180 of the City Code.

2.5 NEIGHBORHOOD PARK

An approximately 6.1 acre neighborhood park is located near the center of the single-family residential area. A park preserves open space for outdoor recreation, provides for public health and safety, and is a visual amenity. Park design shall be in compliance with City of Sacramento Department of Parks and Recreation design guidelines.

3.0 LAND USE STANDARDS: COMMERCIAL AREAS

- 3.1 Site Design and Building Orientation
- 3.2 Building Design Principles & Building Forms
- 3.3 Building Details
- 3.4 Building Utilities
- 3.5 Sustainability
- 3.6 Security

3.1 SITE DESIGN AND BUILDING ORIENTATION

Site planning and design are vital in creating usable, successful outdoor spaces. The arrangement and siting of buildings, the scale and location of spaces and landscaping, and the way these elements relate to each other, will determine the vitality of the neighborhood.

It is the intent of the Curtis Park Village PUD Guidelines to encourage the following:

1. The development of individual site plans to positively relate with neighboring properties
2. Design for lively pedestrian use
3. A continuous network of safe, convenient, comfortable and interesting walkways and sidewalks
4. Pedestrian paths that connect Curtis Park Village to the surrounding neighborhoods along transportation connections
5. Carefully planned outdoor spaces with defined edges, lighting and enhanced paving
6. Spaces designed at a pedestrian scale
7. Spaces enriched with seating and landscaping, fountains, public art, and trellises
8. Plazas, courtyards, pocket parks, and outdoor cafes designed to encourage pedestrian activity
9. Destinations provided that attract people and activity



Activate the street



Create interesting spaces

10. Focal points created as placemaking landmarks
11. Whenever possible place buildings at the edge of pedestrian walks

3.2 BUILDING DESIGN PRINCIPLES AND BUILDING FORMS

Key concepts direct the feel of a neighborhood, and determine community identity, economic vitality and levels of activity and use. Individual building forms and facades influence cohesiveness, comfort and aesthetic pride and at the same time can invite usage, increase a sense of security and generate pedestrian activity.

It is the intent of the Curtis Park Village PUD Guidelines to encourage design within the following principles:

1. **Architectural Character:** Consider building type, materials, form and design, the relationship to other buildings in the neighborhood, and the overall effect on the viewer. No particular architectural theme or style is being recommended; rather a variety of styles with consideration of appropriateness for the surrounding area should be used.
2. **Continuity:** a connection or harmony among buildings in form, scale and proportions
3. **Mass:** The volume defined by a building relative to its surroundings and to its solidity and weight. Details, such as window size and placement, or open spaces in the forms, can change the visual perception of mass and make a building more interesting
4. **Scale:** the proportion of one element to another. The overall scale is determined by the size and proportions of the elements, their relationship to each other and to the building itself, as well as the spaces and buildings in view.
5. **Rhythm:** the relationship of building components, the relationship of buildings to each other, and the spaces in between, form a visual rhythm. This contributes to the excitement, comfort and charm of the area.



Doors and windows break up mass, add interest



Design at a pedestrian scale

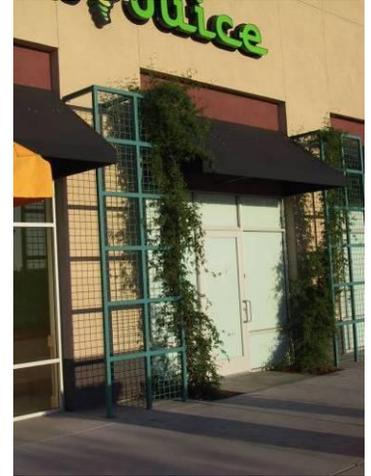


Details add visual interest and break up mass

6. 360 degree architecture: buildings, especially those on corner lots or with high visibility, should be aesthetically pleasing from all angles. Details on each side of the building complement and enhance the primary street view

7. Building Articulation

40 feet is an ideal width for storefronts. Pedestrians react positively to well-designed storefront variations at increments that do not exceed about 40 feet. This scale provides an intimacy to the neighborhood experience.



Details at back of building

8. Building Facades

- A. Clearly organize facades to have a base (bottom), street wall (middle), and cornice (top)
- B. Design proportions of façade elements to be in harmony within the context of the street
- C. Design facades to be pedestrian-friendly
- D. Design roof lines to be varied in height
- E. Allow for architectural treatments and heights of up to 45'-0". 45'-0" provides height to place housing over retail uses. This is how vibrant neighborhoods are created.



Articulate facades

9. Building Base

- A. Visually anchor the building through good base design using wainscoting or other architectural elements
- B. Provide visual interest and variety
- C. Design in a scale complementary to human scale
- D. The use of durable materials such as cast concrete, masonry and stone is encouraged



Provide visual interest and variety

10. Building Street Wall

- A. Reflect the patterns of the neighborhood
- B. Structure meaningful urban massing using good street wall design
- C. Use color and texture to provide visual interest
- D. Provide visual interest using windows, balconies, arcades, colonnades, awnings,

- reveals, step backs, moldings, and other changes in the vertical plane
- E. Provide clear-glazed fenestration on approximately 50% of each building façade that abuts a pedestrian way

11. Building Cornice

- A. Design parapets and roof elements with decorative treatments that clearly define the top of the building
- B. Design roof lines to be varied in height
- C. Consider the special articulation in the cornice above entries and building corners
- E. The use of projecting cornices, lentils, caps, and other elements are encouraged
- F. Finish the interior sides of parapets that are visible similar to the front sides



Details, such as awnings, add visual interest

12. Building Entrances

- A. Consider micro-climatic conditions such as solar orientation, wind and shadows when siting buildings and locating building entrances
- B. Orient building main entrances to streets or public spaces wherever possible or practical
- C. Multiple entrances or corner entrances are encouraged at street corners to activate both street frontages
- D. Locate sidewalk entrances to accommodate ease of pedestrian movement
- E. Articulate building entrances with canopies, awnings, special lighting and other features
- F. Locate service entrances away from pedestrian entrances



Corner entrance with awning

13. Building Corners

- A. Design buildings to be in compliance with City of Sacramento required visibility triangles
- B. Use building corners to emphasize street intersections
- C. Consider increased pedestrian activity in the design of building corners

14. Tower Elements

- A. The inclusion of tower elements is encouraged at corners and at view corridor terminuses
- B. Integrate tower elements with the lower elements of the building

15. Roofs

- A. Consider the aesthetics of rooftops as viewed from other buildings.
- B. Screen rooftop mechanical equipment from public view

16. Other Considerations

- A. Consider view corridors when siting buildings
- B. The use of corporate “chain” architecture is strongly discouraged. Design buildings for corporate tenants to express the uniqueness of location and structure



Tower elements at corners



Consider view corridor

3.3 BUILDING DETAILS

Building details enhance buildings by promoting visual vitality through the use of interesting forms, textures, patterns, colors and shadows.

It is the intent of the Curtis Park Village Planned Unit Development Guidelines to encourage the following:

1. General Guidelines

- A. Finished building materials applied to all sides of a building
- B. A consistency of style maintained by using building materials, textures, colors, roof treatment and landscaping
- C. Maintaining compatibility with exterior building materials in screening utility equipment
- D. Blank walls on visible facades are strongly discouraged



Maintain consistency of style

2. Building entrances

- A. Use of distinctive architectural elements and materials

3. Doors and windows

- A. Organized to present a unified appearance except where variations are an integral and necessary part of the exterior design

4. Transparent glazing

- A. Use of transparent glazing wherever practical
- B. Dark tinted glazing is acceptable only when required to screen views into a building
- C. The use of simulated, reflective, mirrored or dark tinted glazing is strongly discouraged



Articulate portions of building facade

5. Awnings

- A. Awnings of translucent glazing, metal or canvas
- B. The use of awnings to articulate the tops of doors and windows
- C. Lighting used to highlight awnings



Awnings articulate doors and windows

6. Wall transitions

- A. The use of columns and pilasters to articulate wall transitions is strongly encouraged

7. Cornice details

- A. Offsets and jogs in cornices and parapets
- B. Parapets of sufficient height to screen roof-mounted equipment from public view

8. Exterior Decorative Elements

- A. The use of wall pattern treatments, changes in materials, building pop-outs and recessed areas are encouraged to create shadow patterns and depth on wall surfaces
- B. Different portions of the building façade articulated to create images of buildings that have been developed over time
- C. Display cases which may be considered to add interest to large blank wall surfaces



Trellis adds interest,

9. Exterior Building Materials

- A. Use of materials, roofing, color and lighting that is compatible with other buildings within Curtis Park Village
- B. Use of materials that hold up well under public use
- C. The use of masonry, concrete and cement plaster is encouraged
- D. Provide a continuous (360 degree) treatment on all building facades.

10. Building Color

- A. Use of colors that are harmonious with other colors within Curtis Park Village
- B. The use of color is encouraged to create interest, focus, unity and compatibility for building surfaces and details
- C. Provide a continuous (360 degree) color treatment on all building facades.

11. Gutters and downspouts

- A. Painted to integrate with the building design

12. Sheet metal vents, pipe stacks and flashing

- A. Painted to match adjacent materials

3.4 BUILDING UTILITIES

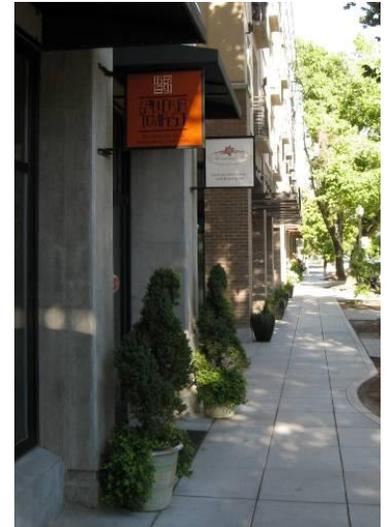
Utility service areas are building components or features that are necessary for a building's function. It is the intent of the Curtis Park Village Planned Unit Development Guidelines to encourage the following:

1. Loading and delivery areas

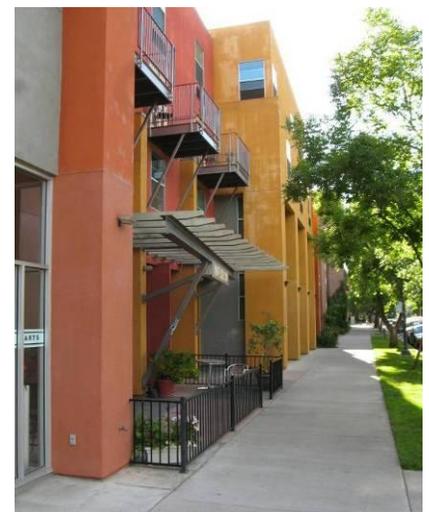
- A. Locate in less conspicuous places
- B. Delivery areas designed so as not to impede traffic flow
- C. Delivery areas clearly distinguished from parking and driveway areas

2. Recycling and trash enclosures

- A. Designed using similar materials and colors as the surrounding buildings
- B. Screened with a surrounding wall at least 6-



Use of concrete, masonry



Color and detail



Paint to integrate downspouts & gutters

- feet high and with landscaping
 - C. The use of landscaping to cover screen walls is encouraged
 - D. Gated pedestrian entrance to the enclosure located to facilitate ease of access into the enclosure
4. Electrical service panels
- A. Placed within enclosures that are architecturally integrated into the building design wherever possible
 - B. Consider placing electrical and communication equipment within buildings whenever possible
 - C. Utility company access provided as required.
5. Roof access
- A. Roof access from the interior of the building
 - B. Exterior roof access ladders are strongly discouraged
6. Rooftop equipment
- A. All roof-top equipment screened from public view if visible from the street and/or positioned to be invisible to the passerby
 - B. Mechanical equipment located below the highest vertical element of the building



Screen trash enclosures



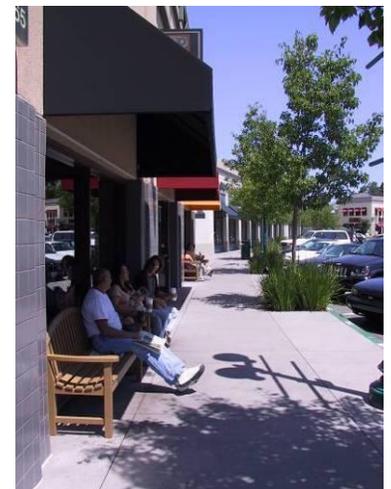
Screen with similar materials and colors

3.5 SUSTAINABILITY

As a mixed-use infill project making use of a formerly brownfield site near the heart of the city, Curtis Park Village is by its nature improving the environmental footprint of the community. The impact can be further mitigated through architectural, construction and landscaping techniques.

It is the intent of the Curtis Park Village Planned Unit Development Guidelines to encourage the following:

1. Preparation of a 'Green Development Plan' is strongly encouraged
2. Siting and neighborhood fabric



Taking advantage of shade

- A. Buildings sited to take advantage of passive solar design and to utilize natural breezes to assist heating and cooling systems when possible
 - B. Provision of pedestrian and bicycle linkages
 - C. Provision of preferred parking for vanpools, carpools, car sharing services and bicycles
3. Site improvements
- A. A storm water management plan developed for any new commercial structure
 - B. Landscaping used to shade and cool buildings and spaces and reduce the 'urban heat island' effect (the temperature increase due to development)
4. Water conservation
- A. Use of water conserving appliances and fixtures
 - B. Provision of an efficient landscape irrigation system
5. Energy efficiency
- A. All buildings shall meet or exceed Title 24 requirements
 - B. Provision of energy-efficient lighting
 - C. Utilization of daylighting strategies
 - D. The use of photovoltaic (PV) systems or PV-ready structures is encouraged
6. Utilize materials beneficial to the environment wherever possible including:
- A. The use of regional building materials and products is encouraged
 - B. Preparation of a construction waste management plan to reduce impact on landfills, emphasize recycling and reuse of materials
 - C. Use of recycled materials is encouraged
 - D. Roofing, paving and plantings designed to reduce Heat Island Effect
7. Healthy living environment



Provide pedestrian and bicycle linkages

Photo courtesy of
www.pedbikeimages.org/
DanBurden



EnergyStar appliances

<http://www.energystar.gov>



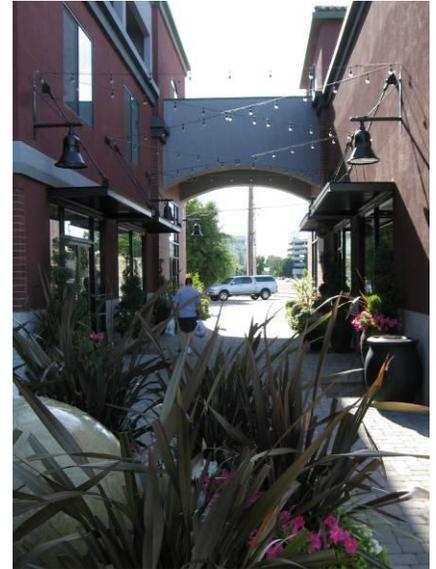
- A. Use of construction materials with no or low volatile organic compounds (VOC's)
- B. Use of healthy and energy efficient HVAC systems and water heaters

3.6 SECURITY

A lively pedestrian streetscape is an important component in security and is enhanced by a feeling of safety and comfort. Appropriately arranged spaces, entries and buildings, and proper lighting can create safer, 'defensible' spaces. Safeguard property and promote public welfare and safety by providing minimum security standards to be used in the design, construction, alteration, and maintenance of buildings and facilities and the quality of materials used therein.

It is the intent of the Curtis Park Village Planned Unit Development Guidelines to encourage the following:

1. Visual corridors established by limiting dense landscaping near structures and at the periphery of parking areas
2. Each building shall display its well lit street number in a prominent location on the street side of the building
3. Building entrances should be enlivened and well-lighted
4. Possible crime risk areas, such as automatic teller machines, should be located in highly visible and well-lighted areas
5. Provide wide-angle door viewer at all exterior doors used to the side or rear
6. Operable windows constructed so that when they are locked, they cannot be lifted from the frame
7. Plants selected, trimmed, spaced and irrigated in a way that hampers the spread of fire and minimizes available fuel
8. Visibility of parking area entrances maximized from adjacent uses and public streets



Establish visual corridors

Photos courtesy of
www.pedbikeimages.org
/DanBurden



Well lighted entrances

9. Park designed to include Crime Prevention Through Environmental Design concepts



4.0 CIRCULATION AND PARKING

- 4.1 Streetscape and Circulation
- 4.2 Bicycle and Pedestrian Circulation
- 4.3 Parking Area Design

4.1 STREETScape AND CIRCULATION

The character and feel of a community are in large part determined by its streetscape. Curtis Park Village streetscape will respect and build on the distinctive identity of the Curtis Park neighborhood while allowing for innovation and enhancement.

The streetscape should provide visual continuity, be welcoming and engaging. Streetscape elements should combine to provide an environment that is walkable, sustainable, safe and attractive.

Curtis Park Village will have an intimacy of scale and a sense of community that will invite pedestrian use and interaction. This will contribute to the richness of the Curtis Park Village experience for residents and visitors.

It is the intent of the Curtis Park Village Planned Unit Development Guidelines to encourage the following:

1. Visual continuity of streetscape elements, such as parking, planters, landscaping, sidewalks, building scale and setbacks along each street
2. Width of sidewalks consistent and abundantly wide and in conformance with the City of Sacramento standards
3. Tree canopy that is consistent and generous
4. Public areas well lighted without causing glare or light spill
5. Utilization of traffic calming curb extensions, such as bulb-outs and neck-downs, and wide, well marked crosswalks, to promote safety of pedestrian-vehicle interface and as required by City of Sacramento street standards



Photos courtesy of
www.pedbikeimages.org
/DanBurden



4.2 BICYCLE AND PEDESTRIAN CIRCULATION

The success of Curtis Park Village as a community will be strongly linked to its success as a pedestrian- and bicycle-friendly community. Creative design solutions which further enhance the walkability and connectivity of the area are strongly encouraged.

It is the intent of the Curtis Park Village Planned Unit Development Guidelines to encourage the following:

1. Pedestrians and bicyclists given the same importance as motor vehicles, and buffer them from the street where possible, according to City of Sacramento standards
2. Sidewalks and bicycle paths perceived as safe, clean and well-lit
3. Pedestrian-transit linkages intended to facilitate direct access to light rail stations and bus stops
4. Pedestrian paths and walkways
 - A. Convenient walkway access between uses and neighborhoods
 - B. Clearly defined building entry zones through the use or combined use of elements such as accent paving, planting, potted plants, and bollards
 - C. Enhanced paving, striping or other distinguishing design features to emphasize special areas
5. Sidewalks will be separated from the street using vertical curbs, decorative bollards, parked cars, and/or street trees in order to provide a sense of protection for the pedestrian per City of Sacramento standards
6. Bicycle paths
 - A. Adequate and secure bicycle parking
 - B. Bicycle storage is encouraged at parking lots and places of employment



Adequate, safe bicycle parking



- C. Clearly marked bicycle storage
- 7. Signed bicycle lanes will be located along Road A and Road C within the commercial zone per City of Sacramento standards

4.3 PARKING AREA DESIGN

Well designed parking areas can be comfortable to use, aesthetically pleasing and provide a sense of security to the user. Make parking areas easy for vehicles and pedestrians to access and navigate. Aesthetically blend parking areas into site plans. It is the intent of the Curtis Park Village Planned Unit Development Guidelines to encourage the following:

1. Parking areas should be functional and efficient
2. Parking areas designed as well-defined spaces with landscaping, decorative lighting, and pedestrian walkways
3. Generously landscaped parking areas with shade trees to meet or exceed City of Sacramento parking lot shade requirements
5. Strong pedestrian linkage to parking areas.
6. Convenient and attractive areas for bicycle parking
7. Public perception of delivery areas limited or obscured
8. One or more of the following and be used to buffer each parking area from a public sidewalk or street:
 - A A minimum 6' wide planter planted with a combination of trees and shrubs
 - B A fence shall be open with a minimum of at least 4' of landscaping in front
 - C Trellis structures with vines
 - D A site wall, maximum height of 4', with decorative finish and details.
9. Shopping cart return areas within the retail developments shall be provided as needed.



Clearly mark crosswalks



Parking area screening

10. Required Parking:

USE	MINIMUM PARKING REQUIRED
Retail Commercial Use	3.5 spaces / 1000 sq. ft.
Hotel	1 space / 3 rooms
Fitness Center	1 space / 200 sq. ft.
Dinner Theater	1 space / 200 sq. ft.
Restaurant	1 space / 3 seats
Single Family Housing	1 off street space per dwelling unit
Seniors' Housing	0.5 space / dwelling unit
Multi-Family Housing	1.5 space / dwelling unit



5.0 LANDSCAPE AND STREETScape

- 5.1 Monument Features
- 5.2 Landscape Elements Within Commercial Areas
- 5.3 Hardscape Materials and Treatments
- 5.4 Landscaping
- 5.5 Fencing and Walls
- 5.6 Private Art on Private Property

5.1 MONUMENT FEATURES

Monument features, strategically placed, provide unity throughout an entire neighborhood and create a “sense of place” within the community. Curtis Park Village shall have a hierarchy of monument features that announce a sense of arrival and create a sense of place upon entry. Scale of monumentation should be attuned with the size and use of the space. Each monument will highlight and strengthen the project’s design theme with consistent materials and landscape palette. Use landscape plantings and trees to complement project monumentation.

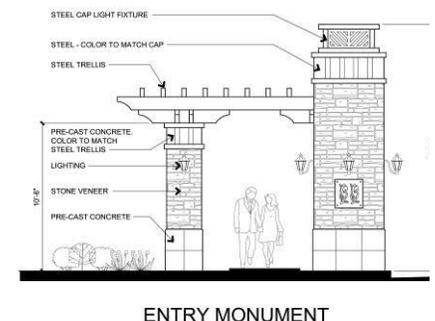
1. Major entry monument

A major entry monument feature may be placed at the entrance to Curtis Park Village on Road “A” north of the Sutterville Road/Road “A” intersection. This entry monument may include an arch and/or pylon entry monument. The intent of the major entry monument is to:

- A. Provide signature monumentation for the development that exemplifies an overriding design theme
- B. Provide a major entry monument at the major entry to the project from Sutterville Road

2. Minor entry monuments

Minor entry monument features may be placed at the entrances to residential villages, multi-family housing developments, or commercial areas within Curtis Park Village to differentiate one area from others. These entry monuments may include pylon entry monuments and should have a consistent



design throughout the project site with appropriate lettering designating the area. The intent of the minor entry monuments are to:

- A. Provide minor entry monuments as a secondary level of signature for the development and in keeping with the design theme
 - B. Make minor entry monuments smaller than the major entry monument.
 - C. Locate minor entry monuments at the transition between the single family neighborhood zone and the mixed-use neighborhood zone
3. Materials shall consist of quality durable long-lasting materials such as stone, brick, and metal to reduce the maintenance and maintainability of monument features.



5.2 LANDSCAPE ELEMENTS WITHIN COMMERCIAL AREAS

Landscaping elements may consist of seating, bollards, trash and recycling receptacles, bicycle racks, and information kiosks. The goal for the use of landscape elements is to create enjoyable outdoor spaces and to provide comfortable amenities for relaxation and leisure. Street furniture is encouraged in outdoor areas to harmonize style, design and materials with surrounding buildings.

It is the intent of the Curtis Park Village Planned Unit Development Guidelines to encourage the following:

1. Seating:
 - A. Provide a variety of seating alternatives such as benches and seat walls in outdoor spaces and walkways
 - B. Design spaces at a pedestrian scale
 - C. Enrich outdoor seating areas with landscaping, fountains, public art, and trellises
2. Bollards



Benches

- A. Decorative bollards may be used to define edges of pedestrian and vehicle interfaces
 - B. Use to protect utilities and vulnerable elements from vehicle traffic
 - C. Use of decorative bollards is encouraged whenever a bollard is necessary
3. Pedestrian trash & recycling receptacles
- A. Place near benches, at regular intervals throughout area
 - B. Details of the receptacles are to be sympathetic to the design of the buildings they serve and are to be visually pleasing within the streetscape



Decorative bollards provide security

4. Bicycle racks:
- A. Place in easily accessible locations in clear public view
 - B. Locate such that use of surrounding spaces is unimpeded
5. Newspaper stands: Newspapers are to be sold or distributed only through interior stands within commercial establishments. Outdoor newspaper stands are not allowed.



Bike racks

6. Trellises
- A. Provide trellises to define outdoor spaces and seating areas
 - B. Independently or combined with landscaping, trellises may be used to screen undesirable views
 - C. Use to contrast scale and mass of buildings
 - D. Trellises are to be constructed of durable materials to maintain the aesthetics of the trellis and reduce maintenance requirements



Trellis portal

5.3 HARDSCAPE MATERIALS AND TREATMENTS

Good paving design enhances the cohesiveness of a neighborhood and provides visual cues about the purpose of spaces. Use a hierarchy of hardscape materials, textures and treatments to distinguish vehicle, bicycle and pedestrian pathways and linkages. Landscape materials should be consistent with City of Sacramento standards.

It is the intent of the Curtis Park Village Planned Unit Development Guidelines to encourage the following:

1. Sidewalks

- A. Maintain consistency with historic sidewalk patterns of the City of Sacramento
- B. Scorelines at 3'6" apart in both directions
- C. Scorelines to create 6" strip at each side of sidewalk parallel to street
- D. Scorelines ¼" wide by ¼" deep
- E. Lamp black is to be used in the concrete mix to provide color consistency among separate pours consistent with City of Sacramento standards
- F. Specialty stamped paving associated with a building may be used to interrupt the standard sidewalk color and pattern at certain special locations, such as building entrances



Use historic Sacramento paving patterns

2. Crosswalks

- A. At selected paved crosswalks within the commercial areas of Curtis Park Village stamped colored asphaltic concrete paving or other suitable material in durability and quality may be used
- B. Paving at crosswalks enhanced to be 15' in width, with 2' wide bands at edges per City of Sacramento standards



Enhanced paving at crosswalks

3. Enhanced street paving

- A. Enhanced street paving may be used at medians with turning lanes or tapered ends where the median is too narrow to support plant life or to be efficiently irrigated

4. Skate Stops

- A. Provide skate stops on unbroken surfaces



5.4 LANDSCAPING

Thoughtful landscaping design in Curtis Park Village

should complement the long-established neighboring area, noted for its “urban forest” of shady old-growth trees and gracious plantings. Use landscaping to enhance architectural character, to define exterior spaces, and to promote a comfortable pedestrian experience.

It is the intent of the Curtis Park Village Planned Unit Development Guidelines to encourage the following:

1. Street trees

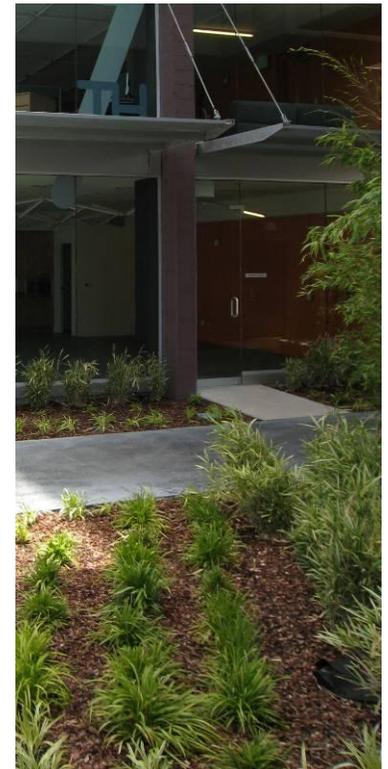
- A. A consistent network of street trees along travel corridors to establish shade, beauty, and human scale
- B. Maintain visual order by planting street trees of the same genus and species along the length of any street per City of Sacramento standards
- C. Enhance identity of individual streets by varying genus or species
- D. Select trees on a performance basis with the objective of minimizing water use, providing shade, minimizing hazardous litter, minimizing root intrusion, and providing color and contrast
- E. Select evergreen and deciduous or flowering trees in combination to create visual interest and a dynamic landscape
- F. Plant street trees at approximately 30' on center
- G. Locate trees to allow for mature and long-term growth
- H. 5' by 5' minimum size tree grates may be installed around trees adjacent to plazas, dining patios or other similar conditions



Tree grate

2. Site landscaping

- A. Select accent planting for entrances and key activity hubs
- B. Select planting to screen or separate less desirable areas from public view, such as dumpster enclosures, parking areas, storage areas, loading areas, and public utilities
- C. Plant vines where appropriate along solid walls and screen fences
- D. Avoid short-lived plants, plants susceptible to disease, and large expanses of single plant



- varieties
 - E. Group plants in high- and low-maintenance zones as well as traffic zones, and hydrozones
 - F. Landscaping may be used to bio-filtrate storm water runoff
3. Irrigation and water conservation
- A. Design irrigation systems to ensure the efficient use of water and to discourage vandalism
 - B. The use of low-water native plants is highly encouraged
 - C. Control all automatic irrigation systems with a timer
 - D. Use rain shutoff valves and moisture sensors to minimize overwatering
 - E. Use plant materials or other attractive site elements to screen irrigation controls and pedestals from view
 - F. The use of drip or bubbler-type irrigation is encouraged to promote water conservation
 - G. Use conventional spray irrigation systems with head-to-head coverage for turf areas
 - H. Cover all exposed soil in planter areas with bark mulch to reduce moisture evaporation and to help control weeds
 - I. Comply with local water use standards



Landscaping for screening



Xeriscape ideas from
cconserv.org

5.5 FENCING AND WALLS

Fences and walls provide security, privacy, visual screening and sound attenuation as well as separation between uses of differing intensities. If used in excess, fences and walls can discourage pedestrian movement between residential, commercial, and public use areas, and therefore should be used only where necessary.

It is the intent of the Curtis Park Village Planned Unit Development Guidelines to encourage the following:

1. Use of aesthetically pleasing, high-quality fencing and wall materials to complement the character of the unique areas within Curtis Park Village
2. Fencing and walls coordinated with the architecture



with which they are associated

3. Consideration of graffiti control when selecting fence and wall materials
4. Chain link fencing is not allowed.
5. All private drive gates shall be placed a maximum of 20 feet behind the right-of-way to the satisfaction of the Department of Public Works. All gates shall swing inward, not outward, and shall be equipped with a Knox Box.



5.6 PRIVATE ART ON PRIVATE PROPERTY

Art placed where it can be viewed by people can enhance the personality and character of a community. Art adds visual interest, engages community members and visitors and creates a sense of place.

It is the intent of the Curtis Park Village Planned Unit Development Guidelines to encourage the following:

1. The integration of art into the design of buildings and site.
2. Art located where it can be enjoyed by a large number of people: at sidewalks, intersections, plazas, and building entrances
 - A. Art can be created in small elements, such as tile banding on a stair riser, or in larger pieces, such as interpretive sculptures and functional art
 - B. Art can be an interactive media, such as video projections, fountains or water elements
 - C. Art can be used as a wayfinding feature to attract pedestrians to key locations such as a plaza, or can be developed as murals representing the area's unique history and people of significance
 - D. Art can take the form of decorative detail on benches, walls, stairs and entries
3. Art that is responsive to the environment (eg:



Art reflective of locale

clocks, benches, bicycle racks)

4. Use of art as a means of enhancing community understanding and history of Sacramento and the unique cultural assets and appreciation for local artists
5. Art may consist of both permanent and temporary installations
6. Coordination in the placement of art with other streetscape improvements to ensure a coherent character for the neighborhood
7. Consideration of safety and visibility in placement and size of art
8. Some qualities of art at Curtis Park Village:
 - A. Themes in art that are reflective of the area's history and character including the railroad
 - B. Advertising alone does not constitute art, though corporate logos are not excluded from appearing in art
 - C. Mass produced items may be used as part of art installations



Art reflective of local history and interests



Photo by Marjorie Schreiber Lear

6 SIGNAGE AND GRAPHICS

- 6.1 General Guidelines for Signs
- 6.2 Lighted Signs
- 6.3 Projecting Signage
- 6.4 Awning Signage
- 6.5 Window Signage

6.1 General Guidelines for Signs

Signs attract attention and provide information and directions. In Curtis Park Village signs are to enhance the visual quality of the space, have a consistent and aesthetically pleasing look, and assist wayfinding by pedestrian, bicycle and motor traffic. All signage must comply with the Sign Ordinance of the City of Sacramento.

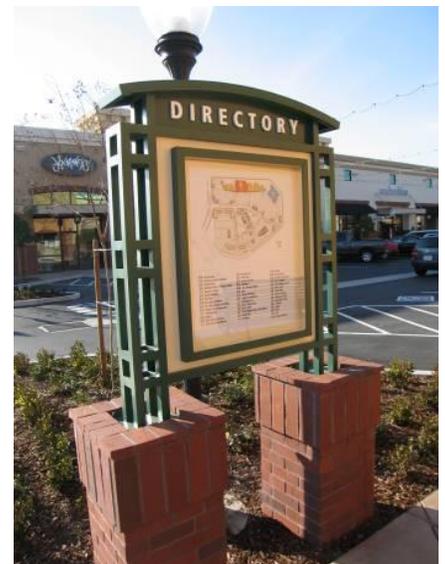
In general, signs within Curtis Park Village should:

- A. Be easy to read and decipher
- B. Be simple in design
- C. Enhance aesthetic environment through design consistency and quality
- D. Use colors that are compatible with those used throughout Curtis Park Village
- E. Highlight the unique character of the neighborhood
- F. Assist in wayfinding - the ability of a person to find his or her way to a given destination - in a safe and clear manner
- G. Be designed to be vandal-resistant
- H. Be designed so that electrical connections will not be visible on signs

6.2 Lighted Signs

Lighted signs at Curtis Park Village should be designed such that:

- A. Lighted from a concealed light source, nonintrusive to vehicular or pedestrian traffic, or to neighbors
- B. The light for a sign originates from an indirect source



- C. Light is directed at the sign from an external, shielded lamp. Internal illumination of a sign is inappropriate
- D. Halo and silhouette signs are encouraged
- E. The sign is not illuminated by fluorescent or backlighting
- F. No sign or part of a sign may move, rotate, flash or change its brightness
- G. A warm light, similar to daylight, is appropriate
- H. The use of neon and/or incandescent bulbs may be considered
- I. Use neon in limited amounts so it does not become visually obtrusive
- J. Plastic internally illuminated sign cabinets are prohibited unless the sign is a plastic “punch-through” sign
- K. Internal illumination of an entire sign panel is prohibited



Projecting signage

6.3 Projecting Signage

Project signage is a building mounted sign with the faces of the sign perpendicular to the building fascia.

- A. Projecting signage (sometimes referred to as “blade” signs) are encouraged along pedestrian paths
- B. Design with maximum dimensions of 36-inches in width by 24-inches in height
- C. Install with bottom edge of sign at approximately 8-feet above the pedestrian way



Projecting blade sign

6.4 Awning signage

A sign painted or placed on an awning, canopy, structural projection or cover over a door, window, storefront, or outdoor service area, typically non-illuminated

- A. Use a simple text or logo design that will not detract from the overall streetscape



Awning sign

6.5 Window signage

Any sign or painting on a window, intended to be viewed from the outside.

- A. Subtle in size and design
- B. Use to cover no more than 15% - 30% of display window space
- C. Attractive lettering and graphics shall be used such that window signage does not appear cluttered or non-professional



7.0 LIGHTING

- 7.1 Building Lighting
- 7.2 Parking Lot Lighting
- 7.3 Pedestrian Area Lighting
- 7.4 Sign Lighting

Well-designed outdoor lighting is an integral component in the creation of an active, walkable neighborhood for use when natural light is not sufficient. Lighting in Curtis Park Village serves to illuminate buildings, spaces and signage, to provide an adequate level of personal safety while enhancing the appearance of the area and is to be based upon sustainable neighbor-friendly principles.

It is the intent of the Curtis Park Village Planned Unit Development Guidelines to encourage the following:

1. Lighting designed to provide ambiance, safety, and security without unnecessary spillover or glare onto adjacent properties
2. Use of current energy efficient fixtures and technology
3. Adequately lighted pedestrian areas, plazas, sidewalks and building entrances to provide safety and security
4. Light pole heights scaled to complement adjacent areas
5. When security lighting is needed, lighting design is used to prevent offsite glare and light trespass
6. Addressing special circumstances such as 'areas in shadow'
7. Utilization of vandal-resistant fixtures
8. Lighting that meets IESNA standards

7.1 Building Lighting

- A. Building light fixtures that are architecturally compatible with buildings and to complement



Light fixtures complement building design



Energy efficient lighting at pedestrian scale

- the theme of the surrounding area
- B. Good lighting provided at building entrances
- C. Use architectural lighting to provide for the safety of pedestrian movement
- D. The use of lighting to wash primary walls and to highlight architectural features or detailing of building facades is encouraged
- E. No use of blinking, flashing lights, or exposed neon lighting to illuminate building facades or to outline buildings. Exception: temporary decorative lights, such as holiday lighting, may be allowed for temporary periods during the calendar year
- F. No use of wall pack lighting on facades facing streets, parking or publicly accessible areas

7.2 Parking Lot Lighting

- A. Human scaled lighting to illuminate pedestrian walkways within parking areas
- B. Light standards that do not exceed 30' in height for parking areas
- C. The ratio between maximum and minimum lighting levels shall not exceed 4:1
- D. Fully integrated and coordinated lighting and tree plans to avoid conflicts
- E. Light standards and fixtures that meet minimum City of Sacramento illumination requirements

7.3 Pedestrian Area Lighting

- A. In pedestrian areas, light fixtures compatible with other light fixtures in Curtis Park Village
- B. Building facades fronting on public streets illuminated with a minimum of 3 foot-candles
- C. Light standards for pedestrian areas shall not exceed 12' in height
- D. Decorative free-standing or bollard-type fixtures used to provide lower intensity



Parking lot lighting reflects design of neighborhood

lighting where appropriate

7.4 Sign Lighting

- A. See Section 6.0, Signage and Graphics



Cross-arms on street lights from which to suspend banners

Appendix A: Curtis Park Village Single Family Home Design Guidelines

Residential History and Neighborhood Context

It is the intention that single-family residential areas of Curtis Park Village will be reflective of the quality and design of the existing Curtis Park neighborhood that surrounds the project site to the north and east. Now one of the most mature and desirable neighborhoods in Sacramento, Curtis Park was originally developed from ranch and farm land as one of the city's first suburbs. The development of Curtis Park can be traced back to October 1887 when an auction was held to sell lots in "Highland Park", an early subdivision in the City of Sacramento that would become the Curtis Park neighborhood. Curtis Park continued to develop during the early 20th century as one of the "streetcar neighborhoods". Curtis Oaks and West Curtis Oaks in addition to the Highland Park subdivision all became part of the growing residential community of Curtis Park. In 1907 and 1909 right-of-way and land was deeded to the Western Pacific Railroad on the west side of Curtis Park neighborhood. The railroad site was to be used for the shops and railyards to serve the needs of the Western Pacific in Sacramento. This is the area that contains the 72 acres of the Curtis Park Village site.



Home designs in Curtis Park Village are intended to reflect the design and pattern of homes found in the existing Curtis Park neighborhoods. These houses tend to be predominately bungalows including single and two story homes in a variety of eclectic styles including California mission, arts and crafts, English cottage and Tudor revival, amongst others. Newer infill homes and remodel of existing homes throughout Curtis Park reflect both tradition and contemporary influences. Many infill and remodeled homes are two stories in height in response to the challenge of building larger homes on smaller lots to accommodate changing lifestyles. While cement plaster is a common exterior cladding material a variety of exterior finishes including wood lap siding, brick, and stone may also be seen with new construction generally reflective of the quality and detail of the original homes in the neighborhood.



Residential Character Area

The design to be emulated in the single-family homes within Curtis Park Village can be found in the established neighborhoods of Curtis Park and Land Park. The Residential Character Area of these design guidelines can be described as north of Sutterville Road, south of 2nd Avenue, east of Franklin Boulevard, and west of Land Park Drive. The homes within the described Residential Character Area represent a variety of eclectic architectural styles, including Victorian, Queen Ann, Craftsman, Bungalow, Sacramento highwater, California Mission, English Country Cottage, Tudor Revival, Curtis Park vernacular, and various period revival styles. Although a few streets represent a mixture of styles, many blocks and streets have some consistency of style and materials, representing the numerous small subdivisions constructed by the firms working the area at the time.



Of the many styles represented, Craftsman and Mediterranean or California Mission influences are perhaps the most common. These homes tend to be one and one-and-a-half to two stores in height with gable roofs particular to the Craftsman style and front porches with sturdy, square support columns. Common building materials include wood, brick, and plaster.

Flooding was frequent in Sacramento during the late 19th and early 20th centuries and many of the homes built in the City during that time period have high foundation with the main story a half floor above the ground level. These homes are known as Sacramento highwater homes, and can generally be found in Victorian and Bungalow styles.

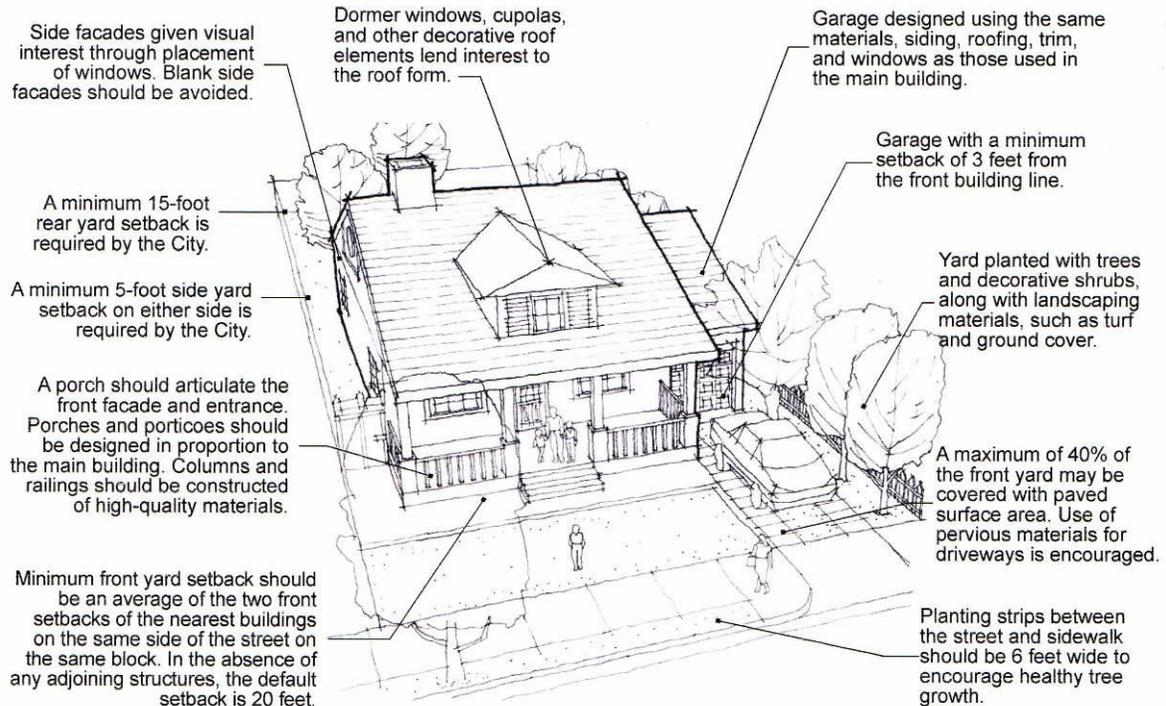


Single-Family Residential

There are many ways to design a good home. The City Development Services Department has pre-approved home plans that can aid the new home building design and reduce application time, and these plans do not exhaust the many possible design options.

The home design as shown in the graphic below displays some of the key characteristics that are recommended in the design Standard and Guidelines, and how these design features might be applied to all residential projects. This sample home is intended as an example only, since

the Guidelines are intended to be sufficiently flexible to allow for many variations in home style and design. Additional guidelines for the Residential Character Area are relevant for that area only.



Single-family Residential Home with Required and Recommended Design Features

SITE DESIGN

Site design addresses a home's location on the lot, its orientation toward the street and adjacent buildings, and its overall layout relative to the site. The site design of infill homes and additions to existing homes should emphasize respect for the context of established structures. In addition, new homes, infill homes, and additions, where appropriate, should:

- reflect the scale of existing homes on the block;
- in most cases, the home should be located toward the front of the lot with minimal setbacks;
- provide an entry facing the street or easily identifiable from the street to create a welcoming appearance and to give homes "curb appeal";



- minimize the appearance of the garage by locating it at the side or rear of the home; and
- minimize the appearance of mass in two-story home with an articulated façade.

1 Setbacks and Orientation

Design Principle

The front setback and the placement of the home on the lot shall correspond to setbacks as defined in this document.

Rationale

Setbacks may be slightly varied to create interest but should contribute to the established assemblage of homes on the block and help to form a “streetwall” on the public right-of-way. Front yard setbacks shall also meet City standards where possible. However, homes within the Residential Character Area often have front setbacks that are smaller than those required by the City.

General Design Standards and Guidelines

- 1.1 Homes should be oriented toward the front of the lot with front entries facing the street or easily identifiable from the street to encourage an active visual relation with the street.
- 1.2 Construction should generally be parallel to lot lines.
- 1.3 Infill structures should reinforce the existing rhythm of building widths and setbacks.
- 1.4 Setbacks shall be consistent with the following:

Private drives Loaded Lots (40' x 100' typical)

Front: 12.5' to 18'
Side: 5'
Corner Lot Side (45' wide typical): 10'
Rear (Garage along private drives): 3'-6' for single loaded private drives
Rear (Structure): 10'



Street Loaded Lots (50' x '1 00' typical)

Front: 12.5' to 18'
Side: 5';
Corner Lot Side (55' typical): 10' setback
Rear - 10'



Deep Street Loaded Lots (50' x '120' typical)

Front: 15' to 18'
Side: 5'
Corner Lot Side (55' typical): 10' setback
Rear: 10'

Double Lots (Private drives Loaded or Street Loaded)

Front: 12.5' to 18'
Side: 5'
Corner Lot Side: 10'
Rear (Garage along private drives): 3'-6' for single loaded private drives
Rear (Structure): 10'



Row Housing Lots (30'x 80' typical, zero lot line to minimal side setback)

Front: 5'
Side: Setback on the adjacent lot to the zero setback side yard lot shall be either 0' or 5'
Rear (Garage along private drives): 3'-6' for single loaded private drives



Cottage Lots (zero lot line to minimal side setback)

Front: 12' along public ROW, 10 ft. on internal lots
Side - 0' to 5'
Rear - 0'

Sustainability Guidelines

- 1.5 Homes should be designed and be oriented on the lot to maximize solar access on southern exposures so that such features as photovoltaic solar panels and daylight can be incorporated into the design of the home, when feasible.

2 Scale and Mass

Design Principle

Although one and one-and-one-half story homes are allowed most homes within Curtis Park Village are anticipated to be two to two-and-one-half stories in height. Homes shall be compatible with the overall scale and mass of other homes on the block.



Rationale

The scale and mass of homes within Curtis Park Village are intended to be evocative and reflect the diversity of the existing Curtis Park neighborhood. The establishment of a “streetwall” along public rights-of-way and a consistency of scale and mass are desirable in the neighborhoods of Curtis Park Village. Homes and additions to existing homes should respect each other and earlier, established homes by minimizing the appearance of building and mass through site layout and architectural design.



General Design Standards and Guidelines

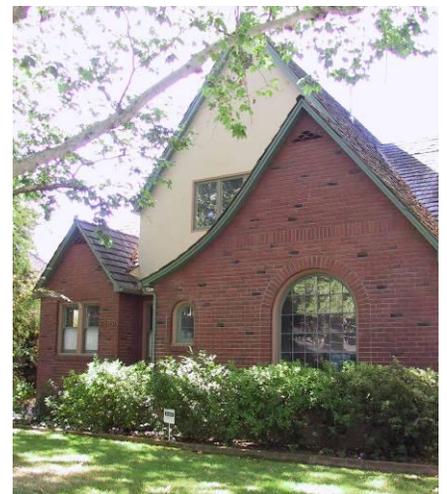
- 2.1 Homes should be oriented perpendicular to the street to minimize the appearance of mass.
- 2.2 The mass of a larger structure should be broken down into smaller components that are similar in scale to other buildings in the neighborhood.
- 2.3 The garage shall be located at the rear of the lot with either private drives access or side driveway access for front access lots.
- 2.4 Contemporary homes are typically constructed as concrete slab-on-grade. The concrete slab of the newer home should be treated in one or more of the following ways:
 - The height of the slab could be increased.
 - The soil under the slab could be graded so that it is above the grade of the surrounding yard.



- The home could be constructed with raised wooden subfloor. In this case, the home could also have a raised entry that steps down to the ground level.

General Design Standards and Guidelines for Additions

- 2.5 Additions should respect the massing, scale, and height of the primary structure.
- 2.6 Additions should not visually interfere with but should complement the original structure.
- 2.7 Additions that are taller than the original building should be located at the rear of the building so that the new addition does not visually overpower the original structure.
- 2.8 Large additions should be broken down into smaller, varied components that relate to the scale and massing of the original structure
- 2.9 Contemporary homes are typically constructed as concrete slab-on-grade. When infill homes are constructed in areas where older homes are raised above grade, the concrete slab of the newer home should be treated in one or more of the following ways:
- The height of the slab could be increased.
 - The soil under the slab could be graded so that it is above the grade of the surrounding yard.
 - The home could be constructed with raised wooden subfloor. In this case, the home could also have a raised entry that steps down to the ground level.
- 2.10 When constructing an addition beneath a home, the home should be excavated rather than raised. Visual impacts to the home should be minimized, with the design of the raised portion compatible in scale and character to the original structure.



Sustainability Guidelines

- 2.11 Solar access for daylighting and solar panels should be considered in massing design. Glazing should be located predominantly on the north and south sides of the home. Glazing on the west side of the home should be minimized unless the west side of the structure is the street side.

3 Number of Stories

Design Principle

One to three story homes are acceptable in Curtis Park Village. The structures should be designed to minimize the appearance of mass of the third story.

Rationale

Although there are many two-story homes in Curtis Park, the majority of homes are one story. Because two and three story homes have the capacity to appear out of scale with other homes on a block they should be carefully designed so as not to overwhelm adjacent one-story homes.

General Design Standards and Guidelines

- 3.1 The front of the home should not present an unbroken two or three story wall to the street. Facades should be articulated to break up the surface, add interest and minimize the appearance of mass. Articulation should include at least two of the following features:
- protruding or recessed façade surfaces
 - bow, bay, or dormer windows
 - horizontal elements such as cornices, window lintels, or horizontal bands:
 - porches or porticoes
- 3.2 All sides of the homes should be given visual interest through the careful placement of windows, while also protecting the privacy of the adjacent home. No side



Architectural details and articulated facades can help to minimize the appearance of two-story infill homes



Dormer windows and other decorative roof elements help to break up the mass of a two-story home.

of a multi-story home should present an entirely blank façade. Finishes and materials shall be consistent on all sides of the structure.

- 3.3 Porches and porticoes in multi-story homes should be one story to maintain the proportion and context of the surround homes on the block and provide an inviting entry in a pedestrian scale to the street.
- 3.4 Architectural elements, such as dormers, multiple gables, and windows, should be added to the upper stories to impose articulation and break up the façade, where feasible.
- 3.5 Duplexes and fourplexes constructed on narrow lots (40 feet wide or less) should be designed as two-story stacked units. These structures should conform to the same principles outlined above, with articulation and the addition of architectural elements.



This attached garage is recessed from the front façade of the home

4 Garages

Design Principles

The garage shall be placed at the rear of the primary residence to minimize its visibility from the street, and shall match its character and materials.

Rationale

To emphasize the front entryway and porch and minimize the prominence of the garage, the garage should be placed at the rear of the home. The garage can be placed along the side of the residential lot provided that the garage is recessed well behind the front façade of the house.



Front access to a detached garage at rear of home is common in the Residential Character Area.

General Design Standards and Guidelines

- 4.1 Garages shall conform to all relevant City of Sacramento regulation and guidelines.
- 4.2 On-site parking may be an attached or a detached garage. Attached garages should be recessed a minimum of 18 feet behind the front façade (the main front wall) of the home.

- 4.3 Detached garages are recommended when feasible. If private drives access is available, detached garages should be placed in the rear yard. When private drives access is not feasible, front access is acceptable.
- 4.4 Garage design, siding, roofing, trim, and window materials should match the material used on the home.
- 4.5 City Municipal Code permits a carport if 50 percent or more of the dwelling on the block do not have enclosed parking. The carport should be designed to the same standard as an enclosed garage, with similar roofing material and roof pitch.
- 4.6 Many older homes in Curtis Park have Porte-cocheres along the side of the home with detached garages at the rear of the lot. Porte-cocheres are allowed provided they meet City Code requirements. The Porte-cochere should be designed to the same standard as the residential structure or a front porch and is to be compatible with the overall design of the structure.



Reduced alley aprons decrease pavement runoff.

Sustainability Guidelines

- 4.7 Single-car garages or tandem garages are encouraged to reduce the extent of paved driveway areas.
- 4.8 Reduced private drives aprons are encouraged to decrease pavement runoff.

5 Parking

Design Principle

On-site parking shall be located at the side or rear of the lot, whenever feasible, to minimize parking along the façade facing the street and afford an unobstructed and attractive view of the home.

Rationale



A shared driveway minimizes the amount of space taken up by parking.

Many homes have been designed with extensive driveway paving and parking at the front of the home. Infill development should place driveways and parking pads toward the side of the lot so that the front yard is visually attractive and can be landscaped.

General Design Standards and Guidelines

- 5.2 Unless specifically required in the Curtis Park Village PUD Design Guidelines, parking shall conform to all relevant City of Sacramento regulations and guidelines.
- 5.3 Private drives access is preferred in areas where it is feasible within Curtis Park Village.
- 5.4 Concrete is the typical residential driveway paving materials\ . Alternative driveway paving surfaces, such as mortared brick or concrete pavers, and tinted concrete, are encouraged to minimize the appearance of monotonous paved front yards. Permeable materials, such as pavers, cobblestone, or similar treatments, are also recommended paving materials for driveways. Driveway strips with turf between the strips are another desirable alternative. Alternative treatments must be approved by the relevant reviewing agencies per City development standards for paving surfaces.
- 5.5 Reduced parking requirements - one on-site parking space required; not necessary to have a garage.



ARCHITECTURE

Architecture addresses the built form of the home, along with its detailing. Homes and additions to homes should respect the architectural style of established homes on the block, while also reflecting contemporary construction methods.

Curtis Park has experienced decades of infill development which lends interest and variety to the neighborhood. The new homes in Curtis Park Village can continue this trend by bringing fresh new style while still emphasizing respect for the overall scale of the existing Curtis Park neighborhood.

All architectural elements should be constructed of high-quality materials to promote longevity and a pleasing appearance. Variety of design and materials is desirable within the single-family home area of Curtis Park Village if complementary to the existing Curtis Park neighborhood context.

6 Architectural Character and Detailing

Design Principle

Homes shall be designed in a cohesive architectural style that complements the best examples of existing residential development in the Curtis Park neighborhood.

Rationale

Structures that are compatible with the existing Curtis Park neighborhood will contribute to a sense of place and add to the character of the area helping to knit the railyards back into the urban environment and the neighborhood. Use of stylistically cohesive, character-defining features, such as porches, columns, balustrades, brackets, rafters, and decorative trim enhances visual compatibility.

General Design standards and Guidelines

- 6.1 The architectural design should complement the architectural styles of the exiting homes in the Curtis Park neighborhood.
- 6.2 New stylistic interpretations of traditional architecture are encouraged. The plans should follow fundamental design principles without copying them. Architectural features and detailing should be proportional to the scale of the home, as well as to other homes on the block or a similar architectural style.
- 6.3 Additions should be designed with architectural details that are similar to those of the existing structure.
- 6.4 Individual elements in a structure should be consistent with that structure's overall design or style.

- 6.5 A contemporary sundeck may be included in the design of the structure provided that it does not visually detract from the main building and does not interfere with the privacy of adjacent residences. The scale, material, color, and detail of the deck should be compatible with the building.
- 6.6 All elevations should be given equal design treatment and architectural consideration including the use of consistent materials on all facades of the structure.

7 Roof Styles

Design Principle

The design of a roof shall correspond to the prevailing designs of roofs on homes in the existing Curtis Park neighborhood and the roof design shall be compatible with the overall design and architectural style of the home. The design of the roof on additions and renovations shall correspond to the roof style and pitch of the existing structure.

Rationale

The pitch, style, and orientation of the roof on a home should be similar but not necessarily identical to the roof styles of the surrounding homes on the block. Roofs pitches and materials should be complementary from home to home but should also be in keeping with the architectural style and design of the individual home. However, the pitch, style, and orientation of the roof on a renovation or addition should be identical to that of the existing home. Any crossing gables should match the established pitch and style of the existing roof.

General Design Standards and Guidelines

- 7.1 The roof pitch and overhang on structures should be compatible with the architectural style of the home.
- 7.2 Whenever possible the roof pitch and overhang should be similar to those of existing homes on the block and similar to existing homes in Curtis Park.



Gable roof with front-facing gables



Gable roof with side-facing gables and shed-roof dormer windows



Gable roof with clipped end

- 7.3 Flat roofs are discouraged and should only be used when appropriate for the architectural style of the structure.
- 7.4 Infill homes should respect the primary gable orientation of the majority of existing homes on the block.
- 7.5 The roof forms and slope of additions should be similar to those of the original structure. The roof of additions should be subordinate to that of the primary building. Gable, hip, and shed roofs are appropriate for additions.
- 7.6 A dormer should be compatible with the scale of the primary structure. The number and size of dormers should not be visually overwhelming. Dormers should be placed below the ridgeline of the primary roof.
- 7.7 Roof overhang ranging from 18 to 36 inches are encouraged to promote window shading and building longevity when appropriate to the architectural design of the home.



Hip roof with hip dormer



Steeply pitched front-facing gable roof with just a hint of insouciance

8 Entry Features

Design Principle

Homes shall have an entry feature such as a porch, overhang feature, or stoop that faces the street and defines the entry to the home from the street.

Rationale

Entry features accent the front façade of a home and add visual interest. Entry features and their components, such as columns and steps, should be proportional to the overall scale of the home.

Porches and other entry features are common architectural elements in homes in Curtis Park. Porch elements in these older homes differ greatly, ranging from solid, square columns of Craftsman homes, to the deep recesses and covered walkways of California Mission



Revival homes, to the delicate turned balusters in Queen Anne homes. Entry features should be consistent in design and scale with the architectural style of the home and the predominant style of the block while providing diversity and interest to the home and the block from the street.

General Design Standards and Guidelines

- 8.1 Entry features are encouraged on all homes.
- 8.2 Entry porches and porticoes in two and three story homes should be one story to minimize the appearance of bulk and offer an appropriately scaled pedestrian entry to the home.
- 8.3 Entry features should be built to a minimum depth of 6 feet from the front of the entry feature to the front façade of the home: however, shallower entry features will be considered on a case-by-case basis.
- 8.4 The scale and style of porch and portico elements should be consistent with the scale and style of the home.
- 8.5 Porches and portico columns should be given some form of detailing, such as a defined plinth and capital, when appropriate to the architectural style of the home.
- 8.6 Porch columns and railings should be constructed of high-quality materials that complement the materials used in the overall exterior of the home.



9 Doors

Design Principle

Doors shall be made of high-quality materials and include decorative elements such as raised panels, sidelights, and transoms that are appropriate to the overall design of the home.

Rationale

Doors are an important architectural feature that offers security and visual appeal. For this reason, doors should



be made of high-quality materials that protect the home, while also offering aesthetic appeal through decorative elements that correspond to the style of the home.

General Design Standards and Guidelines

- 9.1 Doors are character-defining features of a home and should be appropriately designed to contribute to the overall composition of the house.
- 9.2 Doors should not be flat surfaces, but should include raised panels, glass, or some other form of detailing and articulation appropriate to the architectural style of the home.
- 9.3 Doors should be of high-quality material, such as metal or solid-core wood.
- 9.4 Doors may be metal or wood-frame. High-quality metal framing can afford enhanced security and fire protection and should be considered. Whether wood or metal door framing should be slightly recessed or extended to lend interest and definition to the entry.
- 9.5 Horizontal sliding doors are highly discouraged on the public side(s) of the home.



10 Windows

Design Principle

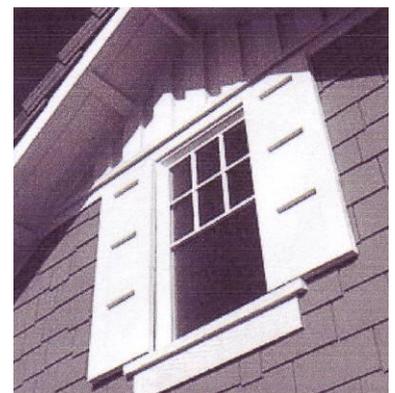
Windows shall be constructed of high-quality materials and designed to complement the style of the home.

Rationale

High-quality materials and construction techniques ensure the longevity of windows and enhance their aesthetic appeal.

General Design Standards and Guidelines

- 10.1 Windows should complement the style of the home.
- 10.2 Avoid horizontal sliding windows. Single or double hung windows as well as casement windows are



Window detailing, such as shutters, adds interest

encouraged.

10.3 Windows with multiple panes provide interest and definition to a home's façade and are encouraged.

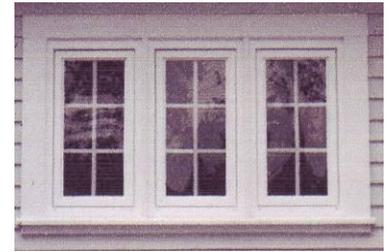
10.4 Window frames, sash, trim, and sills may be wood, vinyl, or a paintable fiberglass composite.

10.5 A consistent window treatment should be used on all sides of the building.

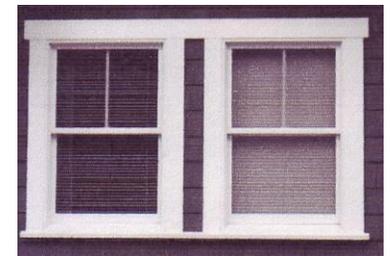
10.6 Reflective or tinted glass and opaque plastic skylights are discouraged.

10.7 Windows should have decorative trim and projecting sills consistent with the architectural style of the home.

10.8 Windows used in additions and renovations should be similar to those in the primary structure.



Casement window with wooden frame and sills



Single-hung windows with wooden frame

Sustainability Guidelines

10.9 The use of insulating or energy efficient glazing is encouraged to increase energy efficiency.

10.10 Prismatic glazing is encouraged to increase the energy efficiency of skylights.

10.11 Daylighting should be incorporated into the architectural design of the home, where feasible, to increase energy efficiency.



11 Siding

Design Principle

The siding used on a home or addition shall be durable, consistent with the style and character of the home, and complement the siding material used on other homes on the block.

Rationale

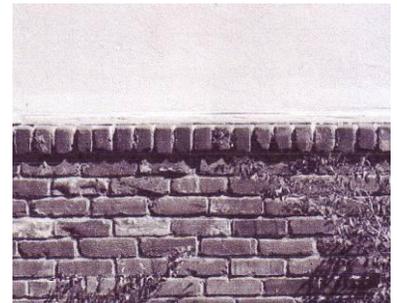
Siding should not only complement the style of a new

home but should be consistent with siding materials commonly used on other homes in the neighborhood and consistent with the architectural style of the structure to avoid appearing out of context. Siding materials in additions and renovations should match the siding on the existing home to the greatest extent possible.

Common siding materials used on homes in Curtis Park include brick, stone, wood lap siding, wood shingles, and cement plaster. The predominant material depends on the predominant architectural style of the home.

General Design Standards and Guidelines

- 11.1 Wood lap siding, wood shingles, brick, stone, and cement plaster (stucco) are acceptable materials. The siding should always reflect the architectural style of the house and be appropriate for the design.
- 11.2 Wood lap siding should be applied horizontally and should be similar in scale, proportion, texture, and finish used on other homes on the block and appropriate to the architectural style of the home.
- 11.3 Several lap siding materials are available with some recommended over others. Lap siding made of wood or cement fiber is recommended. Lap siding of vinyl, grooved plywood, and aluminum are not recommended.
- 11.4 Cement plaster (stucco) must be smooth or imperfect smooth troweled texture. Spray-on stucco is not allowed and foam trim sprayed with stucco should be avoided.
- 11.5 The use of two materials, with one employed as wainscoting, can often add to the interest of the home. Change of materials in upper gables is recommended to break-up the overall mass of the home.
- 11.6 Avoid highly reflective metals, glass, plastic, and vinyl.
- 11.7 The color, texture, bonding pattern, and grout profile of brick should be similar to established uses of brick on the buildings in the Residential Character



Brick wainscoting on smooth stucco



Wood lap siding

Area.

12 Roofing

Design Principle

Roofing on homes in Curtis Park Village shall be durable and complement the architectural style of the home. Roofing on an addition or renovation shall be durable and complement the roofing on the existing home.

Rationale

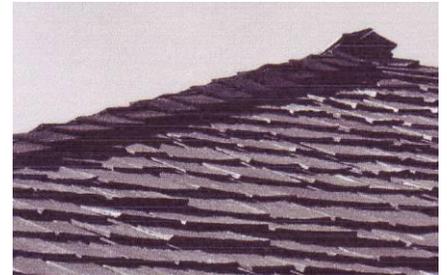
Roofing materials should be durable to ensure their attractiveness and continued functionality for many years. Roofing materials should also be suitable for context. For example, high-quality metal roofing may be appropriate in some rural or resort settings but is uncommon in the Curtis Park neighborhood and therefore maybe considered inappropriate.



Laminated dimensional shingles

General Design Standards and Guidelines

- 12.1 Roofing materials must have a minimum 30 year guarantee. Roofing with a 40 year guarantee or greater is encouraged.
- 12.2 The color and materials used for roofing should complement the color and architectural style of the home. Accent colors may be used but they should not overwhelm the home or clash with other homes on the block.
- 12.3 The following materials are recommended: laminated dimensional (asphalt) shingles, wood shingles/shakes, laminated dimensional fiberglass shingles, lightweight concrete shingles, terra cotta tile or lightweight concrete tile, or slate shingles.
- 12.4 Metal roofing is typically inappropriate and is discouraged.
- 12.5 Composition shingles should only be rolled over side barge boards when appropriate to the overall design of the structure.



Wood Shakes



Lightweight concrete shingles

- 12.6 When installing gutters rafter tails should only be trimmed when the rafter tail design is not an architectural feature specific to the overall design of the structure.
- 12.7 Ogee gutters should be used on structures with a traditional style of architecture. Fascia gutters are more appropriate to ranch style and more contemporary homes.



Tile shingles

Sustainability Guidelines

- 12.8 Photovoltaic solar panels or solar shingles such as “solar slate” are encouraged to reduce the home’s use of energy from conventional sources.
- 12.9 Homeowners are encouraged to consider roofing options that include recycled content.
- 12.10 The use of “cool roof” options, including lighter colored roofing and reflective coatings, is encouraged to achieve energy efficiency.

13 Lighting and Addresses

Design Principle

Light fixtures shall be consistent with the architectural style of the home and shall provide adequate illumination of the front entry and addresses so that both are clearly visible from the street.

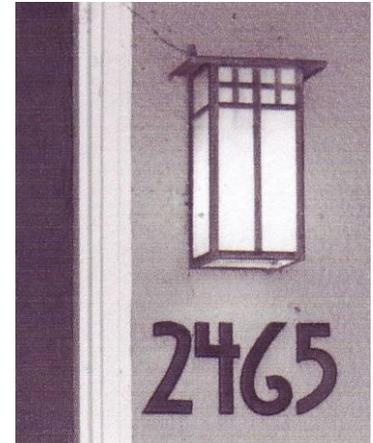
Rationale

To assist emergency vehicles and contribute to the safety of the home, address lettering should be affixed near the door and should be large enough to be seen from the street. Lighting fixtures should be adequate to illuminate the addresses and the front entryway to the home.

General Design Standards and Guidelines

- 13.1 Light contributes to the security of the home and is required for the front entryway, walkways, and garage area. Recessed entryways should be clearly lit.

- 13.2 Lighting fixtures should be designed for exterior use and should be weather resistant.
- 13.3 The address should be illuminated and clearly visible at night.
- 13.4 The address numbers should be 4 to 8 inches high.
- 13.5 The preferred location to display the address is affixed to the front of the home, adjacent to the front door. If structural considerations preclude affixing the address adjacent to the front door then the address may be attached on the front of the home as long as it is still clearly visible from the street and illuminated at night.
- 13.6 Lighting fixtures should be directed away from adjacent areas to minimize light pollution.
- 13.7 Light fixtures and address numbers style and design are to be consistent with the architectural style of the house.



Addresses should be illuminated and easily visible from the street

Sustainability Guidelines

- 13.8 Compact fluorescent bulbs and photocell sensors are encouraged to achieve energy efficiency.

SITE ELEMENTS

Site elements include those features that are auxiliary to the home, such as landscaping, fencing, and paving. Site elements are typically used to enhance the appearance and functionality of the home.

High-quality site elements can increase the beauty and value of the home and, when carefully selected, can also contribute to the visual continuity of the street and the neighborhood.



Mature trees add beauty and shade

14 Landscaping

Design Principle

Landscaping shall be used around the home to positively contribute to its' appearance and give a sense of visual continuity along the street. The front yard shall be planted with landscaping materials that may include a mixture of turf, groundcover, and decorative shrubs.

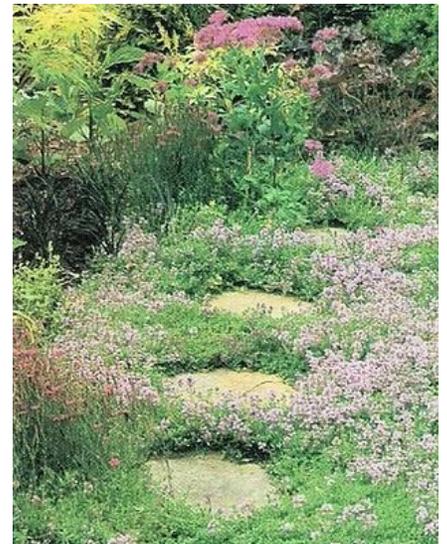
Rationale

A variety of landscaping plants and materials can contribute to a positive sense of place in a neighborhood. Trees provide shade, reduce energy consumption in the summer, help to filter air pollution, and provide visual interest along the street. The neighborhoods surrounding Curtis Park Village have many mature trees that contribute to the positive character of the area. Curtis Park Village will include planting of many trees that, in time, will reflect the surrounding neighborhoods and contribute to the urban forest of the City of Sacramento.



General Design Standards and Guidelines

- 14.1 Landscaping shall conform to all relevant City regulations and guidelines, including City Code Section 17.68.010, "Landscaping Requirements" which states that a maximum of 40 percent of the front yard setback may be paved for parking and driveways with an additional 10 percent for walkways or uncovered patio use. The remaining portion of the yard must be landscaped.
- 14.2 Alternative to turf, such as groundcover that can tolerate foot traffic or "no-mow" and native grasses, are encouraged.
- 14.3 Bare soil should be planted or mulched with bark, stone, or other suitable materials to avoid unnecessary runoff.
- 14.4 A minimum of two trees should be planted in the front yard. A minimum of three trees should be planted at homes on corner lots where the size of the yard permits full canopy growth.
- 14.5 Street trees are to be provided at a maximum of 30 feet apart in the street tree planter between the curb and the sidewalk. Consult the City Urban Forest



Groundcover can provide a low-water alternative to turf



Thymus species provide another groundcover alternative to turf

Division for questions regarding the care of street trees. Private tree services are available for consultation before trimming or removal of mature trees on private lots.

14.6 Refer to the following lists for more information about recommended species:

- **Sacramento Tree Foundation**
www.sactree.com/treeinfor/treesWeOffer.html
- **Municipal Utility District (SMUD)**
www.smud.org/residential/saving/trees/index.html
- **City of Sacramento Department of Parks and Recreation**
www.cityofsacramento/parksandrecreation/urbanforest/index.html

14.7 Street trees and plant species should be suitable for the Sacramento climate. Low-water landscaping materials are encouraged to conserve water.

14.8 Trees species should be selected so that the canopy of each tree at full growth can be accommodated by the site. A variety of tree species representing a range of sizes will contribute to the visual interest of the yard and is recommended.

14.9 Homeowners are particularly encouraged to plant deciduous shade trees and shrubs that shade the east, south, and west sides of the home to minimize solar heat gain and increase energy efficiency. Shade trees should be planted to shade paved areas to reduce heat transmission and energy consumption.



Trees can offer shade, reducing cooling costs during hot summer months



Well cared-for mature trees can add significantly to the beauty of a home

15 Irrigation

Design Principle

Irrigation is essential to maintain the health and beauty of a home's landscaping.

Rationale

The seasonal extremes of the Sacramento climate make regular irrigation of planted areas mandatory to maintain the integrity of landscaping. Automatic irrigation ensures regular and consistent watering and promotes healthy landscaping.



A conventional spray system is most effective for turf and groundcover.

General Design Standards and Guidelines

- 15.1 An automatic irrigation system should be installed in the front yard to provide consistent coverage of all planted areas. A home on a corner lot should have an automatic irrigation system that covers the yard fronting both streets. Automatic controllers with rain shut-off valves provide greater water conservation.
- 15.2 The homeowner is responsible for the irrigation of and the maintenance of the irrigation system and landscaping in the front planter strip between the curb and the sidewalk along the street.
- 15.3 Turf and groundcover are more effectively irrigated with a conventional spray system. Head-to-head spray coverage is recommended. Avoid overspray onto sidewalks and adjacent properties.
- 15.4 A drip irrigation system is recommended for shrubs and trees to provide deeper, more even watering. Drip irrigation also permits greater water conservation than a conventional spray system.
- 15.5 Irrigation controls must be screened from view by landscaping or other attractive site materials.

16 Fencing

Design Principle

Fencing must be of high quality materials that are consistent with the style of the home to enhance the overall character of the home and contribute to the positive appearance of the neighborhood.



Wooden side yard fence

Rationale

Fencing should be selected for its decorative qualities and should complement the character of the home as well as the overall character of the neighborhood.

General Design Standards and Guidelines

- 16.1 Fencing shall be located and constructed in conformance with the Sacramento City Code Section 15.156, "Fences", and Section 17.76, "Wall, Fence, and Gate Requirements".
- 16.2 Fencing must allow unobstructed visibility of the front entrance and, in the case of homes on corner lots, the front and any side entrances.
- 16.3 Front yard fencing should have a minimum of 50 percent transparency.
- 16.4 The style, materials, and color of the fencing should complement the style, materials, and color of the home.
- 16.5 High-quality materials, including wood, metal, cement plaster (stucco), and some forms of appropriately designed vinyl fencing, are acceptable fencing materials. Cement plaster must be smooth or imperfect smooth texture consistent with the design of the house.
- 16.6 Chain link fencing is not allowed as a front yard fence.
- 16.7 The use of chlorine-based vinyl fencing is discouraged.

17 Paving/Hardscaping Surfaces

Design Principles

The paving materials selected shall contribute to the overall appearance of the home. Impervious paving surfaces shall be minimized and limited to the driveway, walkways, and patios.



Brick

Rationale

Large areas of impervious paving surfaces made up of materials such as concrete and asphalt should be minimized at the front of the home. Instead, alternatives surfaces as brick, stone, concrete pavers, and patterned concrete should be used as appropriate. Some of these alternative forms of paving can offer the added benefit of minimizing storm water runoff and the need for supplementary irrigation, as water is able to percolate down through the spaces between paving units.



Flagstone mortared on concrete

General Design Standards and Guidelines

- 17.1 Paved areas shall not exceed those defined by City Code Section 17.68.010, "Landscaping Requirements", which states that a maximum of 40 percent of the front yard setback may be paved for parking and driveways, with an additional 10 percent for walkways or uncovered patio use.
- 17.2 Alternative paving surfaces such as concrete pavers, brick, or stone are encouraged for driveway surfaces to reduce the appearance of large, paved areas.
- 17.3 Alternative paving surfaces that help to keep Stormwater Runoff on-site are encouraged.



Stone with turf

18 Utilities and Storage Facilities

Design Principle

The visibility of utilities and storage facilities shall be minimized by placing them at the side or rear of the home and screening them from view from the street. When utility equipment must be located at the front of the home every attempt shall be made to minimize the visual intrusion of the equipment into the home, yard, and street.

Rationale

Utilities and service features are less attractive but necessary parts of the home. These features should be placed at the side or rear of the home and screened by fences and landscaping. Private drives access can facilitate placement of and access to these features at the

rear of the home whenever possible or appropriate.

General Design Standards and Guidelines

- 18.1 Trash receptacles should be placed in the side or rear yard and adequately screened by landscaping or a side yard fence.
- 18.2 Storage sheds should be located in the rear yard. Placement in the side yard is acceptable if the shed is adequately screened from the street by landscaping or a side yard fence.
- 18.3 Accessory structures should be similar in character and materials to the main building but subordinate in massing, scale, and height.
- 18.4 Antennae should be mounted at the rear of the home. Satellite dishes should be mounted on the home to minimize their visibility from neighbors or the public right-of-way.
- 18.5 Heating and cooling units should not be roof-mounted or placed at the front the home. Heating and cooling units should be placed in the attic or at the side or rear of the home and screened by a side yard fence or landscaping. Solar panels do not need to be screened.
- 18.6 Where feasible heating, ventilation, and air condition units should be placed on the north side of the primary structure or garage (if not the street side) to shade the units and minimize energy consumption.

19 Access Ramps

Design principle

Ramps that provide access to the front or side of the home shall be safe and designed to match the style of the home, and constructed of durable materials that complement those used on the home.

Rationale

Ramps that provide universal access to single-family

homes should be designed so that they look like they are a part of the home to the greatest extent possible. The ramp should be designed to minimize its size and bulk without compromising safety and ease of access. Materials used should complement those used on the home, i.e., a concrete ramp with brick facing could be used on a brick home, while a wooden ramp might be more suitable for a home with wood lap siding.

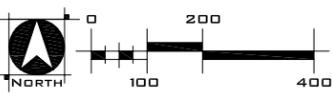
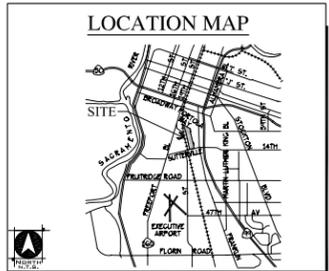
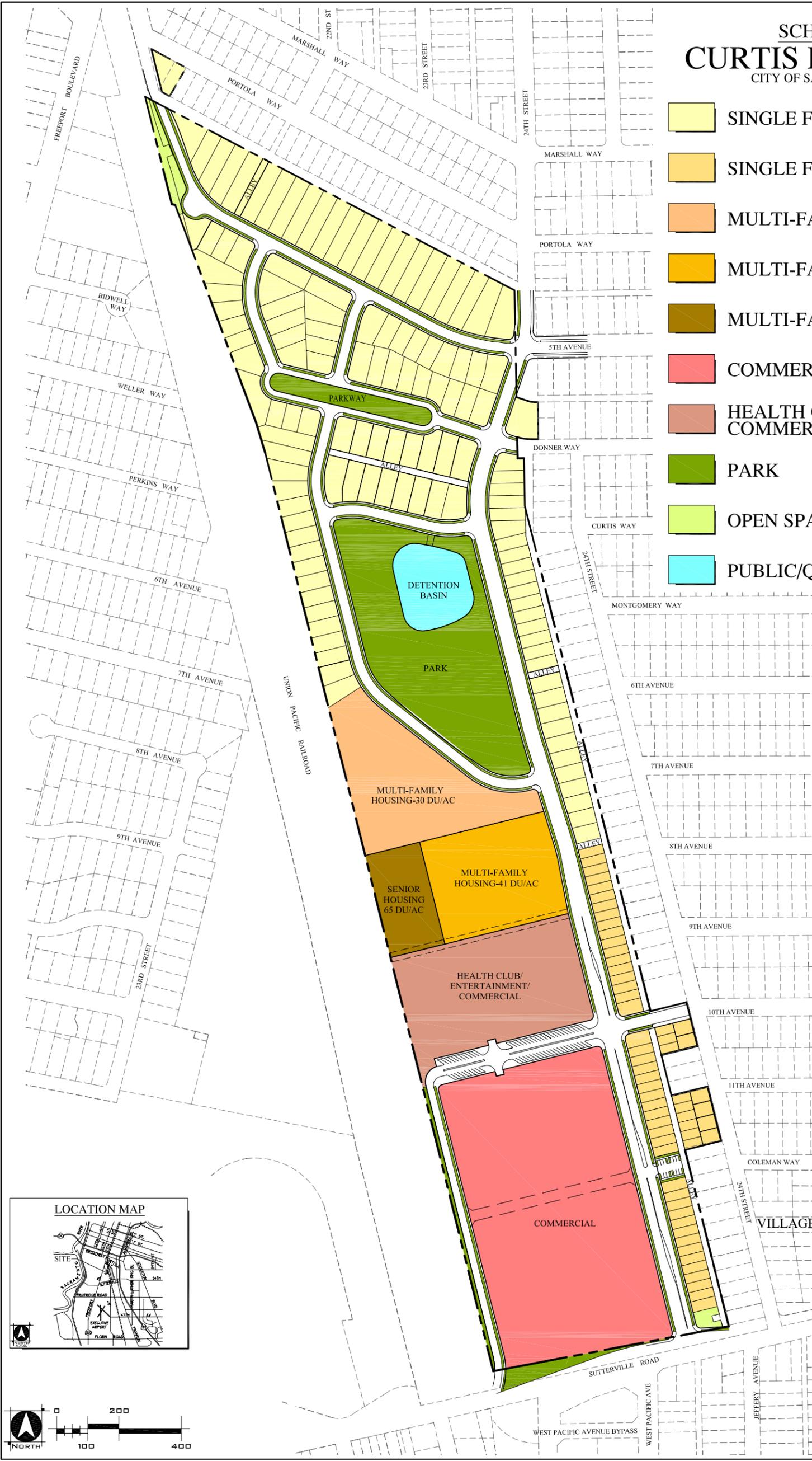
Design Guidelines

- 19.1 Any ramp providing access to a single-family residence shall be designed to meet standards found in the Americans with Disabilities Act, available for review at www.ada.gov/stdspdf.htm. Under ADA standards a ramp shall be designed with a slope ranging between 1:12 and 1:20 (5 to 8 percent slope) and shall include 60 inch landings at the top and bottom of any run. A handrail shall be included on all ramps higher than 6 inches.
- 19.2 The ramp should be designed so that it does not detract from existing architectural elements at the front of the home. The specific location and angle of the ramp may vary, depending on the design of the home and its location on the lot.
- 19.3 Ramps should be constructed of sturdy, long-lasting materials such as wood, brick, or concrete. Ramp material(s) should complement those used on the home. Where appropriate, facing materials used on the home may be affixed to the side of the ramp.
- 19.4 Modular aluminum ramps at the front of the home are discouraged.

APPENDIX F

SCHEMATIC PLAN
CURTIS PARK VILLAGE
 CITY OF SACRAMENTO, CALIFORNIA
 DECEMBER 16, 2009

-  SINGLE FAMILY - TRADITIONAL
-  SINGLE FAMILY - BROWNSTONES
-  MULTI-FAMILY - 30 DU/AC.
-  MULTI-FAMILY - 41 DU/AC.
-  MULTI-FAMILY - SENIOR 65 DU/AC.
-  COMMERCIAL
-  HEALTH CLUB / ENTERTAINMENT/
COMMERCIAL
-  PARK
-  OPEN SPACE
-  PUBLIC/QUASI-PUBLIC



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APPENDIX G

**TREE RESOURCES ASSESSMENT
FOR THE**

**±71.7-ACRE CURTIS PARK VILLAGE STUDY
AREA**

CITY OF SACRAMENTO, SACRAMENTO COUNTY, CALIFORNIA



Prepared For:

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FEBRUARY 6, 2008

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TREE RESOURCES ASSESSMENT FOR THE ±71.7-ACRE CURTIS PARK VILLAGE STUDY AREA

INTRODUCTION

North Fork Associates (NFA) conducted a tree resources assessment for the ±71.7-acre Curtis Park Village study area located in City of Sacramento, Sacramento County, California. The study area is located between Highway 99 on the east and Sacramento City College on the west, in the northwestern corner of the intersection between Sutterville Road and 24th Street. This location corresponds to Section 13 and 18 of Township 8 North and Range 4 and 5 East on the Sacramento East, California USGS quadrangle (Figure 1). The latitude and longitude for the approximate center of the study area are 38°32'43" North and 121°29'04" West.

The study area is located at an elevation between approximately 10 and 28 feet. The study area is an abandoned rail yard previously owned by Union Pacific Railroad. The study area is bounded to the north by Portola Way, to the east by 24th Street, to the west by Union Pacific Railroad, and by Sutterville Road to the south (Figure 2). Adjacent land uses consist of Sacramento City College to the west, residential to the north and east, and commercial/light industrial to the south.

REGULATORY FRAMEWORK

According to the Sacramento City Code (Chapter 12.64), which constitutes the City's tree ordinance, a heritage tree is defined as: 1) any tree species with a circumference of one hundred (100) inches (approximately 32 inches diameter at breast height) or greater, which is of good quality in terms of health and vigor, 2) any native *Quercus* species, *Aesculus californica*, or *Platanus racemosa* having either a single trunk circumference of thirty-six (36) inches (approximately 11.5 inches diameter at breast height) or greater, or a multi-trunk circumference totaling thirty-six (36) inches or greater, 3) any tree species with a circumference of thirty-six (36) inches or greater in a riparian zone, or 4) any tree, grove of trees or woodland trees designated by resolution of the city council to be of special historical or environmental value or significant community benefit.

METHODS

Field Assessment

Connor Arborist Services conducted a tree survey in the study area and produced a tree inventory report for the Curtis Park Village study area. On February 1, 2008, North Fork Associates conducted a field site visit to collect additional information to support the tree resource assessment report. During the field site visit, North Fork Associates verified data presented in the Connor Arborist report, located and inventoried four additional heritage trees, assessed habitat, and photo-documented the site. Several of the trees assessed were sycamores that had not been identified to species in the Connor

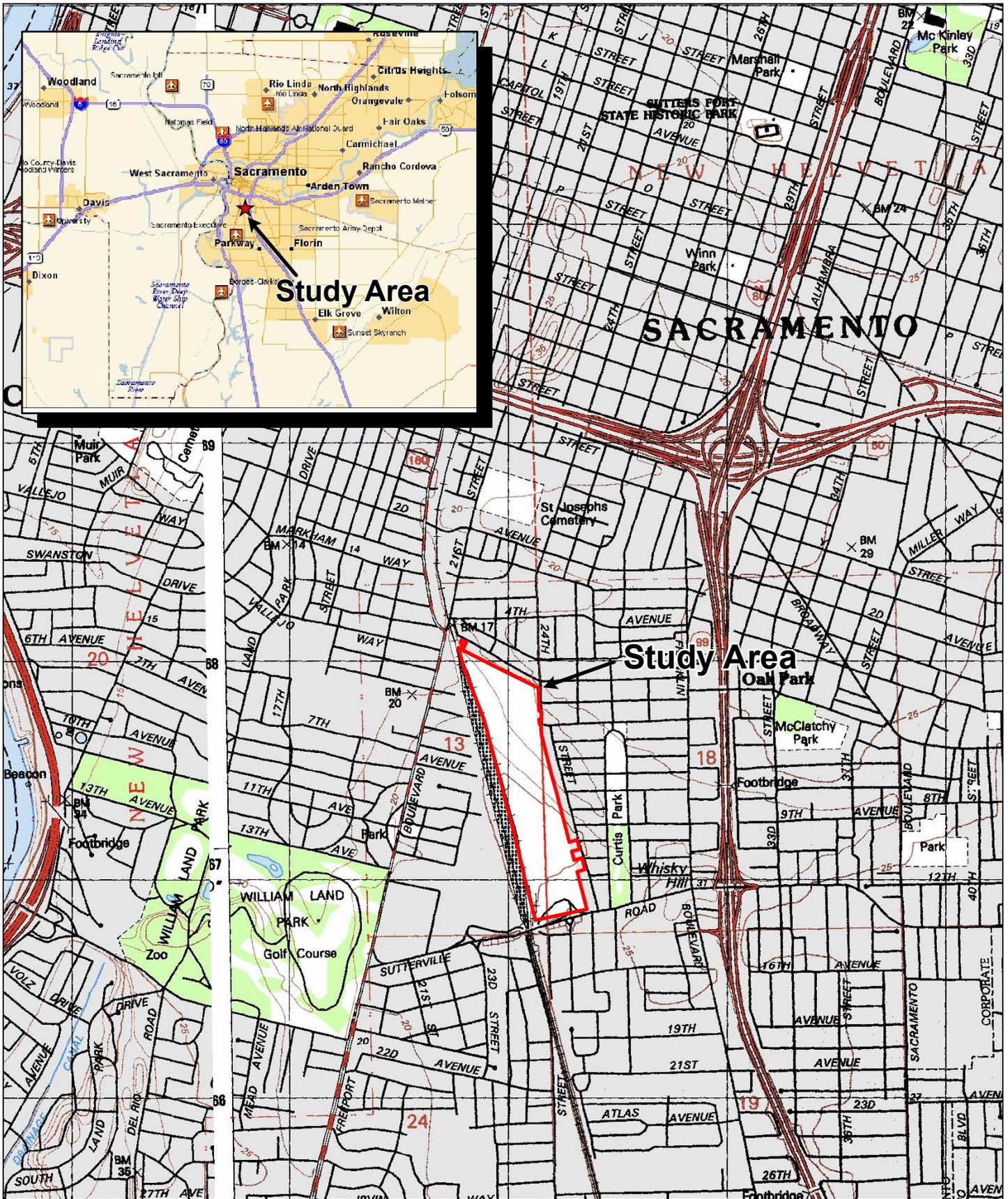
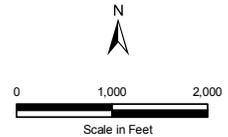


Figure 1

SITE & VICINITY MAP
Curtis Park Village
 City of Sacramento, California



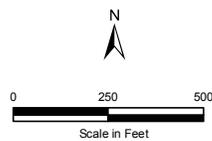
NOTES:
 Base map: Sacramento East, CA, USGS
 7.5 minute topographic quadrangle
 Section: 13, 18
 Township: 08N
 Range: 04E



Study Area

Figure 2

AERIAL PHOTO
Curtis Park Village
City of Sacramento, California



Aerial Photo Date: August 2005

Arborist report. NFA identified them as the non-native *Platanus acerifolia*, and these trees were not considered further unless they had a trunk diameter of 100 inches in circumference or greater.

The tree inventory report by Connor Arborist was used by NFA arborists to identify heritage trees, as defined by City of Sacramento, in the study area and provide a summary of the tree resources onsite. Additionally, the Conner Arborist report rated structural quality, health, and vigor for each tree, and noted general observations. These data were summarized into a spreadsheet and are presented as Appendix A. Since only the heritage trees are identified in Appendix A, the tree tag numbers are not in consecutive order. No analysis of street trees was conducted as part of this assessment. Photographs of the tree resources are included with this report (Figure 3)

Data

Nolte Associates, Inc., provided base data in AutoCAD format, from which a heritage tree location map was created (Appendix B). A heritage tree impact map was created by determining impacts to heritage trees based on the proposed project improvements (Appendix C). Tree assessment information refined by North Fork Associates from the Conner Arborist report was entered into a Microsoft Excel spreadsheet for summary and statistical analysis purposes.

RESULTS

Vegetation

The study area is highly disturbed, which is probably associated with its historical use as a rail yard. Currently, remediation activities are being conducted, which have modified the site by creating excavated soil pits and spoil piles onsite. Along the northern and northeastern boundary, coast live and valley oak are intermixed with ornamental trees, creating marginal oak woodland habitat. The rest of the study area is disturbed annual grassland. In the southern portion of study area, a strip of cottonwoods borders open pits which were filled with water during the time of site visit. Several dirt and paved roads and a parking lot were located within the study area along the southern boundary.

Tree Data

One hundred and forty-seven trees were identified as heritage trees. Tree species assessed include valley oak (*Quercus lobata*) (87%), coast live oak (*Quercus agrifolia*) (11%), interior oak (*Quercus wislizeni*) (1%), and sycamore (*Platanus acerifolia*) (1%). The sycamore trees onsite are non-native but are considered heritage trees because their trunk circumference is 100 inches or more ($\sim \geq 32$ inches dbh). Trees in the study area that were not evaluated include trees that are not classified as a heritage tree as described by the City of Sacramento Code (Chapter 12.64). Table 1 summarizes the findings.



3a. Looking north at the cottonwoods from the southern boundary of the study area.

3b. Looking south along the lower eastern boundary of the study area.



3c. Facing southeast, looking at the section of preserved trees along the northern boundary of the study area.



Photo Date: February 1, 2008

Figure 3

SITE PHOTOS
Curtis Park Village
City of Sacramento, California

**Table 1
Tree Assessment Data Summary**

Species	Number	Diameter at Breast Height Avg. (single and multi-trunk)(inches)	Dripline Radius Avg. (feet)
<i>Quercus lobata</i>	128	20	22
<i>Quercus agrifolia</i>	16	19.8	18
<i>Quercus wislizeni</i>	1	16	29
<i>Platanus x acerifolia</i>	2	34	37
Total	147	22.5	27

Sixty-eight trees (46%) are single-trunked and 79 (54%) have multiple trunks. Of the multi-trunked trees, 70 are valley oak and nine are coast live oak. Single-trunk diameters range from 12 to 52 inches, with an average of 18 inches. Multi-trunked aggregate tree diameters range from 12 to 52 inches, with an average of 21.9 inches. The largest single trunk of the multi-trunked trees is 26 inches in diameter. Of single-trunk trees, dripline radii range between 15 and 53 feet, with an average of 24 feet. Of multi-trunk trees, dripline radii range between nine and 32 feet, with an average of 19 feet.

Health, Vigor, and Structure

The majority of trees (95%) were assessed to be fair or better in health, and most of the trees (84%) have fair to fair to poor structure. Regarding health and vigor, five (3%) were rated as good, forty (27%) were rated as good to fair, 94 (64%) were rated as fair, seven (5%) were rated as fair to poor, and one (1%) was rated as poor. Regarding structure, none were rated as good, 19 (13%) were rated as good to fair, 66 (45%) were rated as fair, 58 (39%) were rated as fair to poor, and four (3%) were rated as poor.

Impact Analysis

Eighty-eight heritage trees with a dbh total of 1811.7 inches will be removed due to the proposed improvements (Appendix C). Fifty-nine heritage trees will be preserved; most of which are located along the northern boundary of the study area. The following sections provides general and specific preservation measures for those preserved trees that fall within the jurisdiction of Sacramento City Code (Chapter 12.64)

General Preservation Measures

The heritage trees along the northern boundary will be preserved within the proposed lots. During construction, the following general preservation measures are recommended for the preservation of heritage trees onsite. Many recommendations refer to the Critical Root Zone (CRZ), which includes the dripline (a circular area around the tree based on the measurement taken from the trunk to the tree’s longest branch) plus one foot. The CRZ is important because it is the area where the majority of the tree’s roots are located.

- An onsite pre-construction meeting should be conducted to review the protective measures in place with the developer, general contractor (if different), excavator,

underground contractor (if different), paving contractor (if different), and the developer's arborist.

- A sign should be posted at all entrances of the site to inform the public and all contractors with a list of basic site rules. These rules should include:
 - 1) Be aware and informed of tree protection areas.
 - 2) Keep equipment out of tree CRZs except where necessary.
 - 3) Do not store supplies or equipment (including vehicles) within the CRZ or protected fence lines of trees to be retained.
 - 4) Limit ground disturbance to minimum necessary during improvement activities.
 - 5) All concrete trucks, pumps, and tools shall be cleaned at designated concrete wash stations.
 - 6) Contact information for further information.

- Protective fencing should be placed beyond or at the limits of the CRZ of the trees in areas that will not be affected by construction.

- No storage of vehicles, equipment, or chemicals should be allowed within the CRZ of the retained trees. Areas within the CRZ of retained trees should not contain waste piles or storage areas (i.e., designated concrete wash out bins and material storage areas are recommended).

- Selective pruning for clearance and dead-wooding should be performed on all the trees, as the need arises. All pruning and fertilization measures should follow the ANSI (A300) best management practices and be performed by or under the direction of a certified arborist.

Specific Preservation Measures

Soil Compaction

If grading or compaction occurs within the CRZ of a retained heritage tree, then aeration is recommended. Aeration improves the amount of oxygen needed for the tree's root system to survive. Aeration procedures may include digging a pattern of holes within the CRZ to radial trenching. Mulching within the CRZ of retained trees with ground disturbance in the CRZ with chipped materials from the removed trees is recommended (cedar or redwood mulch should not be used). A four- to six-inch layer of mulch should be added within the CRZ of high quality trees from near the trunk base (six-12 inches from the trunk) to near the edge of the CRZ.

Tree Removal

When trees scheduled for removal are being removed, all possible measures to avoid impacting adjacent retained trees should be taken. When trees to be removed have a CRZ overlap of greater than 20 percent with trees slated for retention, the removal of the stump and root structure should be avoided when possible. Additionally, the overlapping tree crowns should be unconnected to limit the amount of damage and impact to the preserved tree during felling of trees planned for removal. If greater than

20 percent of the CRZs overlap, and the stump and associated root structure must be removed, the overlapping tree should be considered removed.

Excavation

During excavation within the CRZ of retained trees, roots should be severed cleanly at the limit of excavation. Care should be taken to avoid breaking limbs or roots. Trenching paths should be at a maximum distance possible from the trunk of the retained heritage tree.

Fill Material

Utilization of gravel and fill material that does not contain chemicals or other significant pH altering properties, which could cause considerable stress and/or mortality, is recommended.

CONCLUSION

North Fork Associates conducted a tree resources assessment on the ±71.7-acre Curtis Park Village study area, located in City of Sacramento, Sacramento County, California. One hundred and forty-seven trees were identified as heritage trees. Tree species assessed include valley oak (*Quercus lobata*) (87%), coast live oak (*Quercus agrifolia*) (11%), interior oak (*Quercus wislizeni*) (1%), and sycamore (*Platanus acerifolia*) (1%). The majority of trees (95%) were assessed to be fair or better in health and structurally most of the trees (84%) have fair to fair to poor structure.

General and specific preservation measures are provided in this report for those preserved trees that fall within the jurisdiction of Sacramento City Code (Chapter 12.64).

Appendix A
Heritage Trees Assessed in the Curtis Park Village Study Area

Appendix A: Heritage Trees Assessed in the Curtis Park Village Study Area

Tag #	Species	Trunk Diameters at Breast Height (dbh) (inches)					Total Inches	Dripline (feet)	Structure	Health	Notes
4	<i>Quercus lobata</i>	20.0	20.0	12.0			52.0	19	Poor	Poor	Southwest trunk declining, embedded wire fence, cavity at base, scarring, internal decay, evidence of decay on 12.0 up trunk and at base
6	<i>Quercus lobata</i>	13.0	12.0				25.0	21	Fair	Fair	Ivy growing up trunk
7	<i>Quercus lobata</i>	13.0	12.0				25.0	20	Fair to Poor	Fair	Callusing wound with interior decay from ground level to 4'; weak crotch at 2.5', leans to the southwest
9	<i>Quercus lobata</i>	27.0					27.0	40	Fair to Poor	Good to Fair	Weak branching, cavity along 6.5' of trunk, scarring, internal decay
10	<i>Quercus lobata</i>	20.0					20.0	18	Poor	Fair	Leans to the northeast, weak branching, decaying cavity in saplings, regrown base from crown
11	<i>Quercus lobata</i>	18.0	16.0				34.0	32	Good to Fair	Good to Fair	Wire fence embedded, one major limb fluxing
12	<i>Quercus lobata</i>	20.0					20.0	26	Good to Fair	Fair	Above average amount of deadwood
13	<i>Quercus lobata</i>	13.0	9.0				22.0	22	Fair	Good to Fair	
14	<i>Quercus lobata</i>	13.0	8.0				21.0	29	Fair to Poor	Good to Fair	Multiple trunks, weak; primary crotch, weak branching; above average amount of deadwood
15	<i>Quercus lobata</i>	15.0					15.0	34	Good to Fair	Fair	Leans to the west; above average amount of deadwood
17	<i>Quercus lobata</i>	8.0	5.0				13.0	19	Fair to Poor	Fair	Leans to the south, multiple trunks; above average amount of deadwood
28	<i>Quercus lobata</i>	15.0					15.0	22	Fair	Fair	Dbh taken at 3'; overbalanced to the southwest; above average amount of deadwood
32	<i>Quercus lobata</i>	10.0	8.0	5.0			23.0	26	Fair to Poor	Fair	Weak crotches, leans to the south; above average amount of deadwood, above average leaf necrosis
35	<i>Quercus lobata</i>	12.0	9.0	7.0			28.0	15	Fair to Poor	Fair	Weak crotches; above average leaf necrosis
40	<i>Quercus lobata</i>	8.0	4.0				12.0	10	Fair	Fair	Weak secondary crotch; above average amount of deadwood
41	<i>Quercus lobata</i>	12.0					12.0	22	Fair	Good to Fair	Weak primary crotch at 8'
45	<i>Quercus lobata</i>	6.0	6.0				12.0	9	Fair	Fair	Overbalanced to the south, weak primary crotch at 4'; above average amount of deadwood, above average leaf necrosis
46	<i>Quercus lobata</i>	15.0					15.0	21	Good to Fair	Fair	Overbalanced to the south; above average amount of deadwood
47	<i>Quercus lobata</i>	9.0	8.0	4.0			21.0	28	Fair to Poor	Fair	Weak crotching, overbalanced to the south; above average amount of deadwood

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Tag #	Species	Trunk Diameters at Breast Height (dbh) (inches)					Total Inches	Dripline (feet)	Structure	Health	Notes
53	<i>Quercus lobata</i>	9.0	8.0	6.0			23.0	30	Fair to Poor	Fair	Weak crotching, leans to the south; above average amount of deadwood
54	<i>Quercus lobata</i>	9.0	4.0				13.0	15	Fair to Poor	Fair	Fluxing wound at 7', weak crotching
57	<i>Quercus lobata</i>	10.0	6.0				16.0	23	Fair to Poor	Fair	Weak primary crotch, overbalanced to the west; above average amount of deadwood
60	<i>Quercus lobata</i>	10.0	6.0				16.0	15	Fair to Poor	Fair	Dual trunks, weak crotching; above average amount of deadwood
66	<i>Quercus lobata</i>	17.0					17.0	20	Fair to Poor	Fair	Diameter taken at 3'; weak primary crotch, overbalanced to the southwest, some weak crotching
69	<i>Quercus lobata</i>	8.0	8.0				16.0	19	Fair	Fair	Co-dominant trunks; above average amount of deadwood
71	<i>Quercus lobata</i>	15.0					15.0	16	Fair	Fair	Weak primary crotch at 8'
73	<i>Quercus lobata</i>	10.0	6.0				16.0	19	Fair	Fair	Weak crotching, dual trunks; above average amount of deadwood, above average leaf necrosis
74	<i>Quercus lobata</i>	12.0					12.0	17	Good to Fair	Fair	Above average amount of deadwood
75	<i>Quercus lobata</i>	9.0	8.0	7.0			24.0	14	Fair	Fair	Weak crotch at 8' on largest trunk; above average amount of deadwood
78	<i>Quercus lobata</i>	12.0	9.0				21.0	28	Fair	Fair	Overbalanced to the southeast; above average amount of deadwood
79	<i>Quercus lobata</i>	8.0	7.0				15.0	17	Fair	Fair	Co-dominant trunks; above average amount of deadwood
81	<i>Quercus lobata</i>	8.0	5.0	3.0			16.0	12	Fair	Fair	Above average amount of deadwood, crowded
89	<i>Quercus lobata</i>	12.0	6.0				18.0	15	Fair to Poor	Fair	Weak crotching throughout
90	<i>Quercus lobata</i>	8.0	5.0	3.0			16.0	13	Fair	Fair	Above average amount of deadwood
92	<i>Quercus lobata</i>	8.0	7.0	5.0			20.0	16	Fair	Good to Fair	Overbalanced to the south
94	<i>Quercus lobata</i>	8.0	4.0				12.0	11	Fair	Fair	Above average amount of deadwood, above average leaf necrosis
97	<i>Quercus lobata</i>	15.0					15.0	30	Fair	Fair	Leans to the southwest; above average amount of deadwood, above average leaf necrosis
98	<i>Quercus lobata</i>	8.0	5.0	4.0			17.0	13	Fair	Fair	Above average amount of deadwood, above average leaf necrosis
101	<i>Quercus lobata</i>	8.0	4.0				12.0	16	Fair	Fair	Leans slightly to southwest; above average amount of deadwood, above average leaf necrosis
102	<i>Quercus lobata</i>	7.0	5.0	4.0			16.0	15	Fair	Fair	

Appendix A: Heritage Trees Assessed in the Curtis Park Village Study Area

Tag #	Species	Trunk Diameters at Breast Height (dbh) (inches)					Total Inches	Dripline (feet)	Structure	Health	Notes
105	<i>Quercus lobata</i>	10.0	6.0				16.0	17	Fair to Poor	Fair	Weak crotch at 8'
106	<i>Quercus lobata</i>	9.0	6.0				15.0	18	Fair	Fair	Weak crotching, leans to the southwest
108	<i>Quercus lobata</i>	52.0					52.0	53	Fair	Fair	Large limbs bending to the ground, overbalanced to the south
110	<i>Quercus lobata</i>	6.0	4.0	4.0			14.0	11	Fair to Poor	Fair	Weak crotch; above average leaf necrosis
112	<i>Quercus lobata</i>	7.0	7.0	4.0			18.0	10	Fair	Good to Fair	Heavily infested with twig galls
116	<i>Quercus lobata</i>	18.0					18.0	20	Fair	Good to Fair	Dbh taken at 2'; Co-dominant trunks at 5', weak crotching
117	<i>Quercus lobata</i>	16.0	10.0				26.0	20	Fair to Poor	Fair	Weak crotch at 7'; above average amount of deadwood
118	<i>Quercus lobata</i>	19.0					19.0	26	Fair to Poor	Fair	Dbh taken at 1'; weak primary crotch at 4.5', weak secondary crotch at 10', leans to the northeast; above average amount of deadwood, above average leaf necrosis
119	<i>Quercus lobata</i>	17.0					17.0	25	Fair to Poor	Fair	Dbh taken at 2'; weak primary crotch, weak secondary crotch at 6.5'; above average amount of deadwood, above average leaf necrosis
120	<i>Quercus lobata</i>	17.0					17.0	21	Fair	Good to Fair	Dbh taken at 4'; overbalanced to north
128	<i>Quercus lobata</i>	8.0	5.0	3.0	3.0		19.0	21	Fair	Fair	Primary trunk leans to the north; above average leaf necrosis
129	<i>Quercus lobata</i>	11.0	4.0				15.0	12	Fair	Good to Fair	Weak crotches at 10' and 15'
132	<i>Quercus lobata</i>	11.0	8.0	8.0	8.0	8.0	43.0	23	Fair to Poor	Fair	Weak crotching at base; above average leaf necrosis
134	<i>Quercus lobata</i>	17.0					17.0	17	Fair to Poor	Fair	Dbh taken at 2'; three trunks at 6'; above average amount of deadwood, above average leaf necrosis
135	<i>Quercus lobata</i>	21.0					21.0	24	Fair to Poor	Good to Fair	Dbh taken at 1.5'; weak crotching, dual trunks at 5'
136	<i>Quercus lobata</i>	12.0					12.0	16	Fair	Fair	Above average amount of deadwood
137	<i>Quercus lobata</i>	17.0					17.0	23	Fair	Fair	Weak primary crotch
140	<i>Quercus lobata</i>	7.0	5.0	5.0			17.0	10	Fair	Good	
141	<i>Quercus lobata</i>	19.0	6.0				25.0	20	Fair	Good	Crotches questionable
142	<i>Quercus lobata</i>	32.0					32.0	25	Fair to Poor	Good to Fair	Dbh taken at 1'; weak crotching
143	<i>Quercus lobata</i>	10.0	8.0	8.0	5.0		31.0	16	Fair to Poor	Good to Fair	Dbh taken at 3'; weak crotching
144	<i>Quercus lobata</i>	15.0					15.0	17	Fair to Poor	Good to Fair	Weak primary crotch at 6'
145	<i>Quercus lobata</i>	10.0	8.0				18.0	23	Fair to Poor	Fair	Weak crotching, leans to the west

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Tag #	Species	Trunk Diameters at Breast Height (dbh) (inches)					Total Inches	Dripline (feet)	Structure	Health	Notes
147	<i>Quercus lobata</i>	9.0	4.0				13.0	19	Fair	Fair	Leans to the northwest; above average amount of deadwood
148	<i>Quercus lobata</i>	23.0					23.0	25	Fair	Fair	Dbh taken at 2.5'; weak crotches at 9', otherwise good crotches
149	<i>Quercus lobata</i>	8.0	6.0				14.0	14	Fair to Poor	Fair to Poor	Leans to the west, crowded; above average amount of deadwood, above average leaf necrosis
151	<i>Quercus lobata</i>	15.0					15.0	16	Fair to Poor	Fair	Dbh taken at 3'; callusing wound at 2', weak primary crotch at 4'; much leaf necrosis
152	<i>Quercus lobata</i>	27.0					27.0	27	Good to Fair	Fair	Dbh taken at 4'; well balanced, strong crotching, fine tree; above average leaf necrosis
154	<i>Quercus lobata</i>	21.0	19.0	4.0			44.0	24	Fair to Poor	Fair	Weak crotching; above average leaf necrosis
157	<i>Quercus lobata</i>	20.0	8.0	3.0			31.0	17	Fair to Poor	Fair	Weak crotching, somewhat overbalanced to the north; above average leaf necrosis
159	<i>Quercus lobata</i>	26.0	11.0				37.0	29	Fair to Poor	Fair	Poor lower crotching; above leaf necrosis
160	<i>Quercus lobata</i>	14.0	13.0				27.0	24	Fair to Poor	Fair	Leans to the west, weak crotching; above average amount of deadwood
164	<i>Quercus lobata</i>	16.0	6.0				22.0	23	Fair	Fair	Weak crotching
166	<i>Quercus lobata</i>	14.0	5.0				19.0	27	Fair to Poor	Fair	Dbh taken at 3'; leans to the south, weak primary crotch at 5'; above average amount of deadwood
167	<i>Quercus lobata</i>	12.0	12.0	11.0	8.0	6.0	49.0	28	Fair to Poor	Fair	Weak crotching, fluxing wound at 3' on 8" trunk; above average amount of deadwood
168	<i>Quercus lobata</i>	8.0	7.0				15.0	20	Fair to Poor	Fair	Weak crotching; above average amount of deadwood
169	<i>Quercus lobata</i>	12.0					12.0	19	Fair to Poor	Fair to Poor	Dbh taken at 2.5'; weak crotching; declining, average amount of deadwood
170	<i>Quercus lobata</i>	9.0	8.0	5.0			22.0	22	Fair to Poor	Fair to Poor	Weak primary crotch; above average amount of deadwood, above average leaf necrosis
173	<i>Quercus lobata</i>	13.0					13.0	20	Fair	Fair	Weak primary crotch, overbalanced to the northwest; above average amount of deadwood
174	<i>Quercus lobata</i>	13.0					13.0	27	Fair	Fair	Leans to the west; above average amount of deadwood
176	<i>Quercus lobata</i>	14.0					14.0	23	Fair	Fair	Leans slightly to the south, overbalanced to the south; above average amount of deadwood
177	<i>Quercus lobata</i>	16.0					16.0	23	Fair	Good to Fair	Dbh taken at 4'; weak crotch at 7'
181	<i>Quercus lobata</i>	21.0					21.0	28	Good to Fair	Fair	Dbh estimated at 2'; Chain-link fence and steel post embedded

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Tag #	Species	Trunk Diameters at Breast Height (dbh) (inches)				Total Inches	Dripline (feet)	Structure	Health	Notes	
182	<i>Quercus lobata</i>	17.0	11.0	7.0			35.0	31	Fair to Poor	Fair	Weak primary crotch; above average leaf necrosis
185	<i>Quercus lobata</i>	11.0	8.0				19.0	21	Fair to Poor	Good to Fair	Weak primary crotch, overbalanced to the southwest
187	<i>Quercus lobata</i>	15.0					15.0	25	Fair to Poor	Fair	Poor crotching; above average amount of deadwood
188	<i>Quercus lobata</i>	10.0	7.0				17.0	24	Fair to Poor	Fair	Weak primary and secondary crotches; above average amount of deadwood, above average leaf necrosis
191	<i>Quercus lobata</i>	12.0					12.0	26	Fair to Poor	Good to Fair	Weak crotching, overbalanced to the west; above average leaf necrosis
193	<i>Quercus lobata</i>	14.0					14.0	18	Fair to Poor	Fair	Dbh taken at 3'; weak primary and secondary crotches, overbalanced to the south; above average leaf necrosis
194	<i>Quercus lobata</i>	7.0	6.0				13.0	10	Fair to Poor	Good to Fair	Overbalanced to the west
195	<i>Quercus lobata</i>	14.0	7.0				21.0	27	Fair	Fair	Dual trunks but well crotched, well crotched throughout; much leaf necrosis
197	<i>Quercus lobata</i>	19.0					19.0	31	Fair to Poor	Fair	Overbalanced to the northeast, large callusing wound at primary crotch where one of the limbs had broken off with some insect/bird damage, interior well preserved, deadwood in canopy
198	<i>Quercus lobata</i>	21.0					21.0	30	Fair	Good to Fair	Overbalanced to the southwest
200	<i>Quercus lobata</i>	20.0					20.0	18	Fair to Poor	Good to Fair	Dbh taken at 1.5'; weak crotching, overbalanced to the south, approximately co-dominant trunks at 5'
203	<i>Quercus lobata</i>	10.0	10.0				20.0	22	Fair to Poor	Fair	Weak primary crotch; above average amount of deadwood, above average leaf necrosis
206	<i>Quercus lobata</i>	16.0					16.0	25	Good to Fair	Fair	Above average amount of deadwood
209	<i>Quercus lobata</i>	8.0	7.0	6.0			21.0	20	Fair to Poor	Fair	Weak crotching, overbalanced to the northwest; above average leaf necrosis
212	<i>Quercus lobata</i>	15.0					15.0	28	Fair	Fair	Overbalanced to the west, trunk obscured by ivy
215	<i>Quercus agrifolia</i>	14.0					14.0	27	Good to Fair	Fair	Overbalanced to the west; above average amount of deadwood
218	<i>Quercus lobata</i>	13.0					13.0	30	Fair	Fair	Leans to the west, obscured by ivy; above average amount of deadwood
220	<i>Quercus wislizeni</i>	16.0					16.0	29	Good to Fair	Good to Fair	Overbalanced to the west

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Tag #	Species	Trunk Diameters at Breast Height (dbh) (inches)				Total Inches	Dripline (feet)	Structure	Health	Notes
225	<i>Quercus agrifolia</i>	17.0				17.0	19	Good to Fair	Good to Fair	Leans slightly to the south
226	<i>Quercus lobata</i>	13.0				13.0	31	Fair	Good to Fair	Leans to the west
229	<i>Quercus lobata</i>	13.0				13.0	16	Fair	Fair	Leans slightly to the west, overbalanced to the west
234	<i>Quercus lobata</i>	14.0				14.0	24	Fair to Poor	Fair	Leans to the northwest; above average leaf necrosis
235	<i>Platanus acerifolia</i>	32.0				32.0	33	Good to Fair	Fair	
242	<i>Quercus lobata</i>	25.0				25.0	43	Good to Fair	Fair	
247	<i>Quercus lobata</i>	20.0				20.0	34	Poor	Good	Weak trunk crotching, leans to the west
251	<i>Quercus agrifolia</i>	22.0				22.0	18	Good to Fair	Good to Fair	Above average amount of deadwood
256	<i>Quercus agrifolia</i>	13.0	13.0			26.0	21	Fair to Poor	Good to Fair	Dbh taken at 4'; weak primary and secondary crotches
257	<i>Quercus lobata</i>	14.0				14.0	17	Fair	Good to Fair	Chain-link fence embedded, sinuous trunk for lowest 4'
258	<i>Quercus lobata</i>	17.0				17.0	18	Fair	Good to Fair	Obscured by ivy, single straight vertical trunk
259	<i>Quercus lobata</i>	14.0				14.0	15	Good to Fair	Good to Fair	
262	<i>Quercus lobata</i>	14.0				14.0	19	Fair	Good to Fair	Dbh taken at 6'; overbalanced to the north, chain-link fence embedded from 1' to 5'
263	<i>Quercus agrifolia</i>	6.0	5.0	4.0		15.0	12	Fair	Fair	Multiple weak primary and secondary crotching, trunks lean to the west; above average amount of deadwood
264	<i>Quercus agrifolia</i>	12.0	11.0	10.0	6.0	39.0	20	Fair to Poor	Fair	Overbalanced to the northwest; weak primary crotch, embedded chain-link fence; above average amount of deadwood
265	<i>Quercus agrifolia</i>	16.0	9.0			25.0	23	Fair to Poor	Fair	Leans to the west, chain-link in primary crotch
266	<i>Quercus agrifolia</i>	18.0				18.0	18	Good to Fair	Good to Fair	Chain-link
267	<i>Quercus agrifolia</i>	20.0				20.0	20	Good to Fair	Good to Fair	Chain-link
272	<i>Quercus agrifolia</i>	7.0	5.0			12.0	15	Fair to Poor	Fair	Chain-link, trunks trail out horizontally; above average amount of deadwood
274	<i>Quercus agrifolia</i>	12.0				12.0	18	Fair	Good to Fair	Leans to the west
275	<i>Quercus agrifolia</i>	15.0	15.0			30.0	21	Poor	Fair to Poor	Chain-link, leans to the west, weak secondary crotch; declining, above average amount of deadwood; excessive pruning in half of canopy; trunk base behind fence on adjacent property

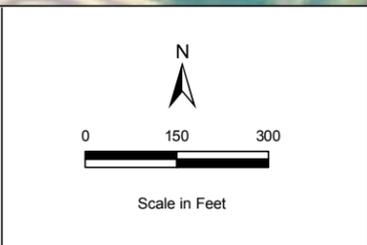
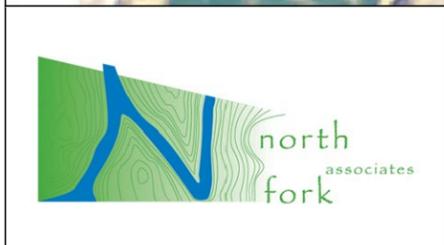
Appendix A: Heritage Trees Assessed in the Curtis Park Village Study Area

Tag #	Species	Trunk Diameters at Breast Height (dbh) (inches)					Total Inches	Dripline (feet)	Structure	Health	Notes
281	<i>Quercus lobata</i>	7.0	6.0	5.0	5.0		23.0	17	Fair	Fair to Poor	Above average amount of deadwood, above average leaf necrosis
283	<i>Quercus lobata</i>	16.0					16.0	27	Fair	Fair	Overbalanced to the west; above average amount of deadwood, above average leaf necrosis
284	<i>Quercus lobata</i>	15.0					15.0	20	Fair to Poor	Fair	Weak crotching, leans slightly to the north; above average amount of deadwood
286	<i>Quercus lobata</i>	15.0					15.0	29	Fair	Fair to Poor	Overbalanced to the northwest; foliage sparse, above average amount of deadwood, above average leaf necrosis
298	<i>Platanus acerifolia</i>	35.0					35.0	40	Fair	Good to Fair	Overbalanced to the east due to some pruning away from power lines
300	<i>Quercus lobata</i>	16.0	15.0				31.0	29	Fair to Poor	Fair	Weak primary crotch
302	<i>Quercus lobata</i>	14.0	14.0				28.0	26	Fair	Fair	Overbalanced to the east; above average amount of deadwood
303	<i>Quercus lobata</i>	23.0					23.0	29	Fair	Good to Fair	Weak primary crotch, overbalanced to the west due to pruning away from power lines; above average leaf necrosis
304	<i>Quercus lobata</i>	10.0	8.0				18.0	19	Fair	Fair	Dbh taken at 5'; weak primary and secondary crotches; above average amount of deadwood
307	<i>Quercus lobata</i>	19.0	18.0				37.0	27	Fair to Poor	Good to Fair	Weak primary crotch
308	<i>Quercus lobata</i>	6.0	6.0	4.0	4.0		20.0	19	Fair to Poor	Good to Fair	Leans to the west, embedded chain-link, weak primary
310	<i>Quercus lobata</i>	18.0					18.0	30	Fair	Fair	Leans to the northeast; above average amount of deadwood
311	<i>Quercus lobata</i>	18.0					18.0	24	Fair	Fair	Well balanced and straight but weak crotching
313	<i>Quercus lobata</i>	26.0					26.0	31	Good to Fair	Good	
316	<i>Quercus lobata</i>	11.0	11.0				22.0	23	Fair	Fair	Overbalanced to the southeast, sinuous trunk, some minor crotches, weak; above average leaf necrosis
317	<i>Quercus lobata</i>	19.0	5.0				24.0	21	Fair	Good to Fair	Dbh taken at 3'; crotching questionable, slightly overbalanced to the northwest, exposed root on downhill side; above average amount of deadwood
318	<i>Quercus lobata</i>	16.0					16.0	19	Fair	Fair	Weak crotching, overbalanced to the north; above average amount of deadwood

Appendix A: Heritage Trees Assessed in the Curtis Park Village Study Area

Tag #	Species	Trunk Diameters at Breast Height (dbh) (inches)				Total Inches	Dripline (feet)	Structure	Health	Notes
320	<i>Quercus lobata</i>	19.0	9.0			28.0	20	Fair to Poor	Fair	Weak crotching; above average amount of deadwood, above average leaf necrosis
321	<i>Quercus lobata</i>	9.0	6.0			15.0	19	Fair to Poor	Good to Fair	Major trunk leans to the southwest, weak primary and secondary crotches
322	<i>Quercus lobata</i>	8.0	7.0			15.0	17	Fair	Good to Fair	Leans to the east
331	<i>Quercus lobata</i>	12.0				12.0	16	Good to Fair	Good to Fair	
NFA1	<i>Quercus agrifolia</i>	10.0	9.0	3.0		22.0	17	Fair	Fair	Enclosed in chain link fence; one trunk heavily pruned; crowded
NFA2	<i>Quercus agrifolia</i>	18.0				18.0	21	Fair	Good	Enclosed in chain link fence; leaning; full crown
NFA5	<i>Quercus agrifolia</i>	6.8	5.2			12.0	11	Fair	Fair	
NFA6	<i>Quercus agrifolia</i>	8.4	6.3			14.7	11	Fair	Fair to Poor	8.4 trunk has cracked bark with evidence of decay; good leaf canopy

Appendix B
Heritage Tree Location Map



Aerial Photo Date: August 2005

Appendix B

HERITAGE TREE LOCATION MAP
Curtis Park Village
 City of Sacramento, California

Appendix C
Heritage Tree Impact Map



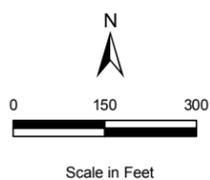
Study Area

Study Area



TreePoints

- Preserved Heritage Trees
- Removed Heritage Trees



Aerial Photo Date: August 2005

Appendix C

HERITAGE TREE IMPACT MAP
Curtis Park Village
 City of Sacramento, California

APPENDIX H

FINAL REMEDIAL ACTION PLAN

Union Pacific Railroad Yard Sacramento, California

Submitted by



**UNION PACIFIC
RAILROAD COMPANY**

1416 Dodge Street, Room 930
Omaha, Nebraska 68179

Prepared by



DAMES & MOORE

JUNE 1995

UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA
FINAL REMEDIAL ACTION PLAN

JUNE 1995

SUBMITTED BY:

UNION PACIFIC RAILROAD COMPANY
1416 DODGE STREET, ROOM 930
OMAHA, NEBRASKA 68179

PREPARED BY:
DAMES & MOORE

PROJECT NO. 00173-080-044

DAMES & MOORE

DAMES & MOORE

8801 FOLSOM BOULEVARD, SUITE 200, SACRAMENTO, CALIFORNIA 95826
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June 30, 1995

Mr. James L. Tjosvold, P.E., Acting Branch Chief
Site Mitigation Branch
Region 1, Department of Toxic Substances Control
California Environmental Protection Agency
10151 Croyden Way, Suite 3
Sacramento, CA 95827

Attention: Mr. Jose Salcedo

**Re: Transmittal of Final
Remedial Action Plan
Union Pacific Railroad Company
Sacramento, California
D&M Project No. 00173-080-044**

Dear Mr. Salcedo:

Union Pacific Railroad Company (UPRR) has requested that Dames & Moore transmit the above-referenced document. This Final Remedial Action Plan (RAP) has been prepared pursuant to Enforceable Agreement No. HSA 86/87-015EA issued March 26, 1987 to UPRR by the California Environmental Protection Agency — Department of Toxic Substances Control (DTSC), as modified by DTSC correspondence. The organization and contents of the Final Remedial Action Plan conforms to DTSC guidance for Remedial Action Plans (DTSC Official Policy/Procedure No. 87-2).

This Final RAP incorporates City of Sacramento and Sierra Curtis Neighborhood Association comments on the Draft RAP dated April 15 and April 13, 1994, respectively. If you have any questions or require further clarification, please contact Jim Brake at (916) 387-7530.

Sincerely,

DAMES & MOORE



Jim Brake, R.G.
Project Manager



Anne L. Olson, P.E.
Project Engineer

Enclosure
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FINAL
 REMEDIAL ACTION PLAN
 UNION PACIFIC RAILROAD YARD
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SACRAMENTO, CALIFORNIA

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FINAL
REMEDIAL ACTION PLAN
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

1.0 INTRODUCTION

This Final **Remedial Action Plan**¹ for the Union Pacific Railroad Company's (UPRR) Railroad Yard site (the site) located in Sacramento, California was prepared by Dames & Moore on behalf of UPRR, as required by Enforceable Agreement No. HSA 86/87-015EA. The Enforceable Agreement was issued by the California Environmental Protection Agency — Department of Toxic Substances Control (DTSC) on March 26, 1987. A Remedial Action Plan is required as a part of the **remediation** process for state-listed hazardous substance release sites.

1.1 PURPOSE OF THE REMEDIAL ACTION PLAN

The purpose of a Remedial Action Plan is to provide a conceptual **clean-up** plan for the site. A Remedial Action Plan includes a summary of the **remedial investigation and feasibility study** and describes the methods which have been and/or will be used to identify and subsequently design and implement a final remedial action for state-listed hazardous substance release sites. It also presents an assessment of environmental impacts potentially caused by the proposed clean-up. The Remedial Action Plan approval process is the means by which the public is provided an opportunity to be involved in the decision-making process for the selection of a remedy(s).

Remedial Action Plans are not intended to contain specific engineering design details of the proposed clean-up option; however, they must clearly and concisely describe the selected and rejected options, so that interested members of the public, government agencies, and **Potentially Responsible Parties** can provide the DTSC with meaningful opinions and comments. Remedial Action Plans must clearly set out specific **remedial action objectives** and time frames for completion of actions. Once the DTSC adopts a final Remedial Action Plan, a commitment is made that if the Remedial Action Plan is fully implemented, the site will be certified for removal from the state list of hazardous substance release sites which require remedial action or that it will be transferred to a list of sites which require long-term **operation and maintenance**.

The Remedial Action Plan is a specific requirement of California Health and Safety Code Section 25356.1. Other state and federal statutes, regulations, and guidance which may be applicable to Remedial Action Plans are presented below.

¹ All terms shown in bold type are defined in the Glossary in Section 11.0.

- **California Environmental Quality Act**, Public Resources Code, 21000 et seq. and Title 14, California Code of Regulations, Division 6, 1500 et seq.
- Title 8, 14, 22, 23, and 26 of California Code of Regulations
- California Site Mitigation Decision Tree Manual (Department of Health Services, 1986)
- **National Oil and Hazardous Substance Pollution Contingency Plan**, 40 CFR 300.61 et seq.
- Hazardous Substance Clean-up Bond Act of 1984
- Hazardous Substance Account Act (Division 20, Chapter 6.8, Sections 25356.1(c) - (h), 25356.3(a), 25358.7(a)-(d) and 25356.3(c) of the California Health and Safety Code)
- **Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)**, USC Sections 9601-9657 and 40 CFR 300
- CERCLA as amended, i.e., the Federal Superfund Amendments and Reauthorization Act (SARA) of 1986
- **Resource Conservation and Recovery Act**, Hazardous Waste Regulations, 40 CFR 260-270, as amended
- Clean Air Act, 42 USC 7401-7642
- Clean Water Act, 33 USC 1251 et seq. and 40 CFR 100-140, 400-470
- EPA Guidance for Preparation of Record of Decisions and Selection of Remedy for Superfund Sites
- Guidance for Conducting Remedial Investigations/Feasibility Studies under CERCLA (United States Environmental Protection Agency, 1988)
- Risk Assessment Guidance for Superfund (EPA, 1991).

1.2 SITE IDENTIFICATION

The site is located in the southern part of Sacramento, California and is shown on Figure 1. Residential neighborhoods border the site to the north and east; Western Pacific Avenue and Sutterville Road border the site to the south; and Sacramento City College, light industry and residential property border the site to the west. The site consists of an active railroad switching yard and an unused inactive portion, which are separated by a fence.

1.3 BACKGROUND

Preparation of this Final Remedial Action Plan follows completion of a Remedial Investigation/Feasibility Study Report for the site. The Remedial Investigation/Feasibility Study Report was accepted as final by the DTSC in May 1991. Subsequent site investigations resulted in preparation of an Addendum Remedial Investigation/Feasibility Study Report which was submitted to the DTSC in November 1991. A Draft Remedial Action Plan based on the analyses presented in the Addendum Remedial Investigation/Feasibility Study Report was also submitted to the DTSC in November 1991 (Dames & Moore, 1991e).

After the Draft Remedial Action Plan of 1991 was prepared, the City of Sacramento (City) provided comments on the Addendum Remedial Investigation/Feasibility Study Report, and the DTSC commented on the Draft Remedial Action Plan. The City and DTSC comments focused on two primary issues:

- The remedial alternatives for soil contamination proposed in the Addendum Remedial Investigation/Feasibility Study and the Draft Remedial Action Plan of 1991 would limit beneficial future land uses at the site; and
- The second, smaller groundwater contaminant plume should be extracted and treated instead of monitored as proposed in the Addendum Remedial Investigation/Feasibility Study and the Draft Remedial Action Plan of 1991.

The Union Pacific Land Use Committee, a group of community members who live near the site, was asked by the Sacramento City Council to conduct a series of community workshops and identify desired future land uses for the site. The results of the Union Pacific Land Use Committee's evaluation are contained in a report that lists potential land use types and general recommendations for redevelopment at the site. The final Union Pacific Land Use Committee report (presented in Appendix A) was endorsed by the City Council in April 1992 under Resolution Number 92-255. The DTSC reviewed the desired future land uses listed in the report and recommended that UPRR develop two sets of clean-up levels for soil contaminants which would be protective of human health and the environment for two general types of future land use:

- Unrestricted Future Land Use; and
- Restricted Future Land Use.

In order to address comments by the City and the DTSC, and to provide for the beneficial future land uses desired by the members of the community, UPRR asked Dames & Moore to prepare a Feasibility Study Supplement which was submitted to the DTSC in October 1992. The Feasibility Study Supplement presented general assumptions about future land use, soil clean-up levels for the two general land use types, and a re-evaluation of the remedial alternatives for soil and groundwater at the site.

Remedial alternatives were then selected for the site which would allow for the beneficial future land uses identified by the City and members of the community (as contained in the final Union Pacific Land Use Committee report).

After reviewing the Feasibility Study Supplement, the DTSC recommended that some of the proposed clean-up levels for arsenic and lead in soil be reduced to more health-protective levels. Although UPRR's Risk Assessment (Dames & Moore, 1992b) showed that the proposed clean-up levels were adequate, UPRR agreed to use the stricter clean-up levels recommended by the DTSC. In February 1993 a report was submitted to the DTSC presenting limited revisions to the Feasibility Study Supplement. These revisions were a result of the stricter clean-up levels for lead and arsenic in the inactive portion of the site. The modifications included:

- Revised volume estimates for soil with contaminant concentrations above the clean-up levels.
- Revised figures depicting the areas on-site where soil is contaminated above the clean-up levels.
- Revised cost estimates for some of the final candidate remedial alternatives for soil.

The Revised Draft Remedial Action Plan (Dames & Moore, 1993b) incorporated the results of the Feasibility Study Supplement (Dames & Moore, 1992c), the Revised Soil Volumes and Remedial Alternative Detailed Cost Estimates (Dames & Moore, 1993a), and other work performed since the Draft Remedial Action Plan of 1991 was submitted.

Arsenic in slag has recently been demonstrated in an animal bioavailability study to have no bioavailability. Once the DTSC has concurred with the findings of the study, the cleanup levels for arsenic and lead may be increased or withdrawn. If a cleanup level is intended to be changed, a public notice will be issued and a public meeting will be held to present the study results and answer questions or discuss concerns regarding the proposed cleanup level changes.

Comments were provided by the Sierra Curtis Neighborhood Association (SCNA) and DTSC on the Revised Draft Remedial Action Plan in April and June 1993, respectively. The comments primarily focused on areas of the site (and off-site) that required additional characterization. Subsequently, several studies were performed and documents prepared in response to comments on the Revised Draft Remedial Action Plan. The studies included:

- Additional Characterization of the Downgradient Extent of VOC Impacts in Groundwater Operable Unit GW-1 (Dames & Moore, 1994a);
- Additional Subsurface Investigation, Operable Unit S-5 (Dames & Moore, 1993c);

- Supplemental Groundwater Investigation, Operable Unit S-5 (Dames & Moore, 1994b);
- Development of Remedial Action Objectives for Volatile Organic Compounds in Soil in the Central Fill and Oil House Areas (Dames & Moore, 1994c); and
- Groundwater Pre-Design Activities (Dames & Moore, 1995d).

The Draft Remedial Action Plan (January 1994) was made available for a 45-day public review and comment period following its completion. During the second week of the review and comment period, a public meeting was held to present the current status of site investigation and **Interim Remedial Measures**. The purpose of the meeting was to provide a forum for the public to ask questions and make comments regarding the site and the Draft Remedial Action Plan. Written comments on the Draft Remedial Action Plan were provided by the City of Sacramento and the SCNA. The comments focused primarily on additional on- and off-site investigation that was needed to complete characterization of soil and groundwater impacts at the site. Additionally, the City of Sacramento commented on the level of technical data content in the Draft Remedial Action Plan of January 1994. This Final Remedial Action Plan was prepared in response to the comments received on the Draft Remedial Action Plan of 1994, and references the reports prepared for additional investigations and studies listed above.

1.4 INFORMATION PRESENTED IN THE FINAL REMEDIAL ACTION PLAN

The format and contents of this Final Remedial Action Plan are consistent with the DTSC guidance provided in Official Policy/Procedure No. 87-2 dated October 5, 1987 titled "Remedial Action Plan Development and Approval Process." A copy of Official Policy/Procedure No. 87-2 is provided in Appendix C. This Final Remedial Action Plan is organized as follows:

Section 1.0 discusses the purpose of the Final Remedial Action Plan and provides an introduction to the site.

Section 2.0 presents a history of site ownership and activities leading to current contaminated conditions. This section also provides a site physical description of the site and its environment and information on land use, **demography**, **biological receptors**, **climatology**, and **hydrogeology**. Portions of this section have been updated to include additional investigations and interim remedial measures undertaken since completion of the Draft Remedial Action Plan of January 1994.

Section 3.0 discusses the results of the Remedial Investigation and supplemental investigations, including an evaluation of soil conditions beneath the site, identification and evaluation of **hazardous substances** encountered, evaluation of hydrogeological conditions (surface water and groundwater), and an evaluation of **contaminant mobility**.

Section 4.0 assesses current and potential risks posed by conditions at the site, including hazards to human health and the environment.

Section 5.0 discusses the effects of contamination upon present and probable future beneficial uses of land and water.

Section 6.0 summarizes the Feasibility Study and discusses future land use, remedial action objectives, and **final candidate alternatives**. This section also provides the rationale for the selection or rejection of each final candidate alternative considered. **Recommended remedial alternatives** are examined in terms of potential human health and environmental impacts and **compliance** with applicable regulations.

Section 7.0 discusses the proposed remedial action implementation schedule for the recommended remedial alternatives.

Section 8.0 contains a non-binding preliminary allocation of financial responsibility, describing who will pay for cleaning up the site.

Section 9.0 discusses requirements for operation and maintenance of the recommended remedial alternatives and performance assurance.

Section 10.0 is a list of reference documents which were used during preparation of this Final Remedial Action Plan.

Section 11.0 is a glossary defining technical terms used in this Plan. Section 11.0 has a tab to provide easy reference.

Tables are included within the text. Each table is found in the text near its first reference. Figures are included in a separate tabbed section at the end of the text.

2.0 SITE DESCRIPTION

This section presents a history of site ownership and activities leading to current contaminated conditions, and provides a chronology of investigations and interim remedial measures conducted to date. This section also provides a physical description of the site and its environment with information on land use, demography, biological receptors, climatology, and hydrogeology.

2.1 SITE HISTORY

2.1.1 Site Location

The UPRR Yard is located in south Sacramento in **Section 13 of Township 8 North, Range 4 East** and in **Section 18 of Township 8 North, Range 5 East, Mt. Diablo Base Meridian** (see Figure 1). The site encompasses an area of approximately 94 acres, consisting of two portions: the active yard, which makes up the western part of the site; and the inactive portion, which makes up the eastern part of the site (see Figure 2). Residential property borders the site to the north and east; Western Pacific Avenue and Sutterville Road border the site to the south; and Sacramento City College, commercial, light industrial, and residential properties border the site to the west. The primary roads closest to the site include Freeport Boulevard about one-fourth mile west, 24th Street thirty yards east, Portola Way thirty yards north, and Sutterville Road.

2.1.2 Nature of Business and Length of Operation

The railroad maintenance yard was established by Western Pacific Railroad in the early 1900s to maintain and rebuild steam locomotives and boilers, refurbish rail cars, and assemble trains. Activities conducted at the facility included sand-blasting, painting, machining, welding, dismantling, reassembly of locomotives and rail cars, and switching operations. Diesel engine repair and maintenance began in the mid-1950s. There is no information regarding the transition period from maintenance of steam locomotives to maintenance of diesel locomotive engines. UPRR purchased the operations in 1982, but discontinued maintenance yard operations at the site in 1983. Remaining buildings and structures in the maintenance yard were demolished by UPRR in 1985 and 1986. UPRR still maintains a switching yard operation in the active yard (the western portion of the site).

2.1.3 Type of Hazardous Substances

During operation of the site, a principal activity was refurbishing railroad cars and locomotives. This likely involved the use of various solvents, cleansers, and degreasers to clean and strip the cars.

Prior to 1951, maintenance activities also included removal of asbestos insulation from boilers and pipes of steam engines before stripping and cleaning.

Records regarding purchases of chemicals are unavailable. Based on current knowledge of the facilities that historically existed at the site and interviews with UPRR employees, past chemical use at the site is summarized below:

- A caustic solution, trisodium phosphate (TSP; Oakite), was used to prepare railcars for painting.
- Solvents and degreasers were used to clean and strip railcars and locomotive parts.
- Paints were used primarily in the Coach and Paint Shop. Paint pigments likely contained lead and other metals. Data regarding specific chemical constituents contained in the paints are not available. Solvents and mineral spirits were likely used in association with painting operations.
- Lye was used in a below-ground concrete vat south of the Main Shop.
- Two concrete lye pits existed in the area south of the Main Shop.
- Waste oil sumps were used for oil/water separation. These sumps were periodically cleaned out, and separated water was discharged to the combined sewer system.
- Fuels and oil were stored on-site in both above ground and below-ground tanks. Underground storage tanks included the subsurface gasoline and diesel tanks near the Oil House, a single 1,000-gallon tank north of the Main Shop building, and two concrete **bunker fuel** tanks.
- Oil was recycled at the Refined Oil Building.
- Asbestos was used for steam engine boiler insulation prior to 1951 and was stored in the Asbestos Storage Area.
- The rattler pit was located in the Main Shop Area and was used to shake mineral deposits out of the steam pipes removed from locomotives.
- If there was **electroplating** activity at the facility, as DTSC has suggested in correspondence, it was on a very small scale. Only the Coach and Paint Shop could have had electroplating facilities. No evidence of electroplating has been found.
- Copper ore smelting slag containing arsenic and lead was used as **track ballast** and yard cover material.
- Herbicides have been used to control weeds.

2.1.4 Events Leading to Contaminant Release

Based on a review of historical records and information on past operating practices at the site, eight areas where **contaminant** releases may have occurred have been identified. The approximate locations of these eight areas are described below, and their former locations are shown on Figure 2.

- **Maintenance Facilities** - These included the Main Shop and Transfer Table Area, the Coach and Paint Shop, the Car Repair Shed, and the Refined Oil Building. The primary chemicals used in these areas included waste oil, degreasing solvents, paints, and metals.
- **Fuel Oil Handling Facilities** - Fuel oils were used at the Fueling Area and Boiler House, and were stored at the Oil House.
- **Underground storage tanks** - The following underground fuel tanks were identified:
 - 1) A 72,000-gallon concrete bunker fuel tank west of the Main Shop.
 - 2) A 18,000-gallon concrete bunker fuel tank northwest of the Main Shop.
 - 3) Five former underground storage tanks north of the Oil House (removed in 1986).
 - 4) A 1,000-gallon underground storage tank partially filled with a mixture of fuel oil and **Stoddard Solvent**. This tank was located on the north side of the former Main Shop building.
- **Existing and Previous Track Locations** - These are frequently the location of slag which contains arsenic, lead, and other metals. Some petroleum hydrocarbons were also apparently spilled.
- **Railroad Tie and Power Pole Storage Areas** - Creosote-treated wood stored in this area was a potential source of hydrocarbons and metals.
- **Former Pond** - A **surface impoundment** was located in the middle of the property, contents of which are unknown.
- **Central Fill Area** - An area of fill material located in the middle of the inactive portion of the site.
- **Asbestos Storage Area** - An asbestos storage area was located in the southwest corner of the site.

With the exception of the surface impoundment, Central Fill Area and slag areas noted above, most of these areas were in the southern part of the inactive portion of the site. A review of site history indicates activities involving chemicals were not conducted in the undeveloped northern area.

2.1.5 Chronology of Historical Events

A chronology of key historical events at the site is summarized below:

- From the late 1800s to early 1900s, the area presently occupied by the site consisted of ranches, farms, and orchards.
- In the early 1900s, the rail yard was first established by Western Pacific Railroad for maintenance of steam locomotives and rail cars.
- Transition from repair and maintenance of steam locomotives to diesel engines began in the mid-1950s. No detailed information is available regarding the transition, but the change in operations may have resulted in a significant decrease in the use of asbestos, since most of its use was associated with steam engines. An increase in the use of degreasers and diesel fuel was probably also associated with the transition.
- In 1982, UPRR purchased the site from Western Pacific Railroad.
- In 1983, UPRR discontinued operations at the Sacramento yard.
- In 1985 and 1986, UPRR demolished buildings and structures on the site.

2.1.6 Previous Studies

Investigations of the nature and extent of contamination at the site were initiated in 1987. The final Remedial Investigation/Feasibility Study Report was completed in May 1991. Additional investigations were subsequently conducted to further assess impact to soils and groundwater, and were presented in an Addendum Remedial Investigation/Feasibility Study Report completed in November 1991. Major phases of the Remedial Investigation included:

- In 1987, remedial investigations were initiated in response to an Enforceable Agreement dated March 26, 1987, which was executed between UPRR and DTSC (then under the California Department of Health Services).
- In 1988, Phase I Remedial Investigation activities were conducted by Dames & Moore. Results were presented in a Draft Remedial Investigation Report submitted to the DTSC in 1988.
- In 1989, Phase II Remedial Investigations were conducted by Dames & Moore.
- In April 1990, Dames & Moore conducted additional groundwater investigations to evaluate potential off-site groundwater impacts.
- In August 1990, Dames and Moore conducted supplementary groundwater investigations to further evaluate the extent of off-site groundwater contamination.

- On August 31, 1990 a draft Remedial Investigation/Feasibility Study Report was submitted to the DTSC.
- In May 1991, off-site monitoring well installations and additional on-site soil and groundwater investigations were initiated.
- In December 1991, a supplementary remedial investigation was conducted in the active yard.
- During July and August 1992, an ambient air monitoring study was conducted at the site.
- In October 1993, additional subsurface soil and groundwater investigation activities were undertaken in the active yard.
- In December 1993, remedial action objectives were developed for total petroleum hydrocarbons as gasoline and associated constituents in soil.
- Beginning in April 1994, Dames & Moore performed additional characterization of the downgradient extent of VOCs in off-site groundwater.
- In April and June 1994, a supplemental groundwater investigation was performed in the active railyard.
- In June 1994, additional characterization of VOCs in soil gas was performed in the Central Fill and Oil House areas.
- In August and October 1994, Dames & Moore performed aquifer pumping tests on-site and off-site, respectively.
- From August through November 1994, Dames & Moore performed an ambient air quality study in the active railyard.
- In December 1994, Dames & Moore performed a soil vapor extraction pilot test to assess the effectiveness of this remedial technology in removing volatile organic compounds from soil in the Central Fill and Oil House Areas of the sit.
- In March 1995, Dames & Moore performed computer modeling of on- and off-site groundwater flow to evaluate the effectiveness of extracting groundwater for treatment from additional on- and off-site wells.
- In May 1995, an animal study was performed to assess the bioavailability of arsenic in slag material.
- Groundwater monitoring continues on a quarterly basis.

The findings of completed investigations are documented in several reports prepared for UPRR and submitted to the DTSC. The reports listed below form the basis of this Final Remedial Action Plan.

1. Draft Remedial Investigation Report for Union Pacific Railroad Sacramento Shops Area, Sacramento, California, Dames & Moore, June 1988.
2. Draft Remedial Investigation Report, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, February 1990.
3. Draft Soils Feasibility Study, Union Pacific Railroad Sacramento, Sacramento, California, Dames & Moore, May 1990.
4. Hydropunch and Groundwater Investigation Report, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, July 1990.
5. Draft Remedial Investigation/Feasibility Study Report, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, August 1990.
6. Baseline Health Risk Assessment, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, August 1990.
7. Supplementary Groundwater Investigation Report, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, February 1991.
8. Final Remedial Investigation/Feasibility Study Report, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, May 1991.
9. Addendum Remedial Investigation/Feasibility Study Report (including Revised Baseline Health Risk Assessment), Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, November 1991.
10. Draft Remedial Action Plan, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, November 1991.
11. Aquifer Pumping Test Results, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, February 1992.
12. Additional Off-Site Groundwater Investigation, Second Hydrostratigraphic Zone, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, July 1992.
13. Supplement to the Revised Baseline Health Risk Assessment, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, September 1992.
14. Development of Remedial Action Levels for the Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, September 1992.
15. Remedial Investigation Supplement, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, September 1992.
16. Ambient Air Assessment at the Union Pacific Railroad Yard, Sacramento, California, AeroVironment, September 1992.

17. Sources, Speciation, and Dissolution Kinetics of Arsenic and Lead, Union Pacific Railroad Yard, Sacramento, California, Walsh and Associates, September 1992.
18. Feasibility Study Supplement, Union Pacific Railroad, Sacramento, California, Dames & Moore, October 1992.
19. Revised Soil Volumes and Remedial Alternative Detailed Cost Estimates, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, February 1993.
20. Additional Subsurface Investigation, Operable Unit S-5, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, December 1993.
21. Proposed Remedial Action Objectives for TPH-Gasoline and Associated Constituents in Soil, Union Pacific Railroad Yard, Sacramento, California, December 1993.
22. Supplemental Groundwater Investigation Report, Operable Unit S-5, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, December 1994.
23. Additional Characterization of Off-Site Groundwater, Operable Unit GW-1, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, 1994.
24. Development of Remedial Action Objectives for Volatile Organic Compounds in Soil in the Central Fill and Oil House Areas, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, December 1994.
25. Air Monitoring Report, Soil Operable Unit S-5, Union Pacific Railroad Yard, Sacramento, California, March 1995.
26. Soil Vapor Extraction and In-Situ Bioremediation Pilot Test Report, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, May 1995.
27. Groundwater Pre-Design Activities Report, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, June 1995.

2.1.7 Interim Remedial Measures

Interim Remedial Measures are clean-up activities performed before the Remedial Action Plan has been approved. These activities are implemented with the approval of the DTSC. The purpose of an Interim Remedial Measure is to quickly reduce potential health and safety risks or to minimize adverse **environmental impacts**.

Several Interim Remedial Measures were carried out during the course of the contaminant investigation and characterization activities at the site. The locations of these activities are shown on Figure 3, and Interim Remedial Measures to date are summarized below.

- A fence separating the active and inactive portions of the site was installed in March 1987.
- Approximately 1,600 cubic yards of wood debris and asbestos in soil was removed and disposed off-site during August and September 1987. An additional 50 cubic yards of soil was disposed in the same manner in April 1988.
- The fluid contents and rinsate from the 18,000-gallon concrete underground storage tank were removed and disposed off-site in December 1987. The 18,000-gallon underground storage tank was cleaned, demolished, and removed from the site in January 1988.
- Removal and off-site disposal of the fluid contents and rinsate from the 1,000-gallon steel underground storage tank occurred in August 1989. The tank was removed from the site in September 1989.
- Asbestos-impacted soils were excavated and disposed of, and a grass vegetative cover was applied in the southwest portion of the inactive yard in September 1990.
- Soil and petroleum hydrocarbons contained within a 72,000-gallon concrete underground storage tank were removed in March 1988. Additional materials were removed from the tank prior to cleaning in September 1989.
- Approximately 900 tons of slag and metals-contaminated soil was removed from two off-site lots (Lot 1 and 2206 Sixth Avenue) in December 1991. One other lot (Lot 3) was covered with gravel and a seal coat. The locations of these off-site lots are shown on Figure 4.
- An out-of-service water supply well located in the southern inactive portion of the site was abandoned in March 1992. The well casing was perforated and filled with cement grout.
- The 72,000-gallon tank and associated piping were removed during May and June 1992. Approximately 2,500 cubic yards of asphalt, concrete and other non-hazardous debris were also removed at that time.
- Operation of a groundwater treatment system was begun in April 1993. The purpose of this Interim Remedial Measure is to treat contaminated groundwater and prevent further off-site migration of groundwater contaminants.
- Slag and metals-impacted soil were removed from the inactive portion of the site and the southeastern part of the active yard in November and December 1993. Levels of metals in soil in the inactive portion of the site were reevaluated in early 1994 to assess the remaining distribution of arsenic and lead in soil in the inactive portion of the site.
- An additional groundwater extraction well (EW-1) was installed in June 1994 in the southeast corner of the inactive portion of the site and connected to the existing groundwater treatment system in October 1994. The purpose of this extraction well is to prevent further off-site migration of groundwater in Operable Unit GW-1.

- A soil vapor extraction and in-situ bioremediation pilot test was performed in the Central Fill and Oil House Areas in November and December 1994. The purpose of the tests was to assess the feasibility of implementing these technologies on a larger scale to (1) reduce levels of volatile organic compounds in vadose zone soil, thereby reducing the amount of leaching of these contaminants from soil to groundwater in the source area, and (2) supplement groundwater treatment by enhancing natural biodegradation of volatile organic compounds in groundwater in the source area.

2.2 PHYSICAL DESCRIPTION

2.2.1 Topography

Elevation changes across the site are generally small, with the exception of a northwest-southeast trending berm that runs across the northern inactive portion of the site, and the north-south trending berm bordering the western site boundary (see Figure 3). Surface elevations range from approximately 12 feet above mean sea level (MSL) in the northern portion of the site, to 32 feet above MSL in the southern portion of the site. The surface of the site slopes generally to the north.

Past land uses have modified site topography over the span of railroad yard operations. Fill placement practices in the central inactive portion of the site are believed to have built this area up and made it higher in elevation than the surrounding area. The differences in elevation between the western site boundary and off-site areas is believed to have resulted from the addition of fill to the western active portion of the site to form the existing railroad track bed.

2.2.2 Areal Extent of Contamination

2.2.2.1 Soil Contamination

Soil investigations in the inactive portion of the site indicate that asbestos, arsenic, lead, petroleum hydrocarbon, and polycyclic aromatic hydrocarbon contamination exists in shallow soils distributed across the site.

Petroleum hydrocarbons and polycyclic aromatic hydrocarbons appear to be located in those areas where UPRR operations historically used, recycled and/or stored diesel fuel, motor oil, and other hydrocarbon products. Most of the petroleum hydrocarbon contamination is diesel fuel and is found in the upper five feet of soil in the southern inactive portion of the site. In the Central Fill Area of the inactive portion of the site, petroleum hydrocarbons occur primarily in the upper 15 feet of soil. Petroleum hydrocarbons as gasoline are also present in the southern inactive portion of the site, primarily in association with diesel-contaminated soil. Benzene, toluene, ethylbenzene, and xylene (commonly

found in gasoline) were sporadically detected at low concentrations in some of these areas. There is also an area in the active yard where petroleum hydrocarbons (diesel fuel and oil) have been detected in soil. The approximate areal extent of petroleum hydrocarbon contamination is shown on Figure 5. Polycyclic aromatic hydrocarbons were not found in the active yard.

Track ballast is crushed rock or natural gravel used as a structural base for railroad tracks. Slag, a rock-like by-product of metallic ore refining industries was used as track ballast at the site. Slag track ballast is believed to be the primary source of arsenic and lead in soil. Prior to the slag removal Interim Remedial Measure in late 1993, slag was distributed along existing track in the active yard and areas of the inactive portion of the site where track was formerly located, as shown on Figure 6A. Most arsenic and lead contamination was found in the upper 1.5 feet of soil in both the active yard and inactive portion of the site. The areal extent of slag following slag removal activities is shown on Figure 6B. Figure 7 depicts the approximate areal distribution of arsenic and lead requiring remediation before slag removal activities were undertaken. Post-slag removal sampling analytical data were statistically evaluated in early 1994 to assess the remaining distribution of lead and arsenic in soil following the slag removal Interim Remedial Measure. Statistical analysis showed that remedial action objectives for arsenic and lead have been met in each operable unit, with the exception of some localized areas in operable unit S-2 and around the west and south edges of operable unit S-3.

Chlorinated volatile organic compounds are present in soil vapors in the Central Fill and former Oil House areas. Available data indicate these impacts extend to approximately 25 feet below ground surface.

Low levels of polychlorinated biphenyls are present in shallow soil near the former Transformer Vault area (see Figure 2). The areal extent of these impacts is limited.

2.2.2.2 Groundwater Contamination

Groundwater investigations have revealed the presence of two plumes of contaminated groundwater, shown on Figure 8. The largest plume (Plume A on Figure 8) contains volatile organic compounds, volatile aromatic compounds and nickel, and extends from the Central Fill Area approximately 5,200 feet southeast to 19th Avenue Dames & Moore, 1994a). The smaller plume (Plume B) extends from west of the former Main Shop approximately 1200 feet to the south, just past Sutterville Road. Plume B contains lower concentrations of volatile organic compounds and nickel than Plume A.

Additional subsurface investigation in October 1993 (Dames & Moore, 1993b) and April 1994 (Dames & Moore, 1994b) revealed the presence of minor groundwater impacts in the northeastern portion of the active yard. Low concentrations of diesel fuel and oil were detected in groundwater samples. The

samples were not reported to contain detectable concentrations of toxic hydrocarbon constituents. As shown on Figure 8, the diesel fuel groundwater impacts are contained within the property boundary. Further groundwater monitoring will be done to verify that these impacts do not pose a threat to human health.

2.2.3 Description of Structures

2.2.3.1 Former Structures

As was discussed in Section 2.1.2, several structures were located in the inactive portion of the site prior to their demolition 1985. The locations of these former structures are shown on Figure 2. They include:

- Main Shop
- Transfer Table
- Lumber Shed
- Freight Car Repair Shed
- Store House
- Blacksmith Shop
- Coach and Paint Shop
- Oil House
- Brass House
- Fueling Station
- Asbestos Storage Building
- Office.

Some facilities were demolished when the maintenance yard was still active. All remaining maintenance facilities in what is now the inactive portion of the site were demolished in 1985 and 1986.

2.2.3.2 Present Structures

The only structure on-site today is in the active yard. This structure is the Yard Office, which is occupied by UPRR personnel responsible for switching yard operations.

2.2.4 Current Land Uses

Current land use at the site is restricted to the active yard (see Figure 2). Activities in this portion of the site include assembling trains, off-loading rail cars, and train passage along the main line. The Yard Office described above is located in this area. The inactive eastern portion of the site is vacant.

Land uses adjacent to the site currently include single family homes, schools, and light industrial and commercial businesses. Current City of Sacramento Planning Division zoning designations for properties in the immediate vicinity of the site are shown on Figure 9. General land uses in the site vicinity are shown on Figure 10 and described below.

Directly adjacent to the north, northwest, and west sides of the site are residential neighborhoods. The Franklin Boulevard commercial district and State Highway 99 are located beyond these residences approximately one-half mile east of the site. The Interstate 80 Business Route freeway is approximately one mile north of the site. Adjacent to the northwest side of the site there is a mixture of single-family residences and commercial buildings, housing, fast-food restaurants, dry cleaners, an appliance store, and a natural food store. Slightly further northwest, approximately 1/8 mile from the site, is McClatchy High School. U.S. Cold Storage Co. maintains a large cold storage warehouse facility adjacent to the west side of the site. Located beyond U.S. Cold Storage are single-family residences. Hughes Stadium and the campus of Sacramento City College are adjacent to the southwest side of the site. William Land Park lies beyond Sacramento City College approximately 1/3 mile west of the site. There is a complex of light industrial buildings on the south side of Sutterville Road, across the southern site boundary. Approximately 1/8 mile south of the site there are more residential neighborhoods. The Sacramento Children's Home is approximately 1/8 mile southeast of the site. Beyond the Children's Home, approximately 1/4 mile from the site, are additional residential neighborhoods.

2.2.5 Demography

The site is located in the southern part of the City of Sacramento, California. According to the United States Department of Commerce Bureau of Census 1990 Census of Population and Housing, approximately 370,000 people reside within the City limits (Department of Commerce, 1991). The median family income for Sacramento at the time of the census was about \$33,000, and over 86 percent of families residing in Sacramento had incomes above the poverty level in 1989. Approximately 76% of Sacramento residents 25 years and older are high school graduates, and about 23% percent possess a bachelor's degree or higher (Department of Commerce, 1992). Racial characteristics measured by the 1990 Census indicate that approximately 60% of City residents are Caucasian, 15% are African-American, 15% are Asian or Pacific Islander, and 10% are American Indian or other. Approximately

sixteen percent of the City's population is of Hispanic origin, regardless of race (Department of Commerce, 1991).

The Department of Commerce has defined ten census tracts in the area within approximately one mile of the site (Department of Commerce, 1990). For these ten tracts, 1990 census figures identify 32,100 people living in 14,335 households. Ethnic background of people living within one mile of the site is mixed, with 51 percent Caucasian, 21 percent Hispanic, 16 percent Asian, 11 percent African-American, and 1 percent American Indian or Eskimo. The 1990 Census socio-economic information for individual census tracts has not yet been published.

2.2.6 Non-Human Biological Receptors

The site is located in a highly urbanized area. Opportunities for animals to forage or inhabit the site are limited, since it is only sparsely vegetated. Some grasses occupying a strip along the eastern and northern edges of the property may provide habitat for rodents, transient raccoons, opossums, skunks, or foraging raptors, but this area is relatively limited in its ability to support a diverse wildlife community. According to the California Department of Fish and Game's **California Natural Diversity Data Base (CNDDDB)** for the Sacramento East and Sacramento West Quadrangles, no sensitive species have been noted in the immediate vicinity of the site (California Department of Fish and Game, 1991). Most of the species listed in the CNDDDB were sighted along the riparian corridors of the American or Sacramento Rivers, which are at least 1 mile away. A more detailed discussion of wildlife and plant habitats is presented in Section 3.4 of this Final Remedial Action Plan.

2.2.7 Climatology

The Sacramento climate is characterized by warm summers and mild winters. The mean annual precipitation for Sacramento is 16.9 inches with nearly 90 percent of the precipitation occurring between November and April. The mean annual temperature is 60°F with a mean range of 45°F in January to 75°F in July (National Oceanic Atmospheric Administration (NOAA), 1986). The annual average wind speed is 8 mph with the prevailing wind direction from the southwest. Climatology data has been obtained from several downtown Sacramento weather recording stations and Sacramento Executive Airport weather station approximately two miles south of the site.

2.2.8 Hydrogeology, Groundwater Occurrence and Water Wells

2.2.8.1 Hydrogeologic Setting

The site is located in the southern portion of the Sacramento Valley **groundwater basin**, approximately one mile to the east of the Sacramento River. The site geology consists of **sediments** characteristic of **flood plain deposits** laid down by continually shifting streams. The subsurface sediments consist of a mixture of clays, silts, and sands, although the upper two to fourteen feet of the site contains native and non-native fill, including man-made debris. A 10- to 40- foot thick layer of clay and silty clay first encountered at a depth of approximately 50 to 60 feet below ground surface at the site forms the bottom of the first **water-bearing zone**. Groundwater in this zone extends upward through sands, silts and clays to a depth of 25 to 35 feet below the surface of the site.

2.2.8.2 Groundwater Occurrence

Groundwater beneath the site is first encountered at a depth of approximately 25 to 35 feet below the surface of the site (Dames & Moore, 1995a). The variation in depth to groundwater is due in part to site topography, but is also due to the slope of the water table and seasonal fluctuation. In general, groundwater beneath the site ranges from 2 feet below mean sea level at the northeast corner of the site to 8 feet below mean sea level at the southeast corner of the site. Groundwater flows to the southeast. The depth to groundwater measured at the site dropped approximately 2.5 feet from 1988 until 1992, due to prolonged drought conditions. However, groundwater elevations increased in 1993 and again in 1995 due to above-average precipitation.

2.2.8.3 Water Supply Wells

Based on a review of records at the California Department of Water Resources, a total of seven off-site water wells are present within one mile of the contaminant plumes, excluding wells used to monitor groundwater quality at and near the site. Water supply wells are shown on Figure 11 and listed in Table 1. These wells are currently used for irrigation purposes only. Based on available well logs, the total depth of these wells ranges from about 200 to 300 feet (Malmy, 1989). They typically pump water from approximately 100 to 300 feet below ground surface. It appears unlikely that these wells could be impacted by groundwater contamination from the site because of their depth and location (all are either cross-gradient or upgradient of the contaminant plumes).

The Fruitridge Vista Water Company operates several drinking water wells approximately one and one-half to two miles downgradient of the site, south of Fruitridge Road and east of Highway 99. The closest of these wells is approximately 7,000 feet from the downgradient plume boundary. The

nearest City of Sacramento public drinking water supply well **downgradient** of the site is located on Mace Road, approximately five miles south of the site (Malmy, 1990).

TABLE 1
NEARBY OFF-SITE GROUNDWATER SUPPLY WELLS
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

DWR Well No.	Depth of Completion (ft.)	Distance from Site (ft.)	Distance from Nearest Plume Boundary (ft.)	Direction from Site	Current Owner	Current Use
24A1	95	2,400	3,200	Northeast	—	Unknown
18K1	213	2,800	2,400	East	CalTrans	Irrigation and Dewatering
WLP4	300	2,300	2,800	Southwest	City of Sacramento	Irrigation
18Q1	240	3,000	1,100	Southeast	CalTrans	Irrigation and Dewatering
24C1	210	3,800	4,500	Southwest	City of Sacramento	Irrigation
13M	307	4,300	4,700	West	City of Sacramento	Irrigation
14H1	330	4,700	4,600	Southwest	City of Sacramento	Irrigation
24M1	—	5,700	5,400	Southwest	—	None
FV5	320	9,200	7,000	Southeast	Fruitridge Vista Water Company	Public Water Supply
FV6	—	9,300	7,300	Southeast	Fruitridge Vista Water Company	Public Water Supply
FV4	—	9,900	7,700	Southeast	Fruitridge Vista Water Company	Public Water Supply
FV1	321	10,900	8,900	Southeast	Fruitridge Vista Water Company	Public Water Supply
FV3	315	11,100	8,900	Southeast	Fruitridge Vista Water Company	Public Water Supply
FV2	224	11,600	9,500	Southeast	Fruitridge Vista Water Company	Public Water Supply
FV12	292	12,200	10,100	Southeast	Fruitridge Vista Water Company	Public Water Supply



Wells located over one mile from the nearest plume boundary.

NOTES:

— Not available.

Source: Meyer, 1990; Stockton, 1990.

Figure 11 shows the locations of wells listed here.

3.0 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

This section summarizes site-specific data obtained during the Remedial Investigation, including:

- Evaluation of soil conditions at the site
- Identification and evaluation of hazardous substances encountered
- Evaluation of hydrogeological conditions and groundwater contamination
- Evaluation of contaminant mobility and fate in the environment

3.1 GEOLOGICAL INVESTIGATIONS

Geological conditions at the site have been investigated by excavating pits with a backhoe and drilling into the subsurface with a drilling rig. Soil samples were collected from over 500 locations across the site and evaluated for physical and chemical properties. Soil samples were collected at one or more depth intervals at each location. Over 800 soil samples were analyzed for metals, more than 400 soil samples were analyzed for organic compounds (petroleum hydrocarbons and solvents), 187 soil samples were analyzed for asbestos, and approximately 70 soil samples were analyzed for physical characteristics.

3.1.1 Surface Soil Conditions

The Soil Survey of Sacramento County, California (United States Department of Agriculture Soil Conservation Service (SCS), 1991) has mapped three different soil units underlying the site. All three soils were developed from sediments deposited by rivers. The following descriptions of SCS-mapped soil units is included to describe the native soils which are still intact under most areas of the site.

The surface soil in the southern half and northwestern part of the inactive portion of the site is a strong brown silt loam (clayey silt). The subsoil is a **claypan** composed of yellowish red clay loam (silty clay). Underlying this is a **hardpan**, a soil horizon cemented naturally during soil development. Beneath the hardpan is a light yellowish brown loam (silty clay or clayey silt). Water may become trapped above the claypan subsoil following heavy rains in winter and early spring, forming temporary **perched groundwater tables**.

The surface soil in the north central part of the inactive portion of the site is a brown and light brown silt loam (clayey silt). The subsoil is a claypan composed of brown and strong brown clay (clay). Underlying the claypan is brown sandy clay loam (sandy clay) and sandy loam (sandy silt). Water may remain perched above the claypan of this soil for short periods after heavy rains.

The surface soil in the northeastern part of the inactive portion of the site is a pale brown silt loam (clayey silt). This is underlain by a pale brown silty clay loam (silty clay). Beneath this is a buried surface soil of gray clay (clay). The next layer is gray and pale brown clay loam. Seasonally high water tables may occur in this soil where not artificially drained.

Surface soil investigations and interpretation of historical aerial photos and maps reveal that extensive soil cutting and filling operations have occurred in the inactive portion of the site. These operations have resulted in the deposition of fill containing natural and man-made materials. Fill occurs from ground surface to an average depth of 1.5 to 2.0 feet over most of the southern half of the inactive portion of the site. In the northern half of the site, fill occurs from ground surface to a depth of 8 to 12 feet below ground surface. The deepest zones of fill appear to be in the mid-northern and northwestern part of the inactive portion of the site.

Fill material present at the site consists of soil, wood, concrete, rubble, drywall fragments, coal and cinders, iron and iron slag, and other metal debris. Fill soils are generally well compacted, except for the northwestern portion of the site where loose gravels and railroad track ballast are the predominant fill material.

3.1.2 Subsurface Soil Conditions

Subsurface soils at the site consist of an approximately 150-foot thick **assemblage** of clays, silts, and sands characteristic of flood-plain deposits laid down by continually shifting streams. The typical subsurface soil profile beneath the site can be summarized as:

<u>Typical Depth (ft)</u>	<u>Material</u>
0-2	Fill; mainly derived from native soils at the site (see Section 3.1.1). Also contains man-made materials. In the active yard, fill materials contain slag track ballast and a heterogeneous mixture of sands, gravel, and disturbed native soils.
2-25	Silty clay and clayey silt; contains a hardpan layer near the surface over much of the site.
25-35	Sands, silts and clays; interbedded fine-grained materials, becoming less fine-grained with increasing depth. The water table can extend into this material.
35-50	Sand; fine- to medium-grained, maximum thickness 25 feet, thinning to 4 feet in the southwestern corner of the site. The base of the sand is the base of the shallow water-bearing zone.

- 50-60 Clay and silty clay which form the bottom of the water-bearing zone. This layer varies in thickness from 10 feet to 40 feet and becomes siltier with depth.
- 60-150 Interbedded sands, silts and clays including lower water-bearing zone.

3.1.3 Off-Site Soil Sampling

Off-site soil sampling was conducted in the vicinity of the site. The purpose of the sampling was to evaluate normal **background concentrations** of metals in soils, and to evaluate the impact which metals from the site may have had on adjacent properties not owned by UPRR.

Nine soil samples were collected from Curtis Park and William Land Park with the purpose of evaluating natural background levels of arsenic, copper and lead occurring in soils near (but not impacted by) the site. Average background soil concentrations of arsenic and lead near the site are higher than the average reported background concentration in the United States. Average background soil concentrations of copper near the site are lower than the average reported background concentration in the United States (Shacklette, 1984). The results of background soil chemical analyses are summarized in Table 2.

TABLE 2
BACKGROUND LEVELS OF SELECTED METALS IN SOIL
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Constituent	Measured Soil Concentration (mg/Kg)			
	Site-Specific Background Samples ¹		U.S. Background Concentrations ²	
	Range	Average	Range	Average
Arsenic	6.36-8.36	7.75	0.1-97.0	7.2
Lead	7.80-30.0	22.0	10-300	15.0
Copper	16.4-26.2	22.9	< 1.0-700	25.0

NOTES:

- 1 A total of 9 samples were collected in Curtis Park and William Land Park. (Dames & Moore, 1990d).
- 2 Shacklette, 1984.

An additional 94 samples were collected from three residential lots and four vacant lots adjacent to the west side of the site, and from three residential lots adjacent to the east side of the site, as shown on Figure 4. These samples were collected and analyzed for the purpose of evaluating the potential impact which arsenic, lead, and copper from the site may have had on adjacent residential lots.

3.2 SOIL CONTAMINATION ASSESSMENT

3.2.1 Nature and Extent

Results from extensive soil sampling conducted during the Remedial Investigation and subsequent studies (Dames & Moore, 1991b, 1991d, 1992a, and 1992e) indicate that soils at the site contain metals (primarily arsenic and lead), organic compounds (petroleum hydrocarbons, polycyclic aromatic hydrocarbons, polychlorinated biphenyls, and solvents), and asbestos. The distribution of each type of soil contaminant present in site soils is discussed below.

Metals

Based on the **chemical analysis** of soil samples collected during Phase 1 and Phase 2 of the Remedial Investigation, and additional soil investigations in both the inactive portion of the site and the active yard, several areas were found to contain concentrations of arsenic and lead elevated with respect to background values (Dames & Moore, 1991b, 1991d, 1992a, and 1992e). These areas are shown on Figure 7. Elevated levels of arsenic and lead occur primarily in the upper 1.5 feet of soil and in some of the railroad track ballast containing slag. The distribution of slag at the site prior to slag removal activities in late 1993 is shown on Figure 6A.

Based on the analysis of soil samples collected from the adjacent residential and vacant lots, two areas adjacent to the west side of the site were found to contain elevated levels of arsenic and lead. These areas (Lot 1 and 2206 Sixth Avenue) are shown on Figure 4. Elevated levels of arsenic and lead were found primarily in the upper 1/2 foot of soil throughout Lot 1 and part of 2206 Sixth Avenue (Dames & Moore, 1991d). Slag used as gravel cover is believed to have been the source of the arsenic and lead.

Organic Contaminants

Organic contaminants were detected in soils in both the inactive portion of the site and the active yard. These contaminants consist of petroleum hydrocarbons (diesel fuel, gasoline, benzene, toluene, ethylbenzene, and xylenes), volatile organic compounds (solvents), and polycyclic aromatic hydrocarbons. Volatile organic compounds were not detected in soil samples collected at the site; however, low levels

of volatile organic compounds were detected in soil vapor samples collected in the Central Fill and former Oil House areas (Dames & Moore, 1991d and 1994c). Polycyclic aromatic hydrocarbons were generally found in the same areas as petroleum hydrocarbons, but were not detected in the active yard. Figure 5 is a map depicting the approximate area of soil impacted by petroleum hydrocarbons.

Soil samples collected near the former transformer vault area contained low levels of polychlorinated biphenyls (PCBs). Concentrations of PCBs detected in soil samples collected during the remedial investigation ranged from 0.0542 to 7.84 mg/Kg (Dames & Moore, 1991b and 1991d).

Asbestos

Asbestos-impacted soils have been found in the vicinity of the former Asbestos Storage Building in the southern corner of the inactive portion of the site (see Figure 12). The results of investigations conducted in this area indicate that asbestos is present in soil at concentrations between one and five percent by volume (Dames & Moore, 1991b, 1991d, and 1992d). Asbestos appears to be distributed unevenly in shallow soils and extends from ground surface to a depth of approximately 2 feet. Asbestos-containing building materials, pipe insulation, and **lagging material** have also been found in this area. The area has been planted with grass to prevent wind-blown asbestos until implementation of site-wide remediation.

3.2.2 Soil Contaminant Mobility

Mobility refers to the ways contaminants can move from the area where they were originally released. In general, soil contaminants could be transported by the following mechanisms:

- Small (dust- or sand-size) particles of contaminated soil or solid contaminants could be carried by wind;
- Contaminants that are soluble in water can dissolve in rain water (or irrigation water, if used) and travel downward through soil as water **infiltrates**, or travel on the surface in the form of contaminated run-off (contaminated particles, such as asbestos, or sparingly soluble liquids, such as petroleum hydrocarbons, can also travel on the surface via run-off);
- Liquid contaminants can infiltrate through soil with or without the addition of water; and
- Solid and liquid contaminants in soil can be transported by the activities of man, such as tilling, earthmoving, or fill practices.

There are also several natural processes which can slow or stop contaminants from moving. These processes include:

- Some contaminants that are soluble in water (especially metals) can adsorb, or stick, to certain types of soil (usually clay);
- Some liquid contaminants such as solvents may volatilize (turn into vapor form);
- Organic contaminants (solid or liquid) can be broken down into other compounds, such as water or carbon dioxide, by bacteria that occur naturally in soil. Often, these daughter compounds are harmless sometimes they are more toxic than the parent compound (for example, vinyl chloride);
- Thick (viscous) liquids tend to move more slowly through soil than thin liquids; and
- Natural clay layers may slow the downward movement of liquids because of low permeability.

Both organic and inorganic contaminants of concern have been found in soils at the site. Organic contaminants of concern include petroleum hydrocarbons (primarily diesel fuel), volatile organic compounds, and polycyclic aromatic hydrocarbons associated with diesel fuel. Inorganic contaminants of concern include lead, arsenic, and asbestos.

The potential for petroleum hydrocarbons to move through soil to groundwater was addressed through a **leachability** study (Dames & Moore, 1991d). This study used a series of mathematical equations to calculate the rate at which a selected petroleum hydrocarbon constituent (naphthalene) could migrate to the groundwater. Naphthalene was chosen because it is the most mobile of the **Priority Pollutant** compounds generally found in diesel fuel and detected at the site. The study was performed using site-specific data, as well as several **conservative assumptions** where site-specific data were not available.

The results of the leachability study showed that, depending on depth and concentration, petroleum hydrocarbons may constitute a threat to groundwater. Petroleum hydrocarbons at soil depths close to the **water table** represent a greater threat to groundwater than petroleum hydrocarbons closer to the ground surface. This is due to the fact that petroleum hydrocarbons are known to break down through bacterial activity into non-harmful carbon dioxide and water in soils when given enough time. The farther the contamination is from the groundwater table, the longer it will take for the contamination to reach groundwater, increasing the time during which natural break-down may occur. The purpose of the leachability study was to provide a basis for selecting clean-up levels for petroleum hydrocarbons in soil. The DTSC subsequently directed a more protective clean-up level for petroleum hydrocarbons.

Volatile organic compounds such as the chlorinated solvents found in soil vapor in the Central Fill Area generally move by infiltration through soils. The rate of movement can be affected by **dilution, dispersion, volatilization, and adsorption** to soil particles and organic carbon. The low organic carbon content of soils at the site suggests that chlorinated solvents should be relatively mobile in site soils. However, soils contaminated with petroleum hydrocarbons may adsorb and retain appreciable amounts of solvents. Groundwater monitoring and soil gas study results suggest that chlorinated solvents found in the Central Fill Area have infiltrated and are the source of the larger groundwater plume at the site.

In order to learn more about the potential for the inorganic contaminants arsenic and lead to migrate through the soil to groundwater, the **dissolution kinetics** of slag found at the site was assessed (Walsh & Associates, 1992). Samples of slag from the site were subjected to a variety of acidic water solutions. The resulting **leachate** was then tested to assess dissolved metal concentrations. The study results indicate that the chemical forms of arsenic and lead present in the slag are relatively **insoluble** over a wide range of pH. Based on this study, it is believed that lead and arsenic from slag at the site are not highly mobile in soils and therefore do not appear to present a threat to groundwater quality. Although nickel was generally not found in soil at concentrations exceeding the local background level, it has been found in groundwater below the site. There is no obvious explanation for the presence of nickel in groundwater.

3.3 HYDROGEOLOGICAL INVESTIGATIONS

Hydrogeological conditions have been investigated by the installation of 42 on-site and 15 off-site groundwater monitoring wells and piezometers, as well as **in-situ groundwater sampling**. To evaluate groundwater flow direction, depth to the water table has been measured in groundwater monitoring wells every three months since 1988. Groundwater samples have been collected from both permanent groundwater monitoring wells, and temporary groundwater monitoring points. These groundwater samples were collected at about 60 on-site and 70 off-site locations. Since 1988, over 700 groundwater samples have been analyzed for volatile organic compounds, and over 500 groundwater samples have been analyzed for metals.

3.3.1 Groundwater Conditions

3.3.1.1 Physical Characteristics

Groundwater beneath the site occurs at a depth of 25 to 35 feet below ground surface, which corresponds to an elevation of 2 to 8 feet below mean sea level. The **groundwater gradient** in the shallow water-bearing zone is approximately 0.002 to 0.003 linear feet per vertical foot, and groundwater

flow velocity is approximately 300 to 900 feet per year to the southeast. The groundwater gradient and flow direction in the next deeper water-bearing zone is the same as that of the shallowest zone, but the flow velocity is approximately 200 to 600 feet per year.

3.3.1.2 Local Groundwater Quality

In the site vicinity, groundwater is reported to be greater than 250 parts per million in total dissolved solids, which is a moderate level (United States Geological Survey, 1985). Local groundwater is reportedly moderately hard, low in chloride, sodium, manganese, and sulfate, as summarized in Table 3. Nearby wells located in William Land Park were originally used for public water supply until iron and coliform bacteria were detected at concentrations above drinking water standards. At this time, use of water from these wells is limited to irrigation.

3.3.1.3 Beneficial Uses

Groundwater in the Sacramento Valley groundwater basin is used for municipal and domestic supply, agricultural supply, and industrial process and service supply (California Regional Water Quality Control Board, 1991). Recent estimates indicate that nearly one-half of the total water supply for Sacramento County comes from groundwater (USGS, 1985). Groundwater accounts for 15 percent of the public drinking water supply in the City of Sacramento (Malmy, 1989).

3.3.2 Surface Water Conditions

3.3.2.1 Physical Characteristics

There are no bodies of surface water on the site. The only surface water bodies present in the vicinity of the site are the Sacramento River approximately 1 mile to the west and the American River approximately 3 miles to the north.

TABLE 3
QUALITY AND BENEFICIAL USES OF LOCAL WATER RESOURCES
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Name of Surface (S) or Groundwater (GW) Resource	Distance From or Depth Below Site	Quality of Resource in the Sacramento Area	Present Beneficial Use	Future Beneficial Use
Sacramento River (S)	1 mile to the west	Not applicable; no surface water resources located at site.	Municipal and domestic supply, irrigation, contact and non-contact recreation, freshwater habitat and navigation.	Municipal and domestic supply, irrigation, contact and non-contact recreation, freshwater habitat and navigation.
American River (S)	3 miles to the north	Not applicable; no surface water resources located at site.	Municipal and domestic supply, irrigation, industrial service supply, industrial power supply, contact and non-contact recreation, freshwater habitat/spawning/migration for warm and cold-water fish and wildlife habitat.	Municipal and domestic supply, irrigation, industrial service supply, industrial power supply, contact and non-contact recreation, freshwater habitat/spawning/migration for warm and cold-water fish and wildlife habitat.
Sacramento River Basin (GW)	21 to 35 feet below surface of site	Moderate total dissolved solids; moderately hard	Irrigation within a one-mile radius. Public water supply approximately 2 miles to the southeast.	Community and military water systems, domestic use.

Source: RWQCB, 1991; USGS, 1985.

3.3.2.2 Surface Water Quality

Water quality in the American and Sacramento River is tested by the City of Sacramento periodically prior to treatment and distribution to local water users. The quality of surface water from the Sacramento River is considered good 11 months out of the year (Meyer, 1991). Copper and iron levels are sometimes slightly elevated, but not above levels of concern. In the spring for one month water quality is typically impacted by low levels of herbicides from farms upstream of Sacramento. American River water quality is also said to be of better quality than Sacramento River water (Meyer, 1991).

3.3.2.3 Beneficial Uses

Beneficial uses listed for the segment of the American River in the vicinity of the site include municipal and domestic supply, irrigation, industrial service supply, industrial power, contact and non-contact recreation, freshwater habitat/migration/spawning for warm- and cold-water fish and wildlife habitat (RWQCB, 1991). Beneficial uses listed for the segment of the Sacramento River in the vicinity of the site include municipal and domestic supply, irrigation, contact and non-contact recreation, freshwater habitat/migration/spawning for warm- and cold-water fish, wildlife habitat and navigation (RWQCB, 1991). Beneficial uses of surface water are listed in Table 3. Treated surface water from both the American River and the Sacramento River accounts for 85 percent of the public drinking water supply in the City of Sacramento (Malmy, 1989).

3.4 GROUNDWATER CONTAMINATION ASSESSMENT

This section discusses how Remedial Investigation information concerning groundwater was interpreted.

3.4.1 Nature and Extent

Analytical results from extensive sampling conducted during the Remedial Investigation and subsequent investigations indicate that groundwater beneath the southern two-thirds of the site and areas southeast of the site has been impacted by volatile organic compounds and nickel (Dames & Moore, 1988, 1990a, 1990c, 1990d, 1991a, 1991b, 1991d, 1992d, 1993c, 1994a, 1994b, 1995a, and 1995d). There are no known surface water quality impacts due to activities at the site.

Groundwater investigations have evaluated the apparent lateral extent of contaminants in the first two water-bearing zones beneath the site. These investigations have found two plumes of impacted groundwater in the shallow water-bearing zone:

- Plume A (shown on Figure 8) extends from the Central Fill Area approximately 5,200 feet to the southeast and ranges in width from approximately 250 to 500 feet. Plume A contains volatile organic compounds and nickel, and extends into the second shallow water-bearing zone. Additional groundwater investigation work is planned to demonstrate whether this plume also extends into the third water-bearing zone.
- Plume B (also shown on Figure 8) extends from west of the former Main Shop area approximately 1,200 feet to the southeast across Sutterville Avenue. This groundwater plume contains volatile organic compounds and nickel and is believed to be contained within the first shallow water-bearing zone.

Volatile organic compounds impacting groundwater in Plume A appear to have originated in the Central Fill Area. Two potential sources have been identified. An aerial photograph taken in 1953 indicates a surface impoundment was present near the northern part of the Central Fill Area. The contents of the former impoundment are not known. Additionally, exploratory excavations conducted in the Central Fill Area revealed the presence of buried debris, including drums.

Additional subsurface investigation in October 1993 revealed the presence of minor groundwater impacts in the northeastern portion of the active yard (see Figure 8, Plume C). Low concentrations of diesel fuel were detected in groundwater samples from three of six samples. The samples were not reported to contain detectable concentrations of toxic hydrocarbon constituents. As shown on Figure 8, the diesel fuel groundwater impacts are contained within the property boundary. Further investigation work and groundwater monitoring will be done.

3.4.2 Groundwater Contaminant Mobility

Mobility refers to the ways contaminants can move from the area where they were originally released. In general, groundwater contaminant transport is controlled by **advection** and dispersion. Advection is the process of movement of the contaminant due to the movement of groundwater. Dispersion is the tendency of the contaminant to spread away from the point of origin. Dispersion causes the contaminant to be diluted due to mixing with non-contaminated groundwater and, to a lesser degree, diffusion of the contaminant.

Volatile organic compounds degrade naturally in groundwater over time. Additionally, they become diluted in groundwater as the plume spreads. However, some of the daughter compounds resulting from degradation (for example, vinyl chloride) may be more toxic than the parent compound. The overall effect of degradation and dilution of volatile organic compounds in groundwater will be to lower concentrations over time. Dissolved metals in groundwater often become adsorbed to soil particles, thereby reducing their concentrations in groundwater.

Volatile organic compounds in Plume A have moved approximately 5,200 feet to the southeast of the suspected on-site source. Preliminary **groundwater modeling** was completed early in the groundwater investigation. The model was used to simulate the transport of groundwater contaminants for two scenarios: 10 years after release and 30 years after release. Information from subsequent groundwater investigations indicates that the current extent of Plume A is approximately the same as was predicted during modeling using a 30-year release scenario. These preliminary results suggest that volatile organic compounds present in Plume A were released to groundwater approximately 30 years ago.

3.5 AIR INVESTIGATION

Air quality impacts that might be caused by contaminants present in soil at the site were also investigated. There are two potential sources of air contamination for this site: dust contaminated with metals or asbestos, and vapors from volatile organic soil contaminants. Each potential source is discussed separately below.

3.5.1 Investigation of Air Quality

Three separate **ambient** air quality studies have been conducted at the site. The first study was conducted in 1988 as part of the original Remedial Investigation. Air samples collected over an eleven-day period were analyzed for arsenic, copper, lead, and dust. Also, air samples collected for 12 hours per day over a five-day period were analyzed for asbestos. Wind speed and direction were monitored during the study.

During the first study, no detectable levels of arsenic, copper or lead were found (Dames & Moore, 1988). Of thirty samples analyzed for asbestos, one sample was found to contain asbestos at a concentration of 0.0016 fibers per cubic centimeter of air (approximately 2 fibers per quart of air). This asbestos concentration is considered normal for urban areas (California Air Resources Board, 1990). The DTSC considers the first air quality study invalid.

A second air quality study was conducted at the site in July and August 1992. For this study, 24-hour air samples were collected each day at six stations over a 14-day study period. Three sampling stations were located **upwind** of the site to measure background air contaminant concentrations, and three were positioned **downwind** to provide an indication of how soil contaminants affect air quality near the site. Wind speed and direction were monitored at an on-site **meteorological station**. Air samples were tested for arsenic, lead, asbestos, and dust. A total of 79 air samples were tested for arsenic and lead. Forty-two samples came from the upwind stations, and 37 were collected at the downwind stations. Eighty air samples were tested for asbestos. For lead and arsenic, the average concentrations were slightly higher at the upwind sampling stations. The average of the asbestos test results was slightly higher for the downwind stations. Based on the results of the second sampling and analysis study, air quality in the site vicinity does not appear to be impacted by dust, asbestos, arsenic, copper, or lead present in soil at the site (Dames & Moore, 1992d).

A third air quality study was performed in the active railyard in 1994 (Dames & Moore, 1995b) to evaluate the levels of arsenic and lead present in dust generated primarily by vehicular traffic and work activities in the active railyard. This study consisted of three separate rounds of air monitoring (August,

October, and November), in which samples were collected from four locations surrounding the active railyard and one background station located on top of Hughes Stadium at Sacramento City College. Each monitoring round lasted for five days with air samples collected over an eight-hour period corresponding to the working day. A total of 19 samples were tested for metals concentrations. Arsenic was only detected in one background sample and one on-site sample at concentrations that were within the range of analytical detection limits for arsenic. Lead was detected in every sample analyzed including all background samples, but concentrations were much less than the ambient air quality standard for lead of 1 microgram per cubic meter.

3.5.2 Investigation of Soil Vapors

Two soil vapor studies have been conducted in the former Oil House Area and Central Fill Area of the inactive portion of the site. The first study was performed in 1991 and the second in 1994. The purpose of the 1991 study was to assess potential health risks due to vapors released from the soil to the air. During the 1991 study, soil vapors were extracted from between three and 10 feet below ground surface. Vapor samples were analyzed for selected volatile organic compounds.

In the former Oil House Area, eight vapor samples were collected from six locations in the 1991 study. At two of the sampling locations, samples were collected at two different depths. Low levels of volatile organic compounds were detected in four of eight samples (Dames & Moore, 1991d).

In the Central Fill Area 26 samples were collected from 19 locations in the 1991 study. Samples were collected at two depths from seven of the locations. Low levels of volatile organic compounds were detected in 19 of 26 samples collected (Dames & Moore, 1991d).

The results of the 1991 study showed that the low levels of volatile organic compounds detected in soil vapors do not pose a risk to human health or air quality.

In 1994, an additional soil vapor investigation was performed to gather soil vapor data as part of an assessment of the potential for volatile organic compounds in soil to impact groundwater quality. Data from the investigation was used to develop cleanup levels for chlorinated volatile organic compounds in soil that are protective of human health and groundwater quality for future beneficial uses.

The results of the 1994 soil vapor study were presented in the report, Development of Remedial Action Objectives for Volatile Organic Compounds in Soil in the Central Fill and Oil House Areas (Dames & Moore, 1994c).

During the 1994 study, soil vapor samples were collected from 25 locations in the Central Fill Area at 3 depths. In the Oil House Area, soil vapor samples were collected from 15 locations at 3 depths.

The 1994 study found that volatile organic compounds were primarily concentrated in two areas within the Central Fill Area — the northwestern portion of the Central Fill Area where the highest concentrations were found in the 1991 study, and the southeastern portion of the Central Fill Area (reference).

The results of the 1994 soil vapor survey showed that in both the Central Fill and Oil House areas, the highest concentrations of volatile organic compounds were found in samples collected from the middle depth interval (approximately 12 to 15 feet below ground surface), or deepest interval (approximately 19 to 26 feet below ground surface). Concentrations of volatile organic compounds in samples collected during the 1994 study were similar to those found during the 1991 study.

In the Oil House Area, concentrations of volatile organic compounds were much lower than in the Central Fill Area. One deep-interval sample found elevated concentrations of the volatile petroleum hydrocarbon compounds benzene, toluene, ethylbenzene, and xylenes. However, this sample was collected very close to the water table in an area where the constituents are known to be elevated in groundwater. The elevated soil vapor detections of the compounds are believed to be due to the close proximity of the sample to the water table.

3.6 AIR CONTAMINATION ASSESSMENT

The 1991 soil vapor study described above suggests that emissions of volatile organic compound vapors into air would be minimal, and they are therefore not considered significant.

It is also possible that contaminated dust from the site could become suspended in air. The potential for dust to become suspended depends upon particle size, the extent of crust or aggregate formation in surface soils, and the extent of vegetation or non-erodible elements (such as rocks or concrete foundations) in the soil. Vegetation on the site is sparse, although the ground surface contains numerous non-erodible elements, including paving, debris and track ballast. Arsenic and lead occur in mining slag that was used as railroad track ballast at the site. Arsenic and lead have the greatest potential for emissions to the air in the form of resuspended dust. However, slag was removed from the inactive portion of the site and part of the active railyard in late 1993. Asbestos contamination is limited to a much smaller area, which has been revegetated to reduce potential air transport. The results of two

ambient air quality studies performed for the entire site and the active railyard suggest that arsenic, lead, and asbestos present in site soils are not currently causing air quality impacts.

3.7 BIOLOGICAL INVESTIGATION

An investigation of potential biological receptors at and in the vicinity of the site was conducted using information gathered from the California Natural Diversity Database (CNDDDB) (California Department of Fish and Game, 1991) and the California Wildlife Habitat Relationships (WHR) Database (California Department of Fish and Game, 1989).

The CNDDDB is a computerized inventory of species of special concern that contains information on more than 1,200 species in over 18,000 locations throughout the state. The CNDDDB is maintained by the California Department of Fish and Game and The Nature Conservancy. The WHR Database contains information on 644 species of terrestrial vertebrates and where these species have been found in the State.

General observations of the site were made during a site visit, but no detailed field studies were undertaken.

3.7.1 Description of Habitats

The site is located in an urban residential area where potential wildlife habitats are limited. Most of the site is devoid of vegetation due to paving, railroad track ballast, gravel, debris, and land disturbances such as extensive grading. Flora (plant life) is limited to grasses along the eastern and northern boundaries and in the northeast quarter of the site. There are also some exotic forbes (herbs other than grasses). Vegetation includes mixed grasses, upland sedge, and a variety of weedy species, such as wild oat, rye-grass, bermuda grass, dock, Russian thistle, and dandelion. A few scattered shrubs are present, as well as one large Valley Oak, and a cottonwood located near the northern boundary of the site. No rare or endangered plant species were observed (Dames & Moore, 1991b), although the Valley Oak is on the California Native Plant Society Watch List and is protected under California Senate Concurrent Resolution #17 (1989) and the Sacramento County Tree Preservation Ordinance (Resolution #31-1007, 1981).

No mammals or reptiles were observed on the site, although the site could potentially support rodents or other small mammals along the eastern boundary (the location of the above-described vegetation). Bird species observed included a variety of common songbirds: sparrows, blackbirds, and starlings. Crows and an American kestrel were observed during later phases of the Remedial

Investigation (Dames & Moore, 1991b). A burrowing owl was observed on-site in late 1993. Due to site disturbance, sparse cover, and limited varieties of plant species, the site constitutes poor quality animal habitat.

The results of the CNDDDB survey (extending in a 5-mile radius in all directions from the site) indicate that several species of particular concern have been sighted in the general vicinity of the site. These species and the location(s) of sightings are as follows:

Great Valley Cottonwood Riparian Forest

- Yolo County side of Sacramento River at Broderick from river mile 59.8 to river mile 62.

Elderberry Savanna

- California State Exposition (Cal Expo) on American River Floodplain from the Southern Pacific Railroad tracks east to just beyond Highway 80.

Swainsons Hawk (Buteo Swainsoni)

- Sacramento River at Chickory Bend (east side of river);
- Natomas Drainage Canal 0.5 mile north of Discovery Park, south side of the Sacramento River;
- Sacramento River, 1 mile northwest of I-80; and
- Discovery Park.

Western Yellow Billed Cuckoo (Coccyzus Americanus Occidentalis)

- Sacramento Bypass (none observed since 1965).

Burrowing Owl (Athene Cunicularia)

- Vicinity of McKinley Park, southwest of Cal Expo;
- Southwest of junction of Howe Avenue and Fair Oaks Boulevard; and
- Sacramento State College and adjacent levee areas along the American River.

Bank Swallow (Riparia Riparia)

- South side of the American River, upstream of Cal Expo, near Business 80 bridge.

Tricolored Blackbird (Agelaius Tricolor)

- Near Port of Sacramento, just south of Highway 80, Interstate 80 junction.

Valley Elderberry Longhorn Beetle (Desmocerus Californicus Dimorphus)

- Just south of Highway 160 at Del Paso Boulevard;
- South bank of the American River, west of Hall Park (across from Cal Expo) river mile 5;
- Bushy Lake, Cal Expo;
- American River floodplain parcel between railroad track overpasses (between I-80 and Highway 160);
- Between mileage markers 6 and 7 on American River Parkway bike trail;
- Sacramento River mile 62.5 west at I-80;
- Sacramento River opposite mouth of American River, at river mile 60.3 and 59.8, west bank; and
- Sacramento River, opposite junction with Natomas, main drainage canal, river mile 61.

Dwarf Downingia (Downingia Humilis)

- Keithly Ranch, Rio Linda, north of Sacramento.

Most of these species were sighted along the riparian corridors of the American or Sacramento Rivers. Table 4 provides a summary of the distance between the site and the nearest observation of each species and the type of cover, food, and foraging opportunities that these species require. The site itself does not provide an adequate habitat for these identified species of concern.

3.7.2 Food Chain Analysis

A food chain analysis was conducted because of the potential for transfer of contaminants from organisms which are lower on the food chain (such as insects), to those higher on the food chain (such as birds of prey, mammalian predators, and man). In order for this transfer to be significant, accumulation of contaminants would have to occur in organisms living at a site with contaminants present. However, because of the limited quantity and poor quality of vegetation and habitat, contaminants found at the site are not likely to impact land-based animals. Exposure to contaminants is likely to be restricted to invertebrates, earthworms, insects, and the plants on the site. Animals who forage on these substances may be exposed. However, their exposures are likely to be transitory because the site apparently provides little food and cover. This diminishes the ability of the site to attract species of concern.

3.7.3 Contamination Assessment

Because of the absence of suitable habitat at and in the vicinity of the site, it is not likely that plants or animals will be significantly impacted by contaminants found on the site.

TABLE 4
NON-HUMAN BIOLOGICAL RECEPTORS:
SUMMARY OF CALIFORNIA NATURAL DIVERSITY DATABASE
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

Species	Approximate Distance to Nearest Sighting (miles)	Cover	Food/Foraging Habits
Swainson's Hawk	3.5	Oak savannah, roosts in large trees, but will roost on ground if none available.	Forages in grasslands or adjacent grain or alfalfa fields. Eats mice, gophers, ground squirrels, rabbits, large arthropods, amphibians, reptiles, birds, and rarely fish.
Yellow-billed Cuckoo	5.9	Densely foliated, deciduous trees and shrubs, especially willows, required for roosting.	Gleans large insects from foliage.
Burrowing Owl	2.0*	Rodent or other burrows for roosting and nesting cover.	Mostly insects, also small mammals, reptiles, birds, and carrion.
Bank Swallow	3.2	Holes in cliffs in river banks for cover. Frequents near bodies of water.	Forages by hawking insects during long gliding flights. Feeds predominantly over open riparian areas, but also over brushland, grasslands, and cropland.
Tricolored Blackbird	4.3	Breeds near emergent wetlands, especially areas with cattails, and tules, also in trees and shrubs.	Feeds on insects, seeds, and cultivated grains. Forages on ground in croplands, grassy fields, flooded land, and along edges of ponds.
Valley Elderberry Longhorn Beetle	3.2	Found only in Elderberry Savannah.	Larvae are borers, adults feed on foliage.
Dwarf Downinga	8.5	Flowering plant species associated with vernal pools.	Needs conditions required for vernal pools.

Source: Zeiner *et al.*, 1990.

* A burrowing owl was observed on-site in late 1993; however, no burrow was found.

4.0 HEALTH AND SAFETY RISKS

A **Health Risk Assessment** was performed to evaluate the potential for adverse human health and environmental effects at the site under current conditions using the results and information presented in the Remedial Investigation. The Remedial Investigation concluded that the most common contaminants at the site were:

- Metals in soil (arsenic and lead)
- Petroleum hydrocarbons and polycyclic aromatic hydrocarbons in soil
- Volatile organic compounds and nickel in groundwater.

This section presents a summary of the Health Risk Assessment conducted at the UPRR Sacramento yard site.

The purpose of a Health Risk Assessment is to:

- Evaluate potential means of exposure to site contaminants under current site conditions and in the future (assuming the site is not cleaned up).
- Estimate potential health risks associated with exposure to contaminants detected in soil, air, and groundwater for current and future site occupants.
- Identify contaminants of potential human health and environmental concern which will need to be addressed in the site remedial action.

A Health Risk Assessment, conservative by design in order protect human health and the environment, tends to overstate the potential for human contact with chemicals detected in site soil and groundwater, and may overestimate the risk of adverse health effects associated with chemical contact.

The Health Risk Assessment for the site was prepared according to guidelines provided by the U.S. Environmental Protection Agency (EPA) and the DTSC, and is contained in several reports. The Supplement to the Revised Baseline Health Risk Assessment (Dames & Moore, 1992a) was used as the basis for this discussion of risks posed by the site in its present condition. A chronologic list of Health Risk Assessment reports and related DTSC correspondence follows:

- The Health Risk Assessment was submitted to DTSC in August 1990.
- Comments on the Health Risk Assessment were received from DTSC in March 1991.
- Comments were addressed in the Revised Baseline Health Risk Assessment (see Appendix J of the Addendum Remedial Investigation/Feasibility Study Report).

- Comments by the DTSC on the Revised Baseline Health Risk Assessment were received in March 1992.
- Comments were addressed and presented to the DTSC in the Supplement to the Revised Baseline Health Risk Assessment and Development of Remedial Action Objectives for the Union Pacific Railroad Yard in September 1992.
- Comments of the DTSC on the Supplement to the Revised Health Risk Assessment and the Development of Remedial Action for the Union Pacific Railroad Yard, and DTSC-acceptable cleanup levels were received from the DTSC in January 1993 .

4.1 EXPOSURE SCENARIOS AND PATHWAYS

To evaluate exposure, the physical characteristics and current and future land use at and near the site were evaluated. This information helps identify potential points of contact between humans and chemicals associated with the site. Individuals that could become exposed to contaminants detected at the site (receptors) and possible means of exposure (pathways) associated with the site are summarized in Table 5.

The **exposure scenarios** describe the activities and site conditions through which receptors could become exposed to contaminants at the site. An **exposure pathway** is the means by which individuals could become exposed to contaminants detected at the site. An exposure pathway links the source of environmental release with population locations and activity patterns to assess the significant pathways of human exposure. Potential pathways other than those described above were also examined, but judged not likely to exist for this site.

Trespassers are individuals who could gain access to the site and have contact with contaminants in the soil. For the purposes of the Health Risk Assessment, it was assumed that off-site residents live directly adjacent to the site at the location where the highest levels of contaminants in air (from wind-blown dust) are expected to be found. Future development of the site will probably prevent wind-blown dust by covering much of the site with buildings, landscaping, and roads. However, the exposure scenarios associated with future land use in the Health Risk Assessment assumed the presence of hypothetical on-site residents on the unremediated site. This is the most health-protective approach and would tend to provide the highest risk estimates.

Considering the exposure pathways and scenarios listed in Table 5, conservative assumptions regarding exposure duration and contaminant intake were used to calculate numerical estimates of health risks based on site-specific information and regulatory guidance. These assumptions provide a conservative estimate of risks associated with exposure to site contaminants. A summary of selected assumptions used in the Health Risk Assessment is provided in Table 6.

4.2 RISK CHARACTERIZATION

Risk characterization provides numerical estimates of the existence and magnitude of potential human health risk concerns related to contamination at the site. Carcinogenic (cancer-causing) and non-carcinogenic health effects due to chemical exposure are characterized in two different ways:

- Calculation of a **Hazard Quotient** (for non-carcinogenic chemicals); and
- Calculation of the **estimated lifetime cancer risk** (for carcinogenic chemicals).

The cancer risks and hazard quotients for each particular chemical were summed to provide an estimate of total risks. Health risks associated with the site are discussed in the following sections. A summary of the risk characterization is provided in Table 7.

4.2.1 Non-carcinogenic Effects

Non-carcinogenic health effects were estimated by calculating a hazard quotient for each non-carcinogenic contaminant. A hazard quotient is the ratio of the predicted intake of a particular chemical and the intake limit established by either the DTSC or the U.S. EPA. Hazard quotients are grouped by similar effects (such as liver disease or kidney disease) and the sum of these quotients is referred to as the Hazard Index. A Hazard Index less than one indicates there is very little chance of adverse health effects. It should be noted that a Hazard Index is not utilized to calculate health effects from exposure to lead. Instead, mathematical models are used to predict blood lead levels based on exposure to **upper bound concentrations** of contaminants at the site. The following summarizes the major non-carcinogenic risks:

- The hazard quotient for 1,1-dichloroethene (in groundwater) exceeded one in all future scenarios, indicating that the estimated intake would exceed regulatory criteria. In addition, arsenic and thallium exceeded one in the future on-site resident scenario.
- When hazard quotients were summed by critical effect to calculate the hazard index, only the hazard index for liver damage exceeded one.

TABLE 5
BASELINE HEALTH RISK ASSESSMENT
EXPOSURE SCENARIOS AND PATHWAYS
 UNION PACIFIC RAILROAD
 SACRAMENTO, CALIFORNIA

EXPOSURE SCENARIO	POSSIBLE EXPOSURE PATHWAYS
Current Land Use	
Trespassers (on the site)	Dermal (skin) contact with contaminated soil Ingestion of contaminated soil Inhalation of contaminated dust (from wind-blown soil)
Off-site residents	Inhalation of contaminated dust
Future Land Use (assuming site is not cleaned up)	
Off-site residents	Inhalation of contaminated dust Dermal contact (showering/bathing) with contaminated groundwater from off-site wells Vapor inhalation (showering) with contaminated groundwater from off-site wells Ingestion of contaminated groundwater from off-site wells
Hypothetical on-site residents	Dermal contact with contaminated soil Ingestion of contaminated soil Dermal contact (showering/bathing) with contaminated groundwater from on-site wells Vapor inhalation (showering) with contaminated groundwater from on-site wells Ingestion of contaminated groundwater from on-site wells

TABLE 6
SELECTED ASSUMPTIONS USED IN
THE HEALTH RISK ASSESSMENT
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Variable	Assumed Value	Applicable Exposure Pathways
Exposure Frequency Adult Resident Child Resident Trespasser	350 days per year 350 days per year 104 days per year	All
Exposure Duration Adult Resident Child Resident Trespasser	24 years 6 years 8 years	All
Body Weight Adult Child Trespasser	154 pounds 33 pounds 111 pounds	All
Soil Ingestion Rate Adult Child	1/300 ounce per day (1/8 teaspoon) 1/150 ounce per day (1/4 teaspoon)	Soil Ingestion Only
Exposure Time Adult Resident Child Resident Trespasser	24 hours per day 24 hours per day 8 hours per day	Particulate (Soil) Inhalation Only
Groundwater Ingestion Rate Adult Child	1 3/4 quarts per day 1 1/4 quarts per day	Groundwater Ingestion Only
Exposure Time Adult Child	15 minutes per day 15 minutes per day	During bathing only: Groundwater Skin Contact/Vapor Inhalation Only Groundwater Skin Contact Only

Notes: Other assumptions used in the Health Risk Assessment include skin surface area, inhalation volumes, and other more technical assumptions.

For each exposure scenario and pathway examined in the Health Risk Assessment, the assumptions are combined when calculating estimates of health risks.

Example 1: When estimating risks associated with childhood ingestion of soil, it was assumed that a child weighing 33 pounds swallows 1/150 ounce (1/4 teaspoon) of contaminated soil per day (350 days per year) for six years. This is equivalent to swallowing 2 1/4 ounces per year for six years.

Example 2: Risk estimates for adverse health effects on adults drinking contaminated groundwater were calculated assuming an adult weighing 154 pounds drinks 1 3/4 quarts of contaminated groundwater per day (350 days per year) for 24 years.

Example 3: Risk estimates for trespassers assume the trespasser is a child weighing 111 pounds who spends 8 hours per day at the unremediated site 104 days per year for 8 years. The trespasser's exposure is assumed to begin when he is 9 years old, and continues until he is 17.

Example 4: Life-time cancer risk estimates for children were calculated assuming that the childhood exposure lasts for 6 years and that the individual continues to be exposed for an additional 24 years as an adult.

- The primary concern for lead exposure is the potential for learning deficits in children under five years old. A direct indication of intake can be obtained from the level of lead in blood. The U.S. EPA and the DTSC consider blood lead levels exceeding 10 **micrograms per deciliter** ($\mu\text{g}/\text{dL}$) to be a level of concern. This blood lead level is associated with ingesting soil with a concentration of 300 parts per million or more (Dames & Moore, 1991d). Although the average lead concentration in soil at the UPRR site is 477 parts per million (ppm), the distribution of lead contamination at the site is uneven (*i.e.*, "hot spots" exist). This suggests that blood lead levels may be lower than predicted in the Health Risk Assessment. At the concentration examined, blood lead levels should not exceed 10 micrograms per deciliter in more than five percent of exposed children. It should be noted that in urbanized areas, blood lead levels above 10 micrograms per deciliter are not uncommon and may be attributable to a number of potential lead sources (including house paint, glazed ceramic dishes, and lead solder used in household plumbing).

4.2.2 Carcinogenic Effects

As a means of predicting possible carcinogenic effects, the Health Risk Assessment included estimating the lifetime cancer risk for each receptor. For carcinogenic effects, the U.S. EPA requires remedial action when conditions at a site cause a calculated cancer risk of 1×10^{-6} (one in one million) or greater, although action may depend on site-specific conditions.

- Estimated lifetime cancer risks potentially associated with trespassers or off-site residents (current land use) range from nine-in-one million (9×10^{-6}) to nine-in-one hundred thousand (9×10^{-5}).
- Estimated lifetime cancer risks potentially associated with future on- or off-site residents range from six-in-one hundred thousand (6×10^{-5}) to two-in-one thousand (2×10^{-3}).
- The chemicals providing the greatest contribution to the estimated cancer risks are arsenic in soil, and benzene, 1,2-dichloroethane, and carbon tetrachloride in groundwater.
- Most of the cancer risk associated with contact with soil can be attributed to the presence of arsenic. It should be noted that site activities are not believed to be the only source of arsenic in soil at the site. Average background concentrations of arsenic in natural soil in the area of the site (approximately 8 mg/kg) represent a lifetime cancer risk of two in ten thousand (2×10^{-4}). The primary source of arsenic due to site activities is slag. The metals in the slag are bound tightly to the slag matrix and are therefore not very **bioavailable**. The low bioavailability was not accounted for in the risk analysis, and the potential health risk from exposure to arsenic in slag may therefore have been overestimated by a factor of four. In order to determine the actual bioavailability of arsenic in slag, an animal study was recently performed (report pending). The study demonstrated that arsenic in the slag material has no bioavailability.

4.2.3 Effects on Non-Human Receptors

No significant effects on plants and animals from chemicals found on the site were anticipated due to the lack of substantial wildlife habitat in the site vicinity.

TABLE 7
SUMMARY OF HUMAN HEALTH RISKS
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Carcinogenic Effects			Exposure Scenario (Receptor and Activity)	Non-Carcinogenic Effects	
Estimated Lifetime Cancer Risk	Chemicals with Highest Contribution to Cumulative Cancer Risks	Exposure Pathways with Cancer Risks Exceeding 1×10^{-6}		Non-Carcinogenic Hazard Index	Chemicals Whose Hazard Index Exceeds 1
9×10^{-6}	Arsenic, carcinogenic PAHs	Soil ingestion; none	Current On-Site Trespasser	< 1	None
4×10^{-5} 5×10^{-5} 9×10^{-5}	Arsenic Arsenic Arsenic	Inhalation of Outdoor Air Inhalation of Outdoor Air Inhalation of Outdoor Air	Current Off-Site Residents Adult Child Adult and Child (total)	< 1 < 1 < 1	None
4×10^{-5} 5×10^{-5} 1×10^{-4}	Arsenic; 1,2-dichloroethane; carbon tetrachloride Arsenic; 1,2-dichloroethane; carbon tetrachloride Arsenic; 1,2-dichloroethane; carbon tetrachloride	Inhalation of Outdoor Air; dermal contact (showering); dermal contact (showering) Inhalation of Outdoor Air; dermal contact (showering); dermal contact (showering) Inhalation of Outdoor Air; dermal contact (showering); dermal contact (showering)	Future Off-site Residents Adult Child Adult and Child (total)	> 1 > 1 > 1	1,1-dichloroethene 1,1-dichloroethene 1,1-dichloroethene
1×10^{-3} 7×10^{-4} 2×10^{-3}	Benzene, arsenic Benzene, arsenic Benzene, arsenic	Vapor inhalation (showering); groundwater ingestion; groundwater ingestion Dermal contact (bathing); groundwater ingestion; ground water ingestion Dermal contact (bathing); groundwater ingestion; groundwater ingestion	Future On-Site Residents Adult Child Adult and Child (total)	> 1 > 1 > 1	1,1-dichloroethene Thallium; 1,1-dichloroethene Arsenic; thallium; 1,1-dichloroethene

NOTES: Estimated Lifetime Cancer Risk is the sum of all cancer risks associated with contaminants at the site.

5.0 EFFECTS OF CONTAMINATION

This section presents a discussion of the potential effects of soil and groundwater contamination upon uses of land and water at the site. It is organized to discuss land and groundwater separately in terms of present uses and potential beneficial future uses.

5.1 PRESENT AND FUTURE USES OF LAND

5.1.1 Present Uses

The site is divided into an inactive portion and the active yard, as described in Section 2.1.1. The inactive portion covers approximately 63 acres, is fenced and unoccupied. The active yard covers approximately 31 acres, and is currently in use as a railroad switching yard. The General Plan of the City of Sacramento (City of Sacramento, 1988) designates the site for transportation/utilities use. The entire site is currently zoned for heavy industrial use (M-2) under the City Zoning Ordinance, which is consistent with the use of the site as a railroad switching yard. Current zoning and land uses at and near the site are shown on Figures 9 and 10.

The majority of land uses surrounding the site are low-density residential (single family dwellings). A cold storage facility borders the site to the southwest, and one major educational institution (Sacramento City College) is adjacent to the southwest corner of the site. Additionally, some commercial and manufacturing facilities are present to the south along Sutterville Road, and to the west along Freeport Boulevard.

5.1.2 Future Uses

5.1.2.1 Active Yard

There are no plans to change land use in the 31-acre active yard portion of the site, which is operated as a railroad switching yard by UPRR.

5.1.2.2 Inactive Portion of the Site

A potential health risk is posed by the inactive portion of the site in its present state. Future land uses at the site will depend partly on the degree of risk reduction achieved through remediation of soil and groundwater contamination.

No formalized land use designations or redevelopment strategies have been approved for the inactive portion of the site. Approval of a finalized land use plan will require the same procedures typically required of other land use applications within the City of Sacramento. Typical land use planning procedures are summarized below.

- Initial reviews with the Planning and Development Department (including Policy Committee review and requests for plan/project re-design, if warranted).
- Preparation of an environmental document to assess potential impacts and mitigation associated with or required by the proposed development project.
- Review and decision by the City Planning Commission (with assistance from planning staff in the form of a staff report).
- Review and decision by the City Council, if warranted.
- Opportunities for public involvement in the process, including written comments on the project plans solicited from community organizations, combined meetings with planning staff, community organizations and the applicant (if necessary), public notice of hearings and the determination of environmental impacts, defined public review periods during preparation of the environmental document, and attendance at public hearings.

The Sacramento City Council appointed the Union Pacific Land Use Committee (UPLUC) to prepare land-use recommendations for the inactive portion of the site. Members of the UPLUC include twelve residents of neighborhoods near the site. Based on information gathered from public meetings and land use planners, the UPLUC prepared recommendations on future land use in February 1992. A series of community workshops were held in March 1992 to give members of the public an opportunity to comment on the recommendations. The UPLUC recommendations were then finalized and presented in a report to the Sacramento City Council in April 1992. The City Council adopted Resolution Number 92-255 endorsing the report and directed the City Planning Division to incorporate the UPLUC recommendations into future land-use planning activities. Appendix A contains a copy of the resolution and the UPLUC report.

Potential future land uses identified by UPLUC for the inactive portion of the site include:

- Residential Use - single family homes, higher density housing (for seniors, families, or students), mixed use (combined residential and light commercial), and low/moderate income housing.
- Open Space and Recreational Use - parks, open space, town square, bike paths, pedestrian walkways, and community recreational facilities.

- Commercial Use - community- and neighborhood-serving business, office spaces, and mixed commercial/residential development with emphasis on pedestrian patronage rather than automobiles.
- Schools - additional schools may be needed because of residential growth in the area. Also, the expansion needs of Sacramento City College will be considered.
- Light Rail - The UPLUC supports extension of the City's light rail service to the southern part of the city along the UPRR route and the establishment of one or more light rail stations on the site. Pedestrian-oriented stations with limited parking areas are preferred.

The report emphasized the desire to plan redevelopment of the site to be compatible with existing residential, educational, and commercial land uses in the vicinity. The UPLUC also recommended that clean-up levels for the site be developed based on these future land uses. In general, the UPLUC identified preferred future land uses for the northern area as being residential, open space/town square, and neighborhood commercial. For the southern portion of the site, it prefers mixed commercial/residential, commercial, urban open space, and other special uses (such as City College expansion).

The DTSC met with the Sacramento Planning Department and UPRR in March 1992 to discuss future land use. Following the meeting, the DTSC sent a letter to the Planning Department which discussed how clean-up levels for the site would relate to future land uses (see Appendix B). The DTSC recommended that future land uses be broken down into two general categories:

- Restricted Land Use - mixed use (with non-residential on the ground floor), other non-residential use, recreational facilities, community center, town square, and infrastructure (such as underground sewer storage). Areas designated for restricted land use would have a permanent deed restriction to prevent future land uses other than those specified and improper future excavation and disposal of contaminated materials. Clean-up levels would be developed based on conservative exposure scenarios and the land would be developed to prevent exposure to residual contaminated materials. This would be achieved through a combination of buildings, pavement, and controlled landscaping to cover the impacted soil.
- Unrestricted Land Use - any type of land use including those listed under restricted land use, as well as residential, schools, open space, and bike/pedestrian pathways. The DTSC recommended that areas planned for unrestricted future land use should be those portions of the site least impacted by past industrial activities (i.e., the northeastern portion of the site) or areas where the soil is cleaned up to an acceptable level. The clean-up levels for the unrestricted land use would be developed to be protective of human health for the land uses specified.

Based on the past industrial uses and the distribution of contaminants in soil at the site, the DTSC prepared a general map showing potential future land uses (restricted and unrestricted). A copy of the letter and map are presented in Appendix B. Future land-use recommendations of the UPLUC and the DTSC were used to develop generalized assumptions about future land use at the site and soil clean-up levels applicable for each type of land use. The land-use assumptions and clean-up levels used in the feasibility study are discussed in Section 6.1.

It is expected that the site will be developed for residential mixed use. The City has initiated the rezoning of the site for residential/mixed use. UPRR will prepare a land use plan for the site which will accommodate the objectives of UPRR, the City, and the community concerns. The plan will be submitted to the City for the necessary governmental approvals. However, at this time, it is not known where specific land uses will occur. The Union Pacific Land Use Committee Report, adopted by the City Council on April 14, 1992, strongly recommended the development of housing and mixed use/housing on the site. The cleanup levels proposed in the RAP provide for unrestricted land use on approximately one-third of the site, with the remainder of the site providing for a restricted land use that will allow mixed use. The final land use plan may require additional portions of the site to be remediated to unrestricted use levels beyond the area indicated in the RAP. Soil remediation to accomplish the objectives proposed in the RAP will proceed at this time. The Department, UPRR, and the City have agreed that it is not cost-effective to remediate the entire site at this time to the unrestricted land use level that would allow single-family residential land use.

After finalization of a land use plan by the City and prior to development construction, UPRR will perform, at its cost, a second phase of remediation in a manner consistent with the RAP to allow the specific land uses defined and scheduled in the land use plan. The Department will maintain enforceable oversight for the site until remedial actions are completed which allow for implementation of the City-approved land use plan.

5.1.3 Potential Effects

Existing soil contamination adversely affects potential land uses of the site. If the site were left unremediated, portions of the site would not be suitable for most beneficial land uses. Because the current industrial use of the active yard is not expected to change, the effects on future land use would be most pronounced in the eastern inactive portion, which is currently vacant.

Remediation of soil contamination would have a beneficial effect on future land use. Depending on clean-up levels, many types of future development could be allowed.

5.2 PRESENT AND FUTURE USES OF WATER

5.2.1 Surface Water

5.2.1.1 Present Uses

There are no surface water resources at the site. The closest surface water resources in the area are the Sacramento River approximately one mile to the west, and the American River almost three miles to the north. Beneficial uses and water quality for the Sacramento and American Rivers were discussed in Section 3.2.2.

Surface flow at the site is limited to storm water. Storm water at the site generally drains to the east along the middle part of the inactive portion of the site next to residences along 24th Street, and to the southwest towards the tracks in the active yard. Drainage along the western boundary of the site is directed to street culverts. The flow from both portions of the site is directed into combined sewer/storm drains which carry the storm water to the Sacramento Regional Wastewater Treatment Plant. The storm water is treated at the plant before being discharged into the Sacramento River.

5.2.1.2 Future Uses

Present beneficial uses for the Sacramento and American Rivers are expected to continue indefinitely. No future uses other than those described in Section 3.2.2.3 have been identified by the Regional Water Quality Control Board at this time (RWQCB, 1991).

5.2.1.3 Potential Effects

Under current conditions, storm water run-off from the site may potentially come in contact with soil contaminants, and contaminated run-off and sediments may be transported off-site to City storm drains. The proposed remediation for site soils includes removing or covering sources of contamination, thus preventing run-off on the site from coming into contact with contaminants after site remediation.

Because there are no surface water resources at the site and potentially contaminated storm water would be collected by a wastewater treatment plant permitted to release to surface waters, conditions at the site do not currently impact surface water quality. Because the proposed site remediation will minimize surface water run-off from coming into contact with contaminants, future uses of surface water in the vicinity of the site will not be significantly impacted.

5.2.2 Groundwater

5.2.2.1 Present Uses

In general, groundwater in the Sacramento River Basin is used for municipal, domestic, and industrial purposes (RWQCB, 1991). There are seven off-site water wells present within one mile of the contaminant plumes (see Figure 11). These wells are reportedly used for irrigation only. The nearest drinking water wells in the site area are approximately two miles to the southeast, and belong to the Fruitridge Vista Water Company (Stockton, 1990).

5.2.2.2 Future Uses

The groundwater in the vicinity of the site is not specifically listed as a groundwater resource in the Sacramento River Basin Plan (RWQCB, 1991). According to the Basin Plan, the potential beneficial uses for groundwater in this area include community and military water systems and domestic uses associated with individual water supply systems.

5.2.2.3 Potential Effects

Contamination has been detected in groundwater beneath the site, and presently groundwater contamination extends to the southeast approximately 5,200 feet from its on-site source area. The results of the Health Risk Assessment (Section 4.0) indicate that contaminated groundwater poses a potential health risk if ingested. However, there are no drinking water supply wells or water supply wells of any other type located within the contaminant plumes. Therefore, the groundwater contamination does not impact existing beneficial uses of groundwater.

Groundwater contamination from the site, if not controlled or cleaned up, could potentially impact existing downgradient groundwater users. Groundwater contamination could also prevent future development of the potential beneficial uses listed above. Future industrial or military uses might be an exception because these uses typically have lower water quality standards (that is, can tolerate higher contaminant concentrations).

6.0 FEASIBILITY STUDY SUMMARY

This section summarizes the Feasibility Study and discusses final candidate remedial alternatives. The purpose of a feasibility study is to identify applicable remedial technologies and select recommended remedial alternatives which will provide adequate protection of public health and the environment, comply with applicable laws and regulations, and be cost-effective.

In general, after a remedial investigation is completed, potential remedial technologies are identified and screened for applicability to contaminants and contaminated **media** (such as soil and groundwater) at the site. Applicable technologies are combined as necessary to form alternatives. Each alternative should address all contaminants of concern. The alternatives are then screened on the basis of their ability to reduce contaminant concentrations to acceptable levels, ability to obtain agency approval, and cost-effectiveness. The most promising alternatives survive the screening and are selected as final candidate alternatives. The final candidate alternatives then undergo a detailed analysis where their ability to satisfy the following nine **criteria** are evaluated:

- short-term effectiveness;
- long-term effectiveness;
- implementability;
- compliance with laws and regulations;
- reduction of **toxicity**, mobility, and volume;
- cost;
- overall protection of human health and the environment;
- state acceptance; and
- community acceptance.

The detailed analysis is used to compare the relative advantages and disadvantages of the final candidate alternatives and to select a recommended remedial alternative for each **operable unit**.

As discussed in Section 3.0, several phases of remedial investigation work were conducted at the site to assess the nature and extent of contamination in soil and groundwater. The Feasibility Study for the site was initially conducted after completion of the Phase II Remedial Investigation. The Feasibility Study has been modified as new information about the nature and extent of contamination, contaminant mobility, and state and community acceptance of the selected remedial alternatives became available.

The Feasibility Study is presented in the following documents:

- Remedial Investigation/Feasibility Study Report, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, May 1991.
- Addendum Remedial Investigation/Feasibility Study Report, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, November 1992.
- Feasibility Study Supplement, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, September 1992.
- Revised Soil Volumes and Remedial Alternative Detailed Cost Estimates — Feasibility Study Supplement, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, February 1993.
- Draft Letter Report — Supplemental Remedial Action Cost Estimates, Operable Units S-1, S-2, and S-3, Union Pacific Railroad Yard, Sacramento, California, Dames & Moore, December 1994 (Dames & Moore, 1994d). This report was prepared to address public comments on the Draft RAP of January 1994.

The following sections describe the remedial action objectives, operable units, and final candidate alternatives for contaminated soil and groundwater at the site. Each final candidate alternative is described and discussed in terms of cost-effectiveness, implementation time (the length of time required to put the alternative into effect), effect on future land and groundwater use, the potential environmental impacts that may result from remedial action, and reason for selection or rejection as the recommended remedial alternative. One recommended remedial alternative is selected for each operable unit and its selection is justified. The design and construction activities required for the recommended remedial alternatives, as well as **applicable or relevant and appropriate requirements** with which these alternatives must comply are then discussed for each medium of concern (soil and groundwater).

A feasibility study analysis was not performed for Soil Operable Unit S-5; however, a separate plan for further investigation of groundwater impacts and remedial action to address soil impacts in this operable unit is presented separately in Section 6.4.

6.1 REMEDIAL ACTION OBJECTIVES

Remedial action objectives are goals for protecting human health and the environment from potential risks caused by the presence of chemicals at the site. Remedial action objectives are developed through health risk assessment analyses, consideration of applicable or relevant and appropriate requirements, and consideration of other non-technical factors.

The Remedial Action Objectives developed for the site would limit exposure to soil and groundwater contaminants through removal, destruction, and/or containment of contaminants. If the Remedial Action Objectives are achieved during site clean-up and a new Health Risk Assessment was performed after site clean-up, it would show that estimated human health risks have been reduced to levels acceptable to the DTSC. Based on these objectives, specific cleanup levels have been established for each contaminant of concern in soil and groundwater at the site.

6.1.1 Future Land Use Assumptions

In order to develop clean-up levels which could be applied to specific areas according to planned future land use in those areas, it was necessary to make assumptions about future land use at the site. In the Feasibility Study, the assumptions about general land use types used were based on the recommendations of the DTSC and the Union Pacific Land Use Committee, as discussed in Section 5.1.2.2. Assumed future land use types associated with particular areas of the site are shown on Figure 13 and summarized below:

- Future land use in the northeastern part of the inactive portion of the site is assumed to be unrestricted;
- Future land use in the southern and central parts of the inactive portion of the site is assumed to be restricted to commercial and mixed land uses, as described in Section 5.1.2.2; and
- The active switching yard (the western portion of the site) will be restricted to heavy industrial land uses. UPRR plans to maintain the current switching yard operation indefinitely.

It is expected that the site will be developed for residential mixed use. The City has initiated the rezoning of the site for residential/mixed use. UPRR will prepare a land use plan for the site, which will accommodate the objectives of UPRR, the City, and the community concerns. However, at this time, it is not known where specific land uses will occur. The Union Pacific Land Use Committee Report, adopted by the City Council on April 14, 1992, strongly recommended the development of housing and mixed use/housing on the site. The cleanup levels proposed in the RAP provide for unrestricted land use on approximately one-third of the site, with the remainder of the site providing for a restricted land use that will allow mixed use. The final land use plan may require additional portions of the site to be remediated to unrestricted use levels beyond the area indicated in the RAP. Soil remediation to accomplish the objectives proposed in the RAP will proceed at this time. The Department, UPRR, and the City have agreed that it is not cost-effective to remediate the entire site at this time to the unrestricted land use level that would allow single-family residential land use.

After finalization of a land use plan by the City and prior to development construction, UPRR will perform, at its cost, a second phase of remediation in a manner consistent with the RAP (see Table 8) to allow the specific land uses defined and scheduled in the land use plan. The Department will maintain enforceable oversight for the site until remedial actions are completed which allow for implementation of the City-approved land use plan.

6.1.2 Soil Clean-Up Levels

The remedial action objectives for soil contaminants at the site are expressed in terms of clean-up levels for soil. The clean-up levels are target chemical concentrations which may be left in place on-site without treatment to reduce toxicity, mobility, or volume. Soils containing concentrations of contaminants higher than the clean-up levels (based on statistical analysis of test results) must be either removed from the site or treated. The clean-up levels for soil contaminants at the site are summarized in Table 8 and discussed below.

In order to select soil clean-up levels that are protective of human health, future land use (and therefore, future exposure scenarios) must be known. The future land use assumptions described in the previous section were used to develop risk-based clean-up levels for arsenic and lead at the site. Separate clean-up levels were selected for the two land use types: unrestricted land use levels and restricted land use levels. In areas where future land use will be restricted, the clean-up levels for arsenic and lead are higher (i.e., require less remedial action) than in areas where future land use will be unrestricted. Concentrations of arsenic and lead in the active yard were generally below the allowable exposure concentrations calculated for heavy industrial land use, so arsenic and lead clean-up levels were not selected for the active yard (Dames & Moore, 1992b).

Arsenic in slag has recently been demonstrated in an animal bioavailability study to have no bioavailability. Once the DTSC has concurred with the findings of the study, the cleanup levels for arsenic and lead may be increased or withdrawn. If a cleanup level is intended to be changed, a public notice will be issued and a public meeting will be held to present the study results and answer questions or discuss concerns regarding the proposed cleanup level changes.

Separate health-risk-based clean-up levels were also developed for carcinogenic and non-carcinogenic polycyclic aromatic hydrocarbons. The clean-up levels for polycyclic aromatic hydrocarbons in soil are conservative enough to allow unrestricted future land use, and will be applied to all areas of the inactive portion of the site regardless of planned future land use.

TABLE 8
REMEDIAL ACTION CLEAN-UP LEVELS
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Constituent	Remedial Action Objective		Basis for Selection
	Restricted Future Land Use ¹	Unrestricted Future Land Use ²	
SOIL CONTAMINANTS (mg/Kg unless otherwise noted)			
Arsenic	55	8	DTSC/HR
Lead	950	220	HR/DTSC
Petroleum Hydrocarbons			
Diesel		1,000	LUFT
Gasoline (Former Oil House Area)		100	LUFT
Gasoline (Other Areas)		1,000	LUFT
Benzene		0.3	LUFT
Toluene		0.3	LUFT
Ethylbenzene		1.0	LUFT
Xylenes		1.0	LUFT
Chlorinated Volatile Organic Compounds		0.5 ³	Leachability
Polycyclic Aromatic Hydrocarbons			
Carcinogenic (sum of)		0.042	HR
Non-carcinogenic (sum of)		100	HR
Polychlorinated Biphenyls (PCBs)		0.1	U.S. EPA ⁴
Asbestos		1% by weight	ARAR (TTLC)
GROUNDWATER CONTAMINANTS (µg/L)			
Arsenic		50	ARAR (MCL)
Chromium		50	ARAR (MCL)
Lead		15	ARAR (MCL)
Nickel		100	ARAR (MCL)
Chlorinated Volatile Organic Compounds			
Carbon tetrachloride		0.5	ARAR (MCL)
1,1-Dichloroethane		5	ARAR (MCL)
1,1-Dichloroethene		6	ARAR (MCL)
1,2-Dichloroethane		0.5	ARAR (MCL)
1,1,1-Trichloroethane		200	ARAR (MCL)
1,1,2-Trichloroethane		32	ARAR (MCL)
Tetrachloroethylene		5	ARAR (MCL)
Trichloroethylene		5	ARAR (MCL)
Vinyl Chloride		0.5	ARAR (MCL)
Aromatic Compounds			
Benzene		1	ARAR (MCL)
Toluene		1,000	ARAR (MCL)
Ethylbenzene		680	ARAR (MCL)
Xylenes		1,750	ARAR (MCL)
Petroleum Hydrocarbons			
Diesel		100	ARAR (SNARL)

NOTES:

- mg/kg Milligrams of chemical per kilogram of soil - parts per million
- µg/L Micrograms of chemical per liter of groundwater - parts per billion
- ¹ Restricted Future Land Use applies to Soil Operable Units S-1 and S-2
- ² Unrestricted Future Land Use applies to Soil Operable Unit S-3
- ³ Measured in soil gas as µg/L.
- ⁴ Recommended Soil Action Levels (U.S. EPA, 1990)

KEY TO BASIS FOR CLEAN-UP LEVELS:

- HR Health-risk-based
- ARAR Based on applicable or relevant and appropriate requirements
- DTSC Selected at the direction of the DTSC based on DTSC's risk assessment
- MCL Primary Maximum Contaminant Level (Cal-EPA or U.S. EPA, whichever is lower)
- LUFT Leaking Underground Fuel Tank Assessment
- SNARL Suggested No-Adverse-Response Level

The cleanup level for diesel was selected at the direction of the DTSC. Cleanup levels for gasoline, benzene, toluene, ethylbenzene, and xylenes were developed using the State Water Resources Control Board's Leaking Underground Fuel Tank Field Manual (SWRCB, 1989), as directed by the DTSC. Cleanup levels for petroleum hydrocarbons using the manual are intended to be protective of groundwater quality.

Cleanup levels for polychlorinated biphenyls were selected from risk-based concentrations developed by the United States Environmental Protection Agency (US EPA, 1990), and the asbestos cleanup level is based on applicable or relevant and appropriate regulatory requirements.

Additional soil vapor investigation was performed in the deeper portions of the Central Fill and former Oil House areas in June 1994, site-specific soil vapor concentrations and soil physical parameters were used to model transport of volatile organic compounds to groundwater. Information supplied by the model was then used to calculate cleanup levels which are protective of groundwater quality.

No toxic or carcinogenic chemicals were detected in Operable Unit S-5 at levels that would pose a health risk. Furthermore, no complete direct exposure pathways exist because impacted soils are not exposed at the ground surface. However, at the direction of the DTSC, the cleanup level for diesel in soil will be the same as in other operable units (1,000 mg/Kg).

6.1.3 Groundwater Clean-Up Levels

Clean-up levels for contaminants of concern found in groundwater on- and off-site were selected to coincide with Maximum Contaminant Levels (MCLs). MCLs are regulatory requirements established by either the California Environmental Protection Agency (Cal-EPA) or the U.S. EPA. Primary MCLs are protective of human health. For a chemical whose human health risks are unknown or insignificant, a secondary MCL based on taste and odor criteria is the applicable requirement. Groundwater clean-up levels for the site are all based on primary MCLs (except petroleum hydrocarbons as diesel), and are summarized in Table 8. The clean-up level for diesel in groundwater of 100 $\mu\text{g/L}$ (see Table 8) is based on a U.S. EPA Suggested No-Adverse-Response Level (SNARL).

6.2 DEFINITION OF OPERABLE UNITS

This section describes contamination at the site in terms of operable units which were defined in the feasibility study. An operable unit is any contaminated area or medium (such as soil or groundwater) which requires special remediation techniques. A separate operable unit may also be defined in order to provide an opportunity for simpler or more cost-effective remedial action. The feasibility study established five operable units for soil and two operable units for groundwater. The locations of these

operable units are shown on Figures 8 and 14. The following sections describe each operable unit in terms of:

- defining characteristics
- contaminants present
- applicable clean-up levels
- area and volume of material contaminated above the clean-up levels.

6.2.1 Soil Operable Units

The site has been divided into five separate soil operable units (S-1 through S-5). The geographic boundaries of the soil operable units are shown on Figure 14, and the volume of soil contaminated above clean-up levels is summarized for each soil operable unit in Table 9. Volume estimates of arsenic- and lead-impacted soil were revised following slag removal activities in late 1993 (Dames & Moore, 1994d).

6.2.1.1 Soil Operable Unit S-1

Operable Unit S-1 covers a 36-acre area in the southern part of the inactive portion of the site. As described in Section 5.1.2.2, future land use in soil Operable Unit S-1 is assumed to be restricted. The contaminants of concern for this operable unit are arsenic, lead, petroleum hydrocarbons (as diesel and gasoline), polycyclic aromatic hydrocarbons, and asbestos. They are locally present in soils above the restricted future land use clean-up levels, and extend to depths of five to ten feet below ground surface. Figures 5, 7, and 12 show areas totalling approximately 6.7 acres within operable unit S-1 where soil contaminant concentrations exceed the clean-up levels. The total volume of soil in Operable Unit S-1 which exceeds the restricted future land use clean-up levels is estimated to be 15,000 cubic yards.

6.2.1.2 Soil Operable Unit S-2

Soil Operable Unit S-2 covers approximately 7 acres in the central inactive portion of the site (see Figure 14). The contaminants of concern for this operable unit are arsenic, lead, petroleum hydrocarbons (as diesel and gasoline), polycyclic aromatic hydrocarbons and chlorinated volatile organic compounds. This operable unit includes the former Central Fill Area where miscellaneous debris and drums were found during Remedial Investigation activities. Future land use in this operable unit is assumed to be restricted as described in Section 5.1.2.2; therefore, the restricted future land use clean-up levels apply. Operable Unit S-2 contains approximately 19,500 cubic yards of soil with contaminant concentrations greater than the restricted future land use clean-up levels. Soil contaminated above the clean-up levels is distributed over an area totalling approximately 2.7 acres, and extends to a maximum depth of approximately 15 feet below ground surface. These contaminated areas are shown on Figures 5 and 7.

TABLE 9
SOIL OPERABLE UNIT VOLUMES
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Depth Interval (feet bgs)	0-0.5	>0.5-1.5	>1.5-5	>5-10	>10-15	Total
Soil Operable Unit S-1						
Volume Above RAOs (cubic yards)						
Unrestricted: As \geq 8 mg/kg and/or Pb \geq 220 mg/kg		20,600	4,400	500		25,500
Restricted: As \geq 55 mg/kg and/or Pb \geq 950 mg/kg				—		8,500
		9,000	500			9,500
Asbestos > 1%		1,500	—	—	—	1,500
TPH - Diesel and/or Gasoline **		1,500	2,000	500	—	4,000
S-1 Subtotal (Unrestricted Future Land Use)						31,000
S-1 Subtotal (Restricted Future Land Use)						15,000
Soil Operable Unit S-2						
Volume Above RAOs (cubic yards)						
Unrestricted: As \geq 8 mg/kg and/or Pb \geq 220 mg/kg		6,600	4,300	1,400		12,300
Restricted: As \geq 55 mg/kg and/or Pb \geq 950 mg/kg				—		
		3,500				3,500
TPH - Diesel and/or Gasoline **		500	8,000	6,500	1,000	16,000
S-2 Subtotal (Unrestricted Future Land Use)						28,300
S-2 Subtotal (Restricted Future Land Use)						19,500
Soil Operable Unit S-3						
Volume Above RAOs (cubic yards)						
Unrestricted: As \geq 8 mg/kg and/or Pb \geq 220 mg/kg	4,000	500	13,500	1,000	—	19,000
TPH - Diesel only **		< 500	< 500	—	—	500
S-3 Subtotal						19,500
Depth Interval (feet bgs)		0-4	>4-9	>9-15	>15-20	Total
Soil Operable Unit S-5						
Volume Above RAOs (cubic yards)						
TPH - Diesel Only ***	0	0	20	640	840	1,500
S-5 Subtotal						1,500
TOTAL ALL SOIL OPERABLE UNITS (S-1 and S-2 UNRESTRICTED FUTURE LAND USE):						80,300
TOTAL ALL SOIL OPERABLE UNITS (S-1 and S-2 RESTRICTED FUTURE LAND USE):						55,500

KEY
 bgs — below ground surface
 As — Arsenic
 Pb — Lead
 TPH — Total Petroleum Hydrocarbons (as diesel and/or gasoline)
 PAH — Polycyclic Aromatic Hydrocarbons
 ND — None detected.

** PAH contamination is associated with areas where TPH Diesel contamination is also present. Separate volumes for PAHs above the RAOs were therefore not estimated.
 *** No PAH contamination is associated with TPH in this operable unit.

S-4 Cleanup provisions as part of ERM - no further action proposed

6.2.1.3 Soil Operable Unit S-3

Soil Operable Unit S-3 is a 17-acre area in the northern part of the inactive portion of the site. Arsenic, lead, petroleum hydrocarbons (as diesel), and polycyclic aromatic hydrocarbons are present in soil at concentrations lower than the other soil operable units. The clean-up levels for this operable unit were developed to allow for unrestricted future land uses. This operable unit contains approximately 19,500 cubic yards of soil contaminated above the unrestricted future land use clean-up levels. Soil contamination above the clean-up levels is distributed over areas totalling approximately 5.5 acres, and is found primarily in the upper five feet of soil. Figures 5 and 7 depict areas within S-3 where soil contamination levels exceed the unrestricted future land use clean-up levels.

6.2.1.4 Soil Operable Unit S-4

Two off-site lots adjacent to the west side of the active yard were defined as Operable Unit S-4 (see Figure 14). Soils in S-4 contained levels of arsenic and lead that exceed local background levels. These off-site areas were remediated in 1991 under an Interim Remedial Measure which was approved by the DTSC. The affected soils were excavated and disposed of off-site. Based on testing completed after the remedial activities, residual concentrations of arsenic and lead are now at or below local background levels. A fence was constructed to separate the active yard from adjacent residential lots, and gravel was placed to reduce the potential for wind-blown dust. No additional remedial action is proposed for Operable Unit S-4, and it is therefore not discussed further in this Draft Remedial Action Plan.

6.2.1.5 Soil Operable Unit S-5

Soil Operable Unit S-5 is defined as contaminated soil in the active switching yard (see Figure 14). This operable unit contains arsenic and lead associated with slag track ballast and diesel and oil in the northeastern portion of the railyard. The results of the contaminant exposure calculations performed during development of clean-up levels indicate that remedial action to remove or treat arsenic and lead in this area is not needed to protect human health, given current land use conditions. Also, the dissolution kinetics study (Walsh & Associates, 1992) described in Section 3.1.4.2 suggests that these metals do not pose a threat to groundwater.

Operable Unit S-5 also contains diesel impacts in soil and shallow groundwater. Soil hydrocarbon impacts comprise an area of approximately 10,000 square feet, and the total impacted volume is approximately 1,500 cubic yards. The associated shallow groundwater impacts currently appear to cover less than 7,000 square feet (Plume C on Figure 8). No polycyclic aromatic hydrocarbons were found in soil or groundwater.

6.2.2 Groundwater Operable Units

Two groundwater operable units were defined for the feasibility study. The locations of these operable units are shown on Figure 8 and each is discussed separately below. Groundwater operable unit areas and volumes of contaminated groundwater are summarized in Table 10.

6.2.2.1 Groundwater Operable Unit GW-1

The Operable Unit GW-1 plume (Plume A on Figure 8) extends from the first water-bearing zone into the second water-bearing zone under the southeastern part of the site. The plume extends from the Central Fill Area of the site southeast approximately 5,200 feet to 19th Avenue. Groundwater in Operable Unit GW-1 contains nickel, chlorinated volatile organic compounds and volatile aromatic compounds. The aromatic compounds are restricted to the on-site portion of the plume under the Former Oil House area. The plume has a surface area of approximately 35 acres and contains approximately 150 million gallons of contaminated groundwater.

6.2.2.2 Groundwater Operable Unit GW-2

Groundwater Operable Unit GW-2 is defined as a smaller plume (Plume B on Figure 8) limited to the first water-bearing zone beneath the southern inactive portion of the site. Operable Unit GW-2 groundwater contains chlorinated volatile organic compounds and nickel. The plume has a surface area of approximately 5 acres and contains approximately 7 million gallons of contaminated groundwater.

TABLE 10
GROUNDWATER OPERABLE UNIT AREAS AND VOLUMES
UNION PACIFIC RAILROAD YARD
SACRAMENTO, CALIFORNIA

Groundwater Operable Unit	Plume Area Above Remedial Action Objectives (acres)	Plume Thickness (feet)	Plume Aquifer Porosity (%)	Volume Above Remedial Action Objectives (gallons)
GW-1	35	20-35	25-30	150 million
GW-2	5	15	30	7 million

6.3 FINAL CANDIDATE REMEDIAL ALTERNATIVES

The Addendum Remedial Investigation/Feasibility Study report (Dames & Moore, 1991d) presented a total of ten remedial alternatives for soil and six for groundwater. Following the preliminary screening, there remained five final candidate alternatives to address soil contamination and three final candidate alternatives for groundwater. Those final candidate alternatives were discussed in the Draft Remedial Action Plan.

Based on the analyses conducted for the Feasibility Study Supplement in 1992, this section of the Final Remedial Action Plan reflects new information about the effectiveness of two soil remedial alternatives. It also reflects new recommended remedial alternatives for three soil operable units and one of the groundwater operable units. Specific revisions are discussed below.

Two final candidate remedial alternatives developed to address soil contamination at the site were eliminated from consideration in the Feasibility Study Supplement. Soil Alternative 5 included excavation and on-site treatment using soil washing to remove metals. This alternative was eliminated because the results of the recently completed dissolution kinetics study (Walsh & Associates, 1992) suggests that soil washing technology would not be effective in achieving the remedial action objectives for the chemical forms of arsenic and lead which are found at the site.

Soil Alternative 6 included excavation and off-site disposal of soils with contaminant concentrations exceeding the hot spot concentrations. The hot spot concentrations were defined in the Addendum Remedial Investigation/Feasibility Study Report (Dames & Moore, 1991d) to provide an intermediate clean-up level between "No Action" and full remediation. The hot spot clean-up levels for arsenic and lead were higher (less strict) than the new unrestricted future land use clean-up levels recommended by the DTSC, meaning less contaminated soil would be addressed during site remediation. Under Alternative 6, following disposal of the hot spot soils, other areas where residual contaminants might pose a threat to human health or the environment would be covered with an engineered asphalt cap. Alternative 6 also included deed restrictions which would have strictly limited future land uses. Alternative 6 was eliminated from consideration in the Feasibility Study Supplement because the new clean-up levels were developed so that clean-up levels are tied to specific land use types. The new clean-up levels include provisions for restrictions on future land use in areas where residual metals are left in place. With the new land use specific remedial action objectives, the concept of Alternative 6 is contained within another of the final candidate alternatives. Alternative 6 was therefore redundant and was eliminated.

The Feasibility Study Supplement presented a re-evaluation of the remaining final candidate remedial alternatives for soils and groundwater. The re-evaluation focused on the state and community

acceptance criteria and whether the alternatives were compatible with desired future land uses identified by the Union Pacific Land Use Committee and the DTSC. The re-evaluation resulted in the selection of new remedial alternatives for soil Operable Units S-1, S-2 and S-3, and groundwater Operable Unit GW-2. The following sections discuss the final candidate alternatives for each operable unit, and the reasons for selection (or rejection) as the recommended remedial alternative.

6.3.1 Soil Operable Unit S-1

Soil Operable Unit S-1 is in the southern part of the inactive portion of the site (see Figure 14). This operable unit contains arsenic, lead, petroleum hydrocarbons, polycyclic aromatic hydrocarbons, and asbestos at concentrations above the clean-up levels. Future land use in operable unit S-1 is assumed to be restricted as described in Section 6.1.1; therefore, the restricted future land use clean-up levels are applicable for this area (see Table 8).

There are three final candidate alternatives for Operable Unit S-1:

- Alternative 1 - No Action
- Alternative 4 - Containment with Institutional Controls
- Alternative 10 - Excavation and Off-site Disposal of Soils Above Clean-Up Levels.

A summary of the analysis of these alternatives from the Feasibility Study Supplement is presented in the following sections. Table 11 contains a summary comparison of the final candidate alternatives for Soil Operable Unit S-1, and Table 12 summarizes the costs.

6.3.1.1 Alternative 1: No Action

Objectives and Scope

The National Oil and Hazardous Substances Pollution Contingency Plan requires that the No Action Alternative be considered. The amount of risk reduction provided by each of the other final candidate alternatives is compared to the No Action Alternative to assess how effective they are. This alternative involves no remediation (clean-up) of contaminated soil; it consists primarily of constructing and maintaining a fence around the entire site to prevent unauthorized access. A **land use covenant** would be entered into by UPRR and DTSC. The land use covenant would be recorded on the deed to provide notice of prohibited land uses and activities on the property which might disturb soil contaminants and cause human health risks and/or adverse environmental impacts. In addition, groundwater beneath the site would be monitored for a period of thirty years to check for changes in groundwater quality

which might be caused by the migration of contaminants in soil. A report which discusses groundwater monitoring results would be submitted to the DTSC on a yearly basis.

Cost Effectiveness

This alternative has the lowest **total present worth cost** of all the alternatives being considered for Operable Unit S-1, but it provides the least protection of human health and the environment. The total present worth cost of this alternative is about \$800,000. This total includes both **capital costs** and **Operation and Maintenance (O&M) costs**. Capital costs (for equipment, labor, and materials) are approximately \$100,000. This includes the cost of repairing and/or replacing the existing fence which surrounds the site, if necessary. Operation and maintenance costs would total about \$1.2 million over thirty years. This includes the costs for groundwater monitoring and preparation of an annual monitoring and maintenance report.

Implementation Time

Since this alternative does not include any remediation of contaminated soil, the time needed to put this alternative into effect (implementation time) is expected to be approximately four months. This includes time needed to prepare (and obtain DTSC approval for) a groundwater monitoring work plan, repair the existing fence as needed, develop the land use covenant, and record the requirements on the property deed.

Groundwater Use

Of all the final candidate alternatives which were considered, this alternative presents the greatest risk to present and future groundwater use because none of the contaminated soil in S-1 would be removed or treated to reduce the level of contamination in this area. As a result, some contaminants (primarily petroleum hydrocarbons) could migrate to groundwater and adversely impact future beneficial uses of this resource. If uncontrolled over a long period, groundwater contamination could migrate to an area where groundwater is used as a public water supply and thus pose a threat to human health and the environment. The thirty-year groundwater monitoring program included in Alternative 1 would be designed to provide an early warning of any additional groundwater contamination which might occur.

TABLE 11
COMPARISON OF SOIL FINAL CANDIDATE ALTERNATIVES
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Operable Unit	Alternative	Short-term Effectiveness	Long-term Effectiveness	Reduction of Toxicity, Mobility, and Volume	Implementability	Cost*	Compliance with ARARs	Overall Protection of Public Health and Environment	State Acceptance	Community Acceptance
S-1	1	Fair	Poor	Poor	Fair	\$800,000	Poor	Poor	Poor	Poor
	4	Fair	Good	Fair	Fair	\$4.5 million	Good	Good	Poor	Poor
	10 (Unrestricted Future Land Use)	Poor	Good	Good	Fair	\$5.6 million	Good	Good	Good	Excellent
	10 (Restricted Future Land Use)	Poor	Good	Fair	Fair	\$2.9 million	Good	Good	Good	Good
S-2	1	Fair	Poor	Poor	Fair	\$730,000	Poor	Poor	Poor	Poor
	10 (Unrestricted Future Land Use)	Poor	Good	Good	Fair	\$4.6 million	Good	Good	Good	Excellent
	10 (Restricted Future Land Use)	Poor	Good	Fair	Good	\$3.1 million	Good	Good	Good	Good
S-3	1	Fair	Poor	Poor	Fair	\$750,000	Poor	Poor	Poor	Poor
	4	Fair	Good	Fair	Fair	\$1.5 million	Good	Good	Poor	Poor
	10 (Unrestricted Future Land Use)	Fair	Good	Fair	Good	\$3.0 million	Good	Good	Good	Good

* Net present worth cost of the alternative as calculated over a 30-year span using a 5% interest rate.

Alternative 1
 Alternative 4
 Alternative 10

No Action
 Containment with Institutional Controls
 Excavation/Off-Site Disposal of Soil Above Clean-up Levels

TABLE 12
SUMMARY OF ESTIMATED COSTS
SOIL ALTERNATIVES
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Operable Unit	Alternative	Capital Costs*	Operation and Maintenance Costs**	Total Costs	Total Present Worth Cost ***
S-1	1	\$105,000	\$1,170,000	\$1,275,000	\$803,000
	4	\$3,317,000	\$2,483,000	\$5,800,000	\$4,514,000
	10 (Unrestricted Future Land Use)	\$5,909,000	\$0	\$5,909,000	\$5,628,000
	10 (Restricted Future Land Use)	\$3,011,000	\$0	\$3,011,000	\$2,868,000
S-2	1	\$30,000	\$1,170,000	\$1,200,000	\$731,000
	10 (Unrestricted Future Land Use)	\$4,804,000	\$0	\$4,804,000	\$4,575,000
	10 (Restricted Future Land Use)	\$3,206,000	\$0	\$3,206,000	\$3,053,000
S-3	1	\$53,000	\$1,170,000	\$1,223,000	\$753,000
	4	\$659,000	\$1,469,000	\$2,128,000	\$1,480,000
	10 (Unrestricted Future Land Use)	\$3,180,000	\$0	\$3,180,000	\$3,029,000

* All capital costs are expended in the first year of the project life.

** O&M costs are not constant over the project life.

*** Net present worth cost at 5% annual interest rate.

Environmental Impact

Because this alternative does not include any remediation of contaminated soil, implementation would not cause significant environmental impact. However, environmental impacts which have already occurred or might occur as the result of contaminant migration either to groundwater or off-site in the form of airborne dust would not be addressed. Of all the final candidate alternatives, this alternative provides the least long-term protection of the environment.

Justification for Rejection or Selection

This alternative was rejected from consideration as the recommended remedial alternative because it would not meet remedial action objectives and would not provide adequate protection of human health and the environment. It would not reduce the toxicity, mobility, or volume of the contaminants at the site, nor would it eliminate the need for long-term access restrictions, strict land use restrictions, or long-term operation and maintenance.

6.3.1.2 Alternative 4: Containment with Institutional Controls

Objectives and Scope

This alternative would include leaving waste and contaminated soil in place, clearing away remaining debris, grading surface soil, and constructing an asphalt cap over soil contaminated above the clean-up levels. In order to protect human health, the cap would be designed to cover all soils contaminated at levels exceeding the unrestricted land use clean-up levels. The purpose of the cap would be to reduce movement of rainwater downward through the contaminated soil and prevent contaminated soil from being blown off-site by wind. The cap would be sloped to direct water away from the capped areas into a collection system. A conceptual plan for Alternative 4 is shown on Figure 15.

During construction (especially at those times when contaminated soil is being moved or otherwise disturbed), soil would be wetted to minimize the amount of dust raised by these activities. Air monitoring would be conducted during construction activities to assess the effectiveness of dust minimization measures. If results of air monitoring indicate dust emissions are unacceptable, corrective action would be taken to reduce dust emissions. An air monitoring report would be prepared at the conclusion of the remedial action activities.

The completed asphalt cap would be inspected yearly to identify any necessary repairs. Regular maintenance of the asphalt surface would include re-sealing one-fourth of the cap every year in rotation

so that the entire cap is resealed every four years. Additionally, the cap surface would be replaced with fresh asphalt every ten years. This maintenance program is designed to keep the cap in good condition.

In addition to construction of the cap over areas where soil is contaminated above clean-up levels, a land use covenant would be entered into by DTSC and UPRR. The land use covenant would be recorded on the deed to prohibit land uses and activities on the property which might disturb soil contaminants and cause human health risks or adverse environmental impacts. The site would be fenced to restrict unauthorized access. Groundwater quality would be monitored for a period of thirty years after the cap is finished. A report which discusses the results of groundwater monitoring would be submitted to DTSC on a yearly basis.

Cost Effectiveness

This alternative has the highest total present worth cost of all the alternatives being considered for Operable Unit S-1. The total present worth cost of this alternative is approximately \$4.5 million. This total includes both capital costs and Operation and Maintenance costs. Capital costs (for equipment, labor, and materials) are approximately \$3.3 million and include the cost of all construction activities and repairing and/or replacing the existing fence which surrounds the site. Operation and maintenance costs would be approximately \$2.5 million over a thirty-year period. This includes the cost for cap maintenance and replacement, the groundwater monitoring program and yearly monitoring reports.

Implementation Time

The time needed to implement this alternative is expected to be ten months, provided no difficulties are encountered. This includes three months for engineering design of the cap, three months to obtain the necessary permits, and seven months to clear and grade the site and construct the asphalt cap and fence. It is expected that design of the cap would be performed during the permitting period.

Groundwater Use

Future groundwater use will not be significantly affected by this alternative. One purpose of the cap is to reduce the amount of water moving downward through contaminated soil and into groundwater. This alternative is therefore more likely to protect groundwater than Alternative 1, but less likely to do so than Alternative 10. The thirty-year groundwater monitoring program would be designed to provide an early warning of any additional groundwater contamination which might occur because of the downward movement of soil contaminants.

Environmental Impact

Dust control measures would be used during site clearing, grading, and construction activities to minimize problems caused by contaminated airborne dust. Due to the nature of asphaltic material, there would likely be some air emissions and associated odor during paving of the asphalt cap. The expected levels of emission would not exceed normal urban activity or result in significant environmental impacts. There would also be increases in noise and vehicular traffic at and near the site during the hours when site work is underway. However, the noise and traffic impacts will be temporary and will be limited to daylight hours during the week. Following remediation, contaminants available to environmental receptors would be limited. This is a result of reduced potential contaminant migration, as well as isolation of the contaminated material from sensitive environmental receptors.

Justification for Rejection or Selection

This alternative would reduce the mobility of the soil contaminants. Although it would not reduce the toxicity of the contaminants or the volume of contaminated soil through treatment, it would effectively eliminate the most significant means of human exposure to the soil contaminants. Thus, it would provide adequate protection of human health and the environment. However, Alternative 4 would require strict limitations on future land use in Operable Unit S-1 and would require long-term maintenance and monitoring. The short-term environmental impacts associated with this alternative are expected to be about the same as the short-term impacts caused by Alternative 10. This alternative is more expensive than Alternative 10, and would not allow for most of the beneficial future land uses identified by the Union Pacific Land Use Committee and the DTSC. Therefore, this alternative was rejected as the recommended remedial alternative for Operable Unit S-1.

6.3.1.3 Alternative 10: Excavation/Off-Site Disposal of Soil Above Clean-Up Levels

Objectives and Scope

This alternative consists of excavation and off-site disposal of soil contaminated with arsenic, lead, petroleum hydrocarbons, polycyclic aromatic hydrocarbons, and asbestos at or above clean-up levels established for restricted future land use. After the site is cleared and construction debris is disposed off-site, excavated soil would be loaded onto rail cars and/or trucks and taken off-site and disposed of in an appropriately licensed and permitted landfill. Clean soil brought from off-site would be placed as fill to restore grade in excavated areas, if needed. Figure 16 is a conceptual plan for Alternative 10.

Significant concentrations of volatile organic compounds exist in the deeper portion of the Oil House Area. It may be more health-protective and cost-effective to combine in-situ treatment (such as

vapor extraction) with excavation and off-site disposal. A soil vapor extraction interim remedial measure is planned for Oil House Area to reduce the concentrations of volatile organic compounds prior to excavation and off-site disposal.

Air monitoring would be conducted during all construction activities to assess the effectiveness of dust minimization measures. If results of air monitoring indicate that dust emissions are unacceptable, corrective action would be taken to reduce dust emissions. An air monitoring report would be prepared at the conclusion of the remedial action activities.

To verify that the remedial action objectives have been achieved, confirmatory soil samples would be taken from the bottom and sides of excavated areas. The remedial action objectives are applicable to the entire soil column accessible for excavation above the water table. The samples would be sent to a laboratory and tested for the appropriate contaminants. If statistical analysis of the test results shows that the remedial action objectives have not been achieved, excavation would continue until test results indicate that affected soils have been cleaned up to the appropriate levels.

Because this alternative provides for the removal of soil contaminated above clean-up levels, a fence and groundwater monitoring are not included as part of this alternative. After completion of final remedial action, future land use in the area of Operable Unit S-1 would be restricted to commercial and/or mixed use development as described in Section 6.1.1. A land use covenant would be entered into by the DTSC and UPRR. The land-use covenant would be recorded on the deed to the property. Following remedial action, the existing fence will be maintained until site redevelopment is complete.

Cost Effectiveness

This is the second most expensive alternative being considered for Operable Unit S-1. The total present worth cost of this alternative is approximately \$2.9 million. This includes capital costs for equipment, materials, labor, and related construction activities to excavate and dispose of soil contaminated above clean-up levels. There would be no operation and maintenance costs associated with this alternative.

Implementation Time

The time needed to implement this alternative is expected to be 7 months, provided no unplanned delays occur and no difficulties are encountered. This includes two months for engineering design, three months to obtain the necessary permits, and four months to clear and grade the site, excavate and dispose of the soil, and backfill the pits. It is expected that design and permitting activities would begin at the same time.

Groundwater Use

Groundwater use would not be affected by this alternative. Disposing of the soil contaminated above the restricted future land use remedial action objectives would effectively reduce contaminants that could move downward into groundwater. Furthermore, based on a laboratory study completed in 1992, the forms of arsenic and lead present in soils at the site are not leachable under natural conditions and therefore are not considered to be a potential threat to groundwater quality (Walsh & Associates, 1992). This alternative is therefore likely to protect the groundwater more than the other final candidate alternatives.

Environmental Impact

Dust generation is expected to be higher for this alternative than for the other alternatives because of the large volume of soil that would need to be excavated and disposed of. Dust control measures would be used during site clearing, grading, excavation, and construction activities to reduce the generation of airborne dust. There would also be some increased noise and traffic at and near the site during the hours when site work is underway. However, the impact of noise and traffic is expected to be low because site work is planned for daylight hours during the week when most people are away from their homes. Following remediation, soil contaminants available to environmental receptors at and near the site would be limited. Soil contaminated above the restricted future land-use clean-up levels and waste would be disposed in a facility specifically designed for the long-term management of such wastes. Exposure to remaining soil contaminants (above unrestricted future land-use clean-up levels) would be limited by covering those areas with paving and buildings.

Justification for Rejection or Selection

This alternative would reduce both the volume and mobility of soil contaminants present at the site. This alternative would effectively eliminate the most significant pathway for human exposure to soil contaminants and environmental exposure, and would thus provide adequate protection of human health and the environment.

The implementation time for this alternative is longer than Alternative 1, but less than Alternative 4 for this operable unit. This is the second most expensive of the alternatives for this operable unit. The potential benefits of removing the soil contaminated above clean-up levels include many beneficial future land uses, as well as protection of human health and the environment. The greater short-term environmental impacts and implementation time are justified. This alternative was therefore selected as the recommended remedial alternative for Operable Unit S-1.

6.3.1.4 Recommended Remedial Alternative

The recommended remedial alternative for Operable Unit S-1 is Alternative 10, excavation and off-site disposal of soils contaminated above the restricted future land use clean-up levels.

Justification for Selection

Alternative 10 was selected as the recommended remedial alternative for Operable Unit S-1 for the following reasons:

- It would effectively eliminate the primary exposure pathways (inhalation of contaminated dust and ingestion of contaminated soil).
- It provides adequate overall long-term protection of human health and the environment by reducing the volume and mobility of contaminants at the site.
- It is reasonably cost-effective.
- It provides for many beneficial future land uses.

Following approval of this Final Remedial Action Plan, a **Remedial Action Design Work Plan** will be prepared. It will provide detailed design specifications for the recommended remedial alternative for this Operable Unit. After the Remedial Action Design Work Plan is prepared, it will be submitted to the DTSC for review and approval. Design and construction activities associated with the recommended remedial alternative are discussed in Section 6.5.1.

6.3.2 Soil Operable Unit S-2

Soil Operable Unit S-2 includes approximately seven acres in the central part of the inactive portion of the site (see Figure 14). Soils in this operable unit contain arsenic, lead, petroleum hydrocarbons, chlorinated volatile organic compounds (in soil gas), and polycyclic aromatic hydrocarbons at concentrations above clean-up levels. Operable Unit S-2 also includes the former Central Fill Area, the geographic source of the groundwater contamination in groundwater Operable Unit GW-1. Miscellaneous debris and buried drums were found in the Central Fill Area during the remedial investigation. Future land use in Operable Unit S-2 is assumed to be restricted to commercial or mixed use development as described in Section 6.1.1; therefore, the restricted future land use remedial action objectives are applicable for this area.

There are two final candidate remedial alternatives for Operable Unit S-2:

- Alternative 1 - No Action; and
- Alternative 10 - Excavation and Off-site Disposal of Soils Above the Remedial Action Objectives.

This section is a summary of the feasibility study detailed analysis performed for these alternatives during preparation of the Feasibility Study Supplement. The final candidate alternatives for Soil Operable Unit S-2 are also compared in Tables 11 and 12.

6.3.2.1 Alternative 1: No Action

Objectives and Scope

The National Oil and Hazardous Substances Pollution Contingency Plan requires that the No Action Alternative be considered. The amount of risk reduction provided by each of the other final candidate alternatives is compared to the No Action Alternative to assess how effective they are. This alternative involves no clean-up of contaminated soil; it consists primarily of maintaining the existing fence around the entire site to prevent unauthorized access. A land use covenant would be entered into by DTSC and UPRR. The land use covenant would be recorded on the deed to the property to prohibit future land uses and activities which might disturb soil contaminants and potentially cause human health risks and/or adverse environmental impacts. In addition, groundwater beneath the site would be monitored for a period of thirty years to check for changes in groundwater quality caused by potential migration of contaminants from soil. Groundwater monitoring for this soil operable unit would be integrated with other soil and groundwater operable unit groundwater monitoring programs. A report which discusses groundwater monitoring results would be submitted to the DTSC on a yearly basis.

Cost Effectiveness

This alternative has the lowest total present worth cost of the alternatives being considered for Operable Unit S-2, but it provides the least protection of human health and the environment. The total present worth cost of this alternative is approximately \$730,000. This total includes both capital costs and Operation and Maintenance costs. Capital costs (for equipment, labor, and materials) are approximately \$30,000. This includes the cost of repairing the existing fence which surrounds the site, if necessary. Operation and maintenance costs total approximately \$1.2 million over a thirty-year period. This includes the costs for groundwater monitoring and preparation of an annual groundwater monitoring report.

Implementation Time

Since this alternative does not include any remediation of contaminated soil, the time needed to put this alternative into effect (implementation time) is expected to be approximately three months. This includes time needed to prepare (and obtain DTSC approval for) a groundwater monitoring work plan, repair the existing fence, develop the land use covenant, and record the requirements on the property deed.

Groundwater Use

Of the final candidate alternatives which were considered, this alternative presents the greatest risk to present and future groundwater use because none of the contaminated soil or buried debris in S-2 would be removed or treated to reduce the level of contamination in this area. As a result, contaminants (primarily petroleum hydrocarbons) could migrate to groundwater and thus prevent future use of groundwater in the area. The soil contaminants and/or buried wastes in this Operable Unit are believed to be the primary source of existing groundwater contamination beneath the site. The thirty-year groundwater monitoring program would be designed to monitor the spread of additional groundwater contamination which might occur with this alternative.

Environmental Impact

Because this alternative does not include any remediation of contaminated soil or buried drums, implementing it would not cause significant environmental impact. However, it could result in potentially adverse long-term environmental impacts including contaminant migration either to groundwater or off-site in the form of airborne dust and does not represent a remedy for impacts which have already occurred. Of the final candidate alternatives, this alternative provides the least long-term protection of the environment.

Justification for Rejection or Selection

This alternative was rejected from consideration as the recommended remedial alternative because it would not meet remedial action objectives and would not provide adequate protection of human health and the environment. It would not reduce the toxicity, mobility, or volume of the contaminants at the site, nor would it eliminate the need for long-term access restrictions, strict land use restrictions, groundwater monitoring, or long-term operation and maintenance.

6.3.2.2 Alternative 10: Excavation/Off-Site Disposal of Soil Above Clean-Up Levels

Objectives and Scope

This alternative consists of excavation and off-site disposal of the soil contaminated with arsenic, lead, petroleum hydrocarbons, and polycyclic aromatic hydrocarbons above the restricted future land use clean-up levels. After the site is cleared and construction debris disposed off-site, excavated soil would be loaded onto rail cars and/or trucks and taken off-site and disposed in an appropriately licensed and permitted landfill. Any drums excavated during remedial activities in this operable unit would be located, brought to the surface, and placed in protective **overpack containers** unless empty and dry. The drum contents, if any, would be catalogued and tested as necessary to characterize the drummed material. Following characterization of the drum contents, the drums would be transported to an appropriate waste disposal facility. Depending on the drum contents, disposal may consist of off-site incineration, recycling, and/or disposal in an appropriately licensed and permitted landfill. Clean soil brought from off-site would be placed as fill to restore grade in excavated areas, if needed. Figure 16 shows a conceptual plan for Alternative 10.

Significant concentrations of chlorinated volatile organic compounds have been found in the deeper portion of the Central Fill Area. Therefore, it will be more health-protective and cost-effective to combine in-situ treatment (such as vapor extraction) with excavation and off-site disposal. A soil vapor extraction interim remedial measure is planned to be implemented in the Central Fill Area in late 1995. Cleanup levels for chlorinated volatile organic compounds as measured in soil gas have been established to be protective of groundwater quality.

Air monitoring would be conducted during all construction activities to assess the effectiveness of dust control measures. If results of air monitoring indicate that dust emissions are unacceptable, corrective action would be taken to reduce dust emissions. An air monitoring report would be prepared at the conclusion of the remedial action activities.

To verify that the soil contaminated above the remedial action objectives has been removed, confirmatory soil samples would be taken from the bottom and sides of the excavations. The samples would be sent to a laboratory and tested for arsenic, lead, and/or petroleum hydrocarbons, as appropriate. If statistical analysis of the test results shows that the remedial action objectives have not been achieved, excavation would continue until test results indicate that the affected soils have been cleaned up to the appropriate levels. Remedial action objectives for chlorinated volatile organic compounds will be verified by soil gas probe sampling and analysis.

Because this alternative provides for the removal of the buried wastes and soil contaminated above the remedial action objectives, a fence and groundwater monitoring are not included as part of this alternative. However, because of the less strict clean-up levels selected for Operable Unit S-2, future land uses would be restricted as described in Section 6.1.1 in order to protect human health. A land-use covenant would be entered into by the DTSC and UPRR. The land-use covenant would be recorded on the deed to the property to provide notice of restrictions on land use. Following remedial action, the existing fence will be maintained until site redevelopment is complete.

Cost Effectiveness

This is the most expensive alternative being considered for Operable Unit S-2; however, it also provides the greatest protection of human health and the environment. The total present worth cost of this alternative is approximately \$3.1 million. This includes capital costs for equipment, labor, and materials to excavate and dispose of soil contaminated above the clean-up levels, as well as related construction activities. There would be no operation and maintenance costs associated with this alternative.

Implementation Time

The time needed to implement this alternative is expected to be nine months, provided no difficulties or unforeseen delays are encountered. This includes two months for engineering design, three months to obtain the necessary permits, and six months to clear the site, excavate and dispose of the soil and wastes, and backfill the pits. It is expected that design and permitting would begin at the same time.

Groundwater Use

Potential future groundwater use would be beneficially affected by this alternative. By excavating soil contaminated above the clean-up levels and removing other buried wastes which may be providing a continuing source of groundwater contamination, the mass of contaminants that could move downward into groundwater would be reduced. This alternative is therefore more likely to protect the groundwater than the other final candidate alternative.

Environmental Impact

Dust generation is expected to be higher for this alternative than for the No Action Alternative because of the large volume of soil that would need to be excavated and transported off site. Standard construction industry dust control measures would be used during site clearing, grading, excavation, and construction activities to reduce the generation of contaminated airborne dust. There would also be a

temporary increase in noise and traffic at and near the site during the hours when site work is underway. Site work is planned for daylight hours during the week when most people are away from their homes. Following remediation, soil contaminants available to environmental receptors at and near the site would be limited. Soil contaminated above the restricted future land-use clean-up levels and waste would be disposed in a facility specifically designed for the long-term management of such wastes. Exposure to remaining soil contaminants (above unrestricted future land-use clean-up levels, but below the restricted future land use clean-up levels) would be limited by covering those areas with paving and buildings.

Justification for Rejection or Selection

This alternative would reduce both the volume and mobility of soil contaminants in Operable Unit S-2. Combined with controlled future development, this alternative would effectively eliminate most of the potential for human exposure to soil contaminants and environmental impacts, and would thus provide adequate protection of human health and the environment.

The implementation time for Alternative 10 is higher than Alternative 1, and it is the most expensive of the alternatives for this operable unit. The potential benefits obtained by removing waste materials and soil contaminated above the clean-up levels include preventing further groundwater contamination, protecting human health, and allowing a variety of beneficial future land uses. These benefits are believed to justify the cost, short-term environmental impacts and short-term human health risk. Alternative 10 was therefore selected as the recommended remedial alternative for Operable Unit S-2.

6.3.2.3 Recommended Remedial Alternative

Justification for Selection

Alternative 10 was selected as the recommended remedial alternative for Operable Unit S-2 for the following reasons:

- It would eliminate the primary source of present and potential future groundwater contamination.
- It would effectively eliminate the primary exposure pathways (inhalation of contaminated dust and ingestion of contaminated soil) for people and other biological receptors.
- It provides adequate overall long-term protection of human health and the environment.
- It will allow for many of the beneficial future land uses identified by the Union Pacific Land Use Committee and the DTSC.

Following approval of this Final Remedial Action Plan, a Remedial Action Design Work Plan will be prepared. It will provide detailed design specifications for the recommended remedial alternative for this Operable Unit. After the Remedial Action Design Work Plan is prepared, it will be submitted to the DTSC for review and approval. Design and construction activities associated with the recommended remedial alternative are discussed in Section 6.5.1.

6.3.3 Soil Operable Unit S-3

Soil Operable Unit S-3 is in the northeastern part of the inactive portion of the site (see Figure 14). This operable unit includes approximately 17 acres and contains soils contaminated with arsenic, lead, petroleum hydrocarbons, and polycyclic aromatic hydrocarbons above the remedial action objectives identified for this area. Future land use in Operable Unit S-3 is assumed to be unrestricted; therefore, the unrestricted future land use remedial action objectives are applicable for this area.

There are three final candidate remedial alternatives for Operable Unit S-3:

- Alternative 1 - No Action
- Alternative 4 - Containment with Institutional Controls
- Alternative 10 - Excavation and Off-site Disposal of Soils Above Clean-Up Levels.

Table 11 contains a summary comparison of the final candidate alternatives for Soil Operable Unit S-3, and Table 12 summarizes costs. This section discusses detailed analysis of these alternatives which was performed during preparation of the Feasibility Study Supplement.

6.3.3.1 Alternative 1: No Action

Objectives and Scope

The National Oil and Hazardous Substances Pollution Contingency Plan requires that the No Action Alternative be considered. The amount of risk reduction provided by each of the other final candidate alternatives is compared to the No Action Alternative to assess how effective they are. This alternative involves no clean-up of contaminated soil. It consists primarily of maintaining the existing fence around the entire site to prevent unauthorized access. A land use covenant would be entered into by DTSC and UPRR. The land use covenant would be recorded on the deed to the property to prohibit future land uses and activities which might disturb soil contaminants and cause human health risks and/or adverse environmental impacts. In addition, groundwater beneath the site would be monitored for a period of thirty years to check for changes in groundwater quality caused by the migration of contaminants in soil. Groundwater monitoring for this soil operable unit would be integrated with other

soil and groundwater operable unit groundwater monitoring programs. A report which discusses groundwater monitoring results would be submitted to the DTSC on a yearly basis.

Cost Effectiveness

This alternative has the lowest total present worth cost of the alternatives being considered for Operable Unit S-3, but provides the least protection of human health and the environment. The total present worth cost of this alternative is approximately \$750,000. This total includes both capital costs and Operation and Maintenance costs. Capital costs (for equipment, labor, and materials) are approximately \$53,000. This includes the cost of repairing and/or replacing the existing fence which surrounds the site. Operation and maintenance costs are approximately \$1.2 million over a thirty-year period. This includes the costs for groundwater monitoring and preparation of an annual report.

Implementation Time

Since this alternative does not include remediation of contaminated soil, the time needed to put this alternative into effect (implementation time) is expected to be approximately three months. This includes time needed to prepare (and obtain DTSC approval for) a groundwater monitoring work plan, repair the existing fence (if necessary), develop the land use covenant and, record the changes on the property deed.

Groundwater Use

Of the final candidate alternatives which were considered, this alternative presents the greatest risk to present and potential future groundwater use, because none of the contaminated soil in S-3 would be removed or treated to reduce the level of contamination in this area. As a result, some contaminants (primarily petroleum hydrocarbons) could migrate to groundwater and thus pose a threat to human health and the environment. The thirty-year groundwater monitoring program would be designed to monitor the potential for additional groundwater contamination which might occur.

Environmental Impact

Because this alternative does not include remediation of contaminated soil, implementing it would not cause significant short-term environmental impact. However, environmental impacts which have already occurred would not be remedied. In the long term, this alternative could result in potentially significant adverse environmental impacts including contaminant migration either to groundwater or off-site in the form of airborne dust. Of the final candidate alternatives, this alternative provides the least long-term protection of the environment.

Justification for Rejection or Selection

This alternative was rejected from consideration as the recommended remedial alternative because it would not meet remedial action objectives and would not provide adequate protection of human health and the environment. It would not reduce the toxicity, mobility, or volume of the contaminants at the site, nor would it eliminate the need for long-term access restrictions, strict future land use restrictions, groundwater monitoring, or long-term operation and maintenance.

6.3.3.2 Alternative 4: Containment with Institutional Controls

Objectives and Scope

This alternative would include leaving waste and contaminated soil in place, clearing away remaining debris, grading surface soil, and constructing an asphalt cap over soil contaminated above the unrestricted future land use clean-up levels. The cap would be designed to reduce infiltration of rainwater downward through contaminated soil to groundwater and prevent contaminated soil from being blown off-site by wind. The caps would be sloped so that water drains away from the capped areas into a collection system (see Figure 15).

During construction (especially at those times when contaminated soil is being moved or otherwise disturbed), soil would be wetted to minimize the amount of dust raised by these activities. Air monitoring would be conducted during construction activities to assess the effectiveness of dust minimization measures. If results of air monitoring indicate that dust emissions are unacceptable, corrective action would be taken to reduce dust emissions. An air monitoring report would be prepared at the conclusion of the remedial action activities.

The completed asphalt caps would be inspected yearly to identify necessary repairs. Regular maintenance of the asphalt surface would include re-sealing one-fourth of each cap every year in rotation so that each cap is completely resealed every four years. Additionally, the cap surface would be replaced with fresh asphalt every ten years. This maintenance program is designed to keep the caps in good condition.

In addition to construction of caps over areas where soil is contaminated above the unrestricted future land use clean-up levels, a land use covenant would be entered into by DTSC and UPRR. The land use covenant would be recorded on the deed to the property to prohibit future land uses and activities which might disturb soil contaminants and potentially cause human health risks or adverse environmental impacts. The site would be fenced to restrict unauthorized access. Groundwater quality would be monitored for a period of thirty years after the cap is finished and a report which discusses the results

of groundwater monitoring would be submitted to DTSC yearly. Groundwater monitoring for this soil operable unit would be integrated with other soil and groundwater operable unit groundwater monitoring programs.

Cost Effectiveness

This alternative has the second highest total present worth cost of the alternatives being considered for Operable Unit S-3, but would not provide for many of the beneficial future land uses that Alternative 10 would allow. The total present worth cost of this alternative is approximately \$1.5 million. This total includes both capital costs and Operation and Maintenance costs. Capital costs (for equipment, labor, and materials) are approximately \$660,000 and include the cost of all construction activities and repairing and/or replacing the existing fence which surrounds the site. Operation and maintenance costs would be approximately \$1.5 million over a thirty-year period. This includes the cost for cap maintenance and replacement, the groundwater monitoring program and yearly monitoring reports.

Implementation Time

The time needed to implement this alternative is expected to be six months, provided there are no unforeseen delays or difficulties encountered. This includes three months for engineering design of the cap, three months to obtain the necessary permits, and three months to clear and grade the site and construct the asphalt cap and fence. The design and permitting periods would begin at the same time.

Groundwater Use

Future groundwater use will not be significantly affected by this alternative. One purpose of the cap is to reduce the amount of water moving downward through contaminated soil and into groundwater. This alternative is therefore more likely to protect groundwater than Alternative 1, but somewhat less likely to do so than Alternative 10. The thirty-year groundwater monitoring program would be designed to provide an early warning of additional groundwater contamination which might occur because of the downward movement of soil contaminants.

Environmental Impact

Dust control measures would be used during site clearing, grading, and construction activities to reduce generation of contaminated airborne dust. Due to the nature of asphaltic material, there would be some air emissions and associated odor during paving of the asphalt cap. The expected levels of emissions would not exceed normal urban activity or result in significant environmental impacts. There would also be some increased noise and traffic at and near the site during the hours when site work is

underway. However, these impacts would be temporary and would be limited to daylight hours during the week when most people are away from their homes. Following remediation, soil contaminants available to environmental receptors would be limited. This is a result of reduced contaminant migration, as well as isolation of the contaminated material from sensitive environmental receptors.

Justification for Rejection or Selection

Alternative 4 would reduce the mobility of contaminants at the site. Although it would not reduce the toxicity of the contaminants or the volume of contaminated soil, it would effectively eliminate the most significant pathway for human and environmental exposure to the soil contaminants. Thus, it would provide adequate protection of human health and the environment.

This alternative is more expensive than both Alternatives 1 and 10. It would require about the same time to implement as Alternative 10 and would cause similar short-term environmental impacts during implementation. However, this Operable Unit would be relatively easy to reclaim for beneficial future land uses identified by the Union Pacific Land Use Committee and the DTSC, if another remedial alternative were chosen. Alternative 4 would allow for only very limited future land use. Therefore, this alternative was rejected as the recommended remedial alternative for Operable Unit S-3.

6.3.3.3 Alternative 10: Excavation/Off-Site Disposal of Soil Above Clean-Up Levels

Objectives and Scope

This alternative consists of excavation and off-site disposal of the soil contaminated with arsenic, lead, petroleum hydrocarbons, and/or polycyclic aromatic hydrocarbons at or above the unrestricted future land use clean-up levels. After the site is cleared and construction debris disposed off-site, excavated soil would be loaded onto rail cars and/or trucks and taken off-site and disposed in an appropriately licensed and permitted landfill. Clean soil brought from off-site would be placed as fill to restore grade in excavated areas, if needed. A conceptual plan for Alternative 10 is shown on Figure 16.

During construction (especially at those times when contaminated soil is being moved or otherwise disturbed), soil would be wetted to minimize the amount of dust raised by these activities. Air monitoring would be conducted during construction activities to assess the effectiveness of dust minimization measures. If results of air monitoring indicate that dust emissions are unacceptable, corrective action would be taken to reduce dust emissions. An air monitoring report would be prepared at the conclusion of the remedial action activities.

To verify that the soil contaminated above the remedial action objectives has been removed, confirmatory soil samples would be taken from the bottom and sides of the excavations. The samples would be sent to a laboratory and tested for arsenic and/or lead, as appropriate. The remedial action objectives apply to the soil column accessible for excavation above the water table. If statistical analysis of the test results shows that the remedial action objectives have not been achieved, excavation would continue until test results indicate that the affected soils have been cleaned up to the appropriate level.

Because this alternative provides for the removal of the soil contaminated above the unrestricted future land use remedial action objectives, a fence, land use covenants, deed notices, and groundwater monitoring would not be required to protect human health and the environment.

Cost Effectiveness

This is the most expensive alternative being considered for Operable Unit S-3, but it provides for the widest range of beneficial future land uses, as well as good protection of human health and the environment. The total present worth cost of this alternative is approximately \$3.0 million. This includes capital costs for equipment, labor, and materials needed to accomplish excavating and disposing of the soil contaminated above the remedial action objectives and all related construction activities. There would be no operation and maintenance costs associated with this alternative.

Implementation Time

The time needed to implement this alternative is expected to be seven months, provided no unforeseen delays or difficulties are encountered. This includes two months for engineering design, three months to obtain the necessary permits, and four months to clear and grade the site, excavate and dispose of the soil, and backfill the pits. It is expected that design and permitting would begin at the same time.

Groundwater Use

Future groundwater use would be beneficially affected by this alternative. Disposing of the soil contaminated above the clean-up levels would reduce contaminants that could move downward into groundwater. This alternative is therefore likely to protect the groundwater more than the other final candidate alternatives considered for Operable Unit S-3.

Environmental Impact

Dust generation is expected to be higher for this alternative than for other alternatives because of the large volume of soil that would need to be excavated and disposed. Standard construction industry

dust control measures would be used during site clearing, grading, excavation, and construction activities to reduce generation of airborne dust. There would also be some increased noise and traffic at and near the site during the hours when site work is underway. However, these impacts will be temporary and would be limited to daylight hours during the week when most people are away from their homes. Following remediation, soil contaminants available to environmental receptors would be limited. Soil contaminated above the unrestricted site clean-up levels would be disposed in a facility specifically designed for the long-term management of such wastes.

Justification for Rejection or Selection

Alternative 10 would reduce the volume of soil contaminants at the site. This alternative would effectively eliminate the most significant pathway for human exposure to soil contaminants and would thus provide adequate protection of human health.

The implementation time for this alternative is longer than Alternative 1, but about the same as Alternative 4. The magnitude of short-term environmental impacts would be about the same for this alternative as those associated with Alternative 4. This alternative would provide for virtually unlimited future beneficial land uses, and is reasonably cost-effective. Because the potential benefits of removing the soil contaminated above the clean-up levels justify the short-term environmental impacts and cost, Alternative 10 was selected as the recommended remedial alternative for Operable Unit S-3.

6.3.3.4 Recommended Remedial Alternative

Justification for Selection

Alternative 10 was selected as the recommended remedial alternative for Operable Unit S-3 for the following reasons:

- It would effectively eliminate the primary exposure pathways (inhalation of contaminated dust and ingestion of contaminated soil).
- Alternative 10 provides adequate overall long-term protection of human health and the environment through reduction of mobility, toxicity, and volume of contaminants at the site.
- It is reasonably cost-effective.
- It provides for unlimited future land uses, including all desirable land use types identified by the Union Pacific Land Use Committee and the DTSC at a reasonable cost.

Following approval of this Final Remedial Action Plan, a Remedial Action Design Work Plan will be prepared. It will provide detailed design specifications for the recommended remedial alternative for this Operable Unit. After the Remedial Action Design Work Plan is prepared, it will be submitted to the DTSC for review and approval. Design and construction activities associated with the recommended remedial alternative are discussed in Section 6.5.1.

6.3.4 Groundwater Operable Unit GW-1

Groundwater Operable Unit GW-1 consists of an approximately 35-acre groundwater plume which extends off-site (Plume A on Figure 8). This plume contains nickel, chlorinated volatile organic compounds, and volatile aromatic hydrocarbons at concentrations above the groundwater clean-up levels.

There are two final candidate alternatives for Operable Unit GW-1:

- Alternative 1 - No Action
- Alternative 4 - Extract, Treat, and Discharge.

This section presents a summary of the detailed analysis performed for these alternatives during preparation of the Addendum Feasibility Study. This analysis is also summarized in Table 13, and Table 14 is a cost summary.

6.3.4.1 Alternative 1: No Action

Objectives and Scope

The No Action Alternative involves neither clean-up of contaminated groundwater, nor groundwater monitoring. Consideration of the No Action Alternative is required by the National Oil and Hazardous Substances Pollution Contingency Plan. The amount of risk reduction provided by each of the other final candidate alternatives is compared to the No Action Alternative to assess how effective they are.

Cost Effectiveness

The No Action Alternative is the least expensive of the groundwater alternatives being considered for Operable Unit GW-1. There are no costs associated with this alternative. However, this alternative provides no protection of human health or the environment.

Implementation Time

Since the No Action alternative does not include any activities, it does not require any time to implement.

Groundwater Use

If implemented, this alternative will adversely affect future groundwater use at and in the vicinity of the site because existing contamination would continue to move off-site and may affect downgradient groundwater which is not currently impacted.

Environmental Impact

Since there are no clean-up activities associated with this alternative, there are no short term-impacts to the environment due to construction. However, this alternative may result in significant adverse environmental impacts as contaminants continue to migrate off-site. Of the final candidate alternatives for operable unit GW-1, this alternative provides the least protection of the environment.

Justification for Rejection or Selection

This alternative was rejected from consideration as the recommended remedial alternative because it would not meet remedial action objectives and would not provide adequate protection of human health and the environment. It would not reduce the toxicity, mobility, or volume of contaminants in groundwater.

6.3.4.2 Alternative 4: Extract, Treat, and Discharge

Objective and Scope

The objective of this alternative is to remove and treat contaminated groundwater until contaminant concentrations are below groundwater clean-up levels. This alternative consists of extraction, treatment of contaminated groundwater, and discharge of treated water to the sewer, monitoring groundwater to evaluate the effectiveness of remediation, and limiting the potential exposure to groundwater during remedial action by prohibiting permits for drilling of groundwater supply wells in Operable Unit GW-1. Groundwater monitoring for this operable unit would be integrated with other soil and groundwater operable unit groundwater monitoring programs. It also includes preparation of a report of groundwater monitoring results which would be submitted to the DTSC yearly.

TABLE 13
COMPARISON OF GROUNDWATER FINAL CANDIDATE ALTERNATIVES
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Operable Unit	Alternative	Short-term Effectiveness	Long-term Effectiveness	Reduction of Toxicity, Mobility and Volume	Implementability	Cost*	Compliance with ARARs	Overall Protection of Human Health and Environment	State Acceptance	Community Acceptance
GW-1	1 No Action	Poor	Poor	Poor	Fair	0	Poor	Poor	Poor	Poor
	4 Extract/ Treat/ Discharge	Good	Good	Good	Good	\$980,000 - \$3.1 million	Good	Good	Good	Good
GW-2	1 No Action	Poor	Poor	Poor	Poor	0	Poor	Poor	Poor	Poor
	2 Limited Action	Poor	Fair	Fair	Poor	\$180,000	Poor	Poor	Poor	Poor
	4 Extract/ Treat/ Discharge	Good	Good	Good	Good	\$170,000 - \$280,000	Good	Good	Good	Good

*When range of costs is presented for GW-1, the lower cost is based on 2 wells pumping at 10 gpm each for 30 years. Higher costs are based on 10 wells pumping at 20 gpm each for 30 years. For GW-2, lower cost is for air stripping; higher cost is for UV/Oxidation.

TABLE 14
SUMMARY OF ESTIMATED COSTS
GROUNDWATER ALTERNATIVES
 UNION PACIFIC RAILROAD YARD
 SACRAMENTO, CALIFORNIA

Operable Unit	Alternative	Capital Costs*	Operation and Maintenance Costs**	Total Costs	Total Present Worth Cost ***
GW-1	1	\$0	\$0	\$0	\$0
	4	\$320,000 to \$1.7 Million	\$1.2 to \$2.4 Million	\$1.5 Million to \$4.1 Million	\$980,000 to \$3.1 Million
GW-2	1	\$0	\$0	\$0	\$0
	2	\$0	\$293,000	\$293,000	\$180,000
	4	\$64,000	\$115,000 to \$231,000	\$187,000 to \$303,000	\$170,000 to \$280,000

* All capital costs are expended in the first year of the project life.

** O&M costs may not be constant over the project life.

*** Net present worth cost at 5% annual interest rate.

To remove contaminated groundwater, **extraction wells** would be placed on- and off-site. The exact number and location of the wells is not currently known, but will be determined before completion of the Remedial Action Design Work Plan, or during final design of the groundwater remedial system.

Extracted groundwater would be pumped through a piping system to a treatment system which will be located near the east central side of the site. Piping and wiring would need to be installed in a trench to connect the wells with the treatment system. Soil would be wetted, as necessary, during construction of the trench and treatment system foundation to minimize the amount of dust generated during construction. A conceptual plan of a groundwater extraction and treatment system is shown on Figure 17.

In order to improve efficiency, extend the operating life, and enhance the cost-effectiveness of the groundwater treatment system, some form of **pre-treatment** may be used. Pre-treatment of extracted water might consist of either physical (such as filtering) or chemical pre-treatment, depending on the quality of the extracted groundwater and the final treatment system used. Based on current knowledge of groundwater conditions, pre-treatment does not appear to be necessary.

The final groundwater treatment system may consist of one or more of the following:

- **Air stripping** transfers volatile organic contaminants from the water to the air in a closed system, creating a contaminant-rich air stream that is treated before it is released to the atmosphere. Treatment of air is accomplished either through **thermal oxidation** or **carbon adsorption**. Thermal oxidation is done by either burning contaminants or passing contaminants over a catalyst similar to a catalytic converter in a car's exhaust system. Carbon adsorption transfers contaminants from water (or air) to carbon. As more contaminants are transferred to the carbon, the pores in the carbon become full, it loses its effectiveness and must be replaced. The **spent carbon**, or carbon that has lost its ability to adsorb contaminants, is then transported off-site and recycled.
- **Granular activated carbon** uses activated carbon to remove volatile organic contaminants from groundwater.
- **UV-oxidation** uses ultraviolet light to destroy volatile organic contaminants in groundwater. A UV-oxidation system destroys contaminants by pumping contaminated groundwater to a treatment unit, injecting chemicals such as hydrogen peroxide or ozone into the contaminated groundwater, and then exposing the water to ultraviolet light in a closed system. The chemicals help the light break down contaminants more effectively. This process produces no residuals.
- If required as a condition of **effluent** discharge permits, the treatment system will include a process to remove nickel from groundwater. The planned groundwater Interim Remedial Measure is expected to provide additional information which will aid in assessment of the need to remove nickel prior to discharge.

The type of treatment best suited to this task depends on a number of factors including the type and concentration of groundwater contaminants and the flow rate of water through the system. These systems may be used independently or they may be combined to produce the best treatment at the least cost.

Treated groundwater would be discharged to the existing City of Sacramento sewer system through underground piping. The treated groundwater will flow through the sewer to a waste water treatment plant owned and operated by Sacramento County. Finally, treated groundwater will be discharged into the Sacramento River.

Cost Effectiveness

Alternative 4 is more costly than Alternative 1, but will remedy groundwater contamination and allow beneficial uses of groundwater after remedial action is complete. The total present worth cost of this alternative for Operable Unit GW-1 ranges from about \$980,000 to \$3.1 million, depending on the number and location of wells and which treatment system is selected. The least expensive treatment system is an air stripper that treats water at a low flow (approximately 20 gallons per minute). This system would also include treatment of air before release to the atmosphere. The most expensive system is UV-oxidation treatment at high flow rate (approximately 200 gallons per minute).

Capital costs are estimated to range from about \$320,000 to \$1.7 million and include costs for equipment, labor, materials, and equipment installation. Operation and maintenance costs are estimated to range from about \$1.2 to \$2.4 million over a three- to thirty-year period and include groundwater monitoring, sampling and analysis of treated groundwater, pump operation, treatment system operation, and annual reporting.

Implementation Time

The time needed to implement this remedial alternative for Operable Unit GW-1 is expected to be about 12 months, provided no unforeseen delays or difficulties are encountered. This includes three months to design the system, three months for DTSC review, three months to obtain construction permits, six months to obtain well permit restrictions, and three months for construction (i.e., installing groundwater extraction wells, trenching, installing piping and wiring, and installing the treatment system). It is assumed that obtaining well permit restrictions would be completed concurrently with DTSC review and approval. It is not currently known how long groundwater extraction and treatment would continue, but it is expected to take three to thirty years.

Groundwater Use

The overall long-term effects of this remedial alternative on groundwater use will be beneficial. After remedial action is complete, this resource will be available for future beneficial uses. During treatment, there may be local lowering of the groundwater table, but this is not expected to impact existing nearby groundwater users.

Environmental Impact

Short-term environmental impacts would occur during construction of the system and may include increased traffic congestion, noise and dust from construction equipment used to drill wells, dig trenches, and install the treatment system. Standard construction industry dust control measures will be used, as necessary, during trenching and construction of the treatment system foundation. Noise and traffic impacts will be temporary and limited to daylight hours when most people are away from home. Following remediation, contaminants previously available to environmental receptors would be removed.

Justification for Rejection or Selection

This remedial alternative would result in some short-term environmental impacts during construction and system operation. However, these impacts would be minor and would be out-weighted by long-term advantages of removing contaminated groundwater. Extraction and treatment of contaminated groundwater would reduce the toxicity, mobility, and volume of contaminants in Operable Unit GW-1, thereby providing adequate protection of human health and the environment and allowing future beneficial uses of groundwater. This alternative uses proven technologies to extract and treat groundwater, and though this alternative is more expensive than the No Action Alternative, the extra costs are justified by the long-term benefits. Therefore, this alternative was selected as the recommended remedial alternative for Operable Unit GW-1.

6.3.4.3 Recommended Remedial Alternative

The recommended remedial alternative for Operable Unit GW-1 is Alternative 4. This alternative consists of extraction of contaminated groundwater, treatment of contaminated groundwater, and discharge of treated water to the sewer. Also included in this alternative are groundwater monitoring to assess plume migration and the effectiveness of groundwater remedial action, and restrictions on the number and type of permits for the drilling of groundwater supply wells during groundwater clean-up to control access to contaminated groundwater.

As an enhancement of this alternative, a soil vapor extraction system will be installed in the Central Fill Area and Oil House Area. The purpose of the soil vapor extraction system will be to remove volatile organic compounds from soil in these areas. Removal of volatile organic compounds from soil above the water table in these areas will remove the primary source of volatile organic compounds to groundwater, thereby reducing the length of time necessary to remediate groundwater.

Justification for Selection

Alternative 4 was selected as the recommended remedial alternative for the following reasons:

- It will provide the greatest protection of human health and the environment.
- It will reduce the toxicity, mobility, and volume of contaminants.
- It uses proven technologies that are well tested and easy to implement.
- It is reasonably cost-effective.
- Short-term impacts during construction and system operation will be minor and would be outweighed by the long-term advantages of meeting Remedial Action Objectives for groundwater.

Following approval of this Final Remedial Action Plan, a Remedial Action Design Work Plan will be prepared. It will provide detailed design specifications for the recommended remedial alternative for this Operable Unit. After the Remedial Action Design Work Plan is prepared, it will be submitted to the DTSC for review and approval. Design and construction activities associated with the recommended remedial alternative for Operable Unit GW-1 are discussed in Section 6.5.2.

6.3.5 Groundwater Operable Unit GW-2

Groundwater Operable Unit GW-2 is the smaller on-site groundwater contaminant plume (Plume B on Figure 8). This smaller plume covers an area of about 5 acres and contains volatile organic compounds and nickel above the groundwater clean-up levels. Three final candidate alternatives for Operable Unit GW-2 were analyzed in the Feasibility Study Supplement:

- Alternative 1 — No Action;
- Alternative 2 — Limited Action; and
- Alternative 4 — Extract, Treat, and Discharge.

This section summarizes the detailed analysis of these three alternatives for Operable Unit GW-2. Tables 13 and 14 also contain a summary comparison of the final candidate alternatives for groundwater Operable Unit GW-2.

6.3.5.1 Alternative 1: No Action

Objectives and Scope

Consideration of the No Action Alternative is required by the National Oil and Hazardous Substances Pollution Contingency Plan. The amount of risk reduction provided by each of the other final candidate alternatives is compared to the No Action Alternative to assess how effective they are. The No Action Alternative involves neither clean-up of contaminated groundwater, nor groundwater monitoring.

Cost Effectiveness

The No Action Alternative is the least expensive of the alternatives being considered for Operable Unit GW-2, but does not remedy existing groundwater contamination. There are no costs associated with this alternative.

Implementation Time

Since this No Action alternative does not include any activities, it does not require any time to implement.

Groundwater Use

Because the No Action alternative leaves the contaminated groundwater in place, groundwater use in and around the area of the contaminated groundwater would need to be limited. Over time, the contamination would move and spread in the direction of groundwater flow and might ultimately impact nearby existing groundwater users.

Environmental Impact

Since there are no clean-up activities associated with this alternative, there are no short-term impacts to the environment due to construction. However, since this alternative does not remove and/or treat contaminants, this alternative provides the least protection of the environment of all the final candidate alternatives for Operable Unit GW-2.

Justification for Rejection of Selection

This alternative was rejected from consideration as the recommended remedial alternative because it would not meet Remedial Action Objectives and would not provide adequate protection of human health and the environment. It would not reduce the toxicity, mobility, or volume of the contaminants in groundwater, and could prevent future beneficial uses of this resource.

6.3.5.2 Alternative 2: Limited Action

Objectives and Scope

The objective of the Limited Action Alternative is to provide human health protection beyond the No Action Alternative by monitoring groundwater, and by limiting the potential exposure to contaminated groundwater by implementing restrictions on drilling permits for groundwater supply wells in Operable Unit GW-2.

The Limited Action Alternative involves no clean-up of contaminated groundwater. However, it does include groundwater monitoring for 30 years. Groundwater monitoring for this operable unit would be integrated with other soil and groundwater operable unit groundwater monitoring programs. It also includes preparation of a report of groundwater monitoring results which would be submitted to the DTSC yearly.

Cost Effectiveness

The Limited Action Alternative is the least expensive of the alternatives being considered for Operable Unit GW-2 and provides adequate protection of human health. This alternative is estimated to have a total present worth cost of about \$180,000. This includes only operation and maintenance costs. Operation and maintenance costs include groundwater sampling, analytical tests, and preparation of an annual groundwater monitoring report for 30 years. The total present worth cost does not include the costs for drilling permit restrictions because the costs for these restrictions are unknown.

Implementation Time

The time expected to put this alternative into effect is about nine months. This includes three months to prepare a groundwater monitoring work plan, three months for review and approval of the work plan by DTSC, and six months to obtain well permit restrictions. It is assumed that obtaining permit restrictions would be concurrent with DTSC review and approval. There are no construction activities associated with the Limited Action Alternative.

Groundwater Use

This alternative leaves the contaminated groundwater in place and limits groundwater use in the area of GW-2. Because there is currently no known use of groundwater in GW-2, this alternative will not adversely affect present beneficial use of this resource. Over time, the concentration of contaminants in GW-2 will decrease due to natural breakdown of the contaminants and dilution. The rate at which the concentrations will decrease is unknown, but levels could drop below groundwater clean-up levels in a relatively short period of time so that future beneficial use of the groundwater would not be adversely affected. The groundwater monitoring program included in this alternative would monitor both the movement and concentrations of the contaminants in the plume to evaluate the reduction of the concentration of contaminants in the plume through natural degradation.

Environmental Impact

Since there are no clean-up activities associated with this alternative, there are no short-term impacts to the environment due to construction. However, because this alternative does not remove or treat contaminants, it provides less protection of the environment than Alternative 4, and is only marginally better than Alternative 2 in this respect.

Justification for Rejection of Selection

This alternative would not provide an immediate remedy for existing environmental impacts. However, it would allow for the reduction of the volume and toxicity of contaminants through natural degradation over an extended period. Human health would be protected by monitoring contaminant degradation and potential migration and by limiting access to the groundwater through permit restrictions. Because Alternative 2 does not remedy existing impacts and will prevent future beneficial uses of groundwater for many years, it was rejected from further consideration as the recommended remedial alternative for Operable Unit GW-2.

6.3.5.3 Alternative 4: Extract, Treat, and Discharge

Objective and Scope

The objective of this alternative is to treat contaminated groundwater until contaminant concentrations are below groundwater clean-up levels. Alternative 4 consists of extraction, treatment of contaminated groundwater, and discharge of treated water to the sewer, monitoring groundwater to evaluate the progress of clean-up, and limiting the potential exposure to groundwater during remedial action through restrictions on permits for drilling of groundwater wells in Operable Unit GW-2.

Groundwater monitoring for this operable unit would be integrated with other soil and groundwater operable unit groundwater monitoring programs. It also includes preparation of an annual groundwater monitoring report which would be submitted to DTSC.

To remove contaminated groundwater, extraction wells would be placed on-site. The exact number and location of the wells is not currently known, but will be determined before completion of the Remedial Action Design Work Plan. It is estimated that the total flow to the treatment system would be 20 gallons per minute, and that pumping and treatment would last for about 3 years.

Extracted groundwater would be pumped to a treatment system that is assumed to be located near the east central portion of the site. Piping and wiring would need to be installed in a trench to connect the wells with the treatment system. Soil would be wetted during construction of the trench and treatment system foundation, as necessary, to minimize the amount of dust generated during construction. A conceptual plan for Groundwater Alternative 4 is shown on Figure 17.

In order to improve the efficiency, extend the operating life, and enhance the cost effectiveness of the treatment system, some form of pretreatment may be used. The type of pretreatment that may be required and associated costs cannot be specified until more data is collected on the quality of extracted water. Based on current knowledge of groundwater conditions, pretreatment is not expected to be necessary.

The final groundwater treatment system may consist of one or more of the following:

- Air stripping transfers the volatile organic contaminants from the water to the air in a closed system, creating a contaminant-rich air stream that is treated before it is released to the atmosphere. Treatment of the air is accomplished either through thermal oxidation or carbon adsorption. Thermal oxidation is done by either burning the contaminants or passing contaminants over a catalyst similar to a catalytic converter in a car's exhaust system. Carbon adsorption transfers contaminants from water (or air) to carbon. As more contaminants are transferred to the carbon, the pores in the carbon become full, it loses its effectiveness and must be replaced. The spent carbon, or carbon that has lost its ability to adsorb contaminants, is then transported off-site and recycled.
- Granular activated carbon uses activated carbon to remove volatile organic contaminants from groundwater.
- UV-oxidation uses ultraviolet light to destroy volatile organic contaminants in groundwater. A UV-oxidation system destroys contaminants by pumping contaminated groundwater to the surface of the site, injecting chemicals such as hydrogen peroxide or ozone into the contaminated groundwater, and then exposing the water to ultraviolet light in a closed system. The chemicals help the light break down contaminants more effectively. This process produces no residuals.

- If required as a condition of effluent discharge permits, the treatment system will include a process to remove nickel from groundwater. The planned groundwater Interim Remedial Measure is expected to provide additional information which will aid in assessment of the need to remove nickel prior to discharge.

The type of treatment best suited to this task depends on a number of factors including the type and concentration of groundwater contaminants and the flow rate of water through the system. These systems may be used independently or they may be combined to produce the best treatment at the least cost.

Treated groundwater would be discharged to the existing City of Sacramento sewer system and will flow through underground pipe to a waste water treatment plant owned by Sacramento County. The treated groundwater will ultimately be discharged into the Sacramento River.

Cost Effectiveness

Alternative 4 is the most expensive alternative considered for Operable Unit GW-2. However, it will remedy existing groundwater impacts relatively quickly and allow future beneficial uses of groundwater sooner than either Alternative 1 or 2. The total present worth cost of this alternative for Operable Unit GW-2 ranges from \$170,000 to \$280,000. The least expensive system is an air stripper that also includes treatment of the air before release to the atmosphere. The most expensive system is UV-oxidation treatment. Capital costs are estimated to be about \$60,000 if the groundwater from GW-2 is treated using the same equipment designed for GW-1. They include costs for equipment, labor, materials, and installation. Operation and maintenance costs are estimated to range from about \$110,000 to \$230,000. They include costs for groundwater monitoring, sampling and analysis of treated groundwater, pump operation, treatment system operation, and annual reporting.

Implementation Time

The time needed to implement this alternative for Operable Unit GW-2 is expected to be about eleven months, provided no difficulties or unforeseen delays are encountered. This includes three months to design the system, three months for DTSC review, three months to obtain construction permits, six months to obtain well permit restrictions, and two months for construction (i.e., installing groundwater extraction wells, trenching, installing piping and wiring, and installing the treatment system). It is assumed that obtaining well permit restrictions would be completed concurrently with DTSC review and approval. Operation and maintenance of the treatment system are expected to continue for 3 years or longer.

Groundwater Use

The long-term effects of this alternative on future groundwater use will be beneficial because groundwater contaminants will be removed through treatment.

Environmental Impact

Short-term impacts would occur during construction of the system and may include increased traffic congestion, noise and dust from construction equipment used to drill the wells, dig trenches, and install the treatment system. Standard construction industry dust control measures, such as using water to wet down soil, will be used as necessary during construction of the trench and treatment system foundation. Noise and traffic impacts will be temporary and work will occur during business hours when most people are away from home.

Justification for Rejection or Selection

This alternative would result in some short-term environmental impacts during construction and system operation. Removal of contaminated groundwater would reduce the toxicity, mobility, and volume of contaminants in Operable Unit GW-2, thereby providing adequate protection of human health and the environment and providing for beneficial use of groundwater resources. Alternative 4 is also reasonably cost-effective. Therefore, this alternative was selected as the recommended remedial alternative for Operable Unit GW-2.

6.3.5.4 Recommended Remedial Alternative

The recommended remedial alternative for Operable Unit GW-2 is Alternative 4 (Extract, Treat, and Discharge). This alternative consists of extraction of contaminated groundwater, treatment of contaminated groundwater, and discharge of treated water to the sewer. Also included with this alternative are groundwater monitoring and restrictions on the number and type of permits for the drilling of groundwater wells during groundwater clean-up.

Justification for Selection

Alternative 4 was selected as the recommended remedial alternative for the following reasons:

- It will provide the greatest protection of human health and the environment.
- It will reduce the toxicity, mobility, and volume of contaminants.

- It uses proven technologies that are well tested and easy to implement.
- It is reasonably cost-effective.
- Short-term impacts during construction and system operation will be minor and would be outweighed by the long-term advantages of meeting Remedial Action Objectives for groundwater.

Following approval of this Final Remedial Action Plan, a Remedial Action Design Work Plan will be prepared. It will provide detailed design specifications for the recommended remedial alternative for this Operable Unit. After the Remedial Action Design Work Plan is prepared, it will be submitted to the DTSC for review and approval. Design and construction activities associated with the recommended remedial alternative for Operable Unit GW-2 are discussed in Section 6.5.2.

6.4 REMEDIAL ACTION FOR SOIL OPERABLE UNIT S-5

Prior to completion of the additional investigation in the northeastern portion of Operable Unit S-5, a feasibility study analysis for this operable unit was planned based on the assumption that soil impacts present in that area would be considered to pose a threat to groundwater quality, human health, and/or the environment. However, data obtained from that additional subsurface investigation indicate that soil impacts do not pose a threat to human health. Groundwater impacts appear to be very limited, and do not currently exceed established RAOs. These minimal impacts to soil and groundwater may be further reduced by naturally occurring biodegradation. A formal feasibility study analysis was therefore not completed for this portion of the site.

In keeping with the recent findings, planned remedial action for Operable Unit S-5 will consist of the following:

- Cleanup of diesel-impacted soil using in-situ bioremediation will be considered if diesel impacts to groundwater later become significant. Otherwise, no action to address these soil impacts will be taken;
- Providing and maintaining a cover over selected slag and/or metals-impacted soil, and removal of agreed-upon areas of slag; and
- If, after one year of groundwater monitoring, groundwater impacts are demonstrated, a focused feasibility study of remedial alternatives for groundwater will be performed. For the purpose of this Final Remedial Action Plan, the preliminary clean-up level for diesel hydrocarbons in groundwater is 100 $\mu\text{g/L}$.

These proposed actions are discussed in greater detail in the following sections.

6.4.1 Remedial Action to Address Petroleum Hydrocarbons in Soil

As discussed in the Additional Subsurface Investigation Report (Dames & Moore, 1993b), petroleum hydrocarbons were reported (as diesel, kerosene, and lubricating oil) for soil samples collected from the northeastern portion of Operable Unit S-5 at concentrations ranging from 65 to 8,300 mg/Kg. The majority of reported detections were less than 2,000 mg/Kg. Soil samples judged in the field to have the greatest concentrations of petroleum hydrocarbons were also analyzed for polycyclic aromatic hydrocarbons. Polycyclic aromatic hydrocarbons were not detected in any of the soil samples analyzed.

The area of impacted soil is estimated to have an aerial extent of approximately 10,000 square feet, and extends from approximately five feet below ground surface (bgs) into the saturated zone (up to 29 feet bgs). The areal extent of these impacts is shown on Figure 5.

Due to the lack of complete exposure pathways and significant groundwater impacts associated with this operable unit, no action has been selected. If future groundwater monitoring indicates that impacts are increasing, in-situ bioremediation of the impacted soil may be attempted.

6.4.2 Remedial Action to Address Petroleum Hydrocarbons in Groundwater

During the additional subsurface investigation, diesel hydrocarbons were detected in three of six Hydropunch groundwater samples in the northeastern portion of Operable Unit S-5. Detections of diesel ranged from 0.29 to 2.9 mg/L in these three samples, and polycyclic aromatic hydrocarbons were not detected in any of the six groundwater samples (Dames & Moore, December 1993b).

In April 1994, additional in-situ groundwater samples were collected in operable unit S-5 to delineate the downgradient extent of diesel hydrocarbon impacts to groundwater (Dames & Moore, 1994c). In July 1994, one well (MW-48) and two piezometers (P-10 and P-11) were installed to verify the extent of impacts and to enable monitoring of the groundwater flow direction and gradient in this area.

Diesel was reported in the in-situ water samples at concentrations ranging from less than the detection limit of 0.05 mg/L to 0.79 mg/L, and oil was reported at concentrations ranging from less than the detection limit of 0.5 mg/L to 2.2 mg/L. Results of subsequent monitoring of MW-48, P-10, and P-11 have shown that these constituents are typically not detected. Diesel was reported for the sample collected from MW-48 during first-quarter 1995 groundwater monitoring at 0.43 mg/L (Dames & Moore, 1995b).

Based on currently available data, groundwater impacts in the northeastern portion of Operable Unit S-5 appear to be limited to a small area (less than 7,000 square feet), and are contained within the UPRR property boundary (see Figure 8, Plume C). Furthermore, analytical data indicate that there are no carcinogenic or toxic constituents in groundwater in this area. No action has therefore been selected for groundwater impacts in Operable Unit S-5.

For the purposes of this Final Remedial Action Plan, the preliminary clean-up level for diesel hydrocarbons is 100 $\mu\text{g/L}$ and clean-up levels for other constituents will be as stated in Table 8.

6.4.3 Remedial Action to Address Slag and Metals Impacted Soil

As discussed in the report, Development of Remedial Action Levels (Dames & Moore, 1992b), the concentrations of metals detected in soil in Operable Unit S-5 do not exceed the calculated risk-based allowable exposure concentrations. This is conservative in that exposure point concentrations were calculated without considering the low bioavailability of the metals present in the slag.

An air monitoring study was performed in operable unit S-5 from August to November 1994 (Dames & Moore, 1995b). The purpose of the study was to assess the concentrations of arsenic and lead in airborne particulates emanating from the active railyard. The results of air monitoring showed that lead concentrations were, in all samples, less than the ambient air quality standard of 1.5 $\mu\text{g/M}^3$. Arsenic was detected in only two samples, both collected during the last round of air monitoring, with the highest concentration reported for the sample collected from the background station. Therefore, the following plan will be implemented to minimize airborne slag particulates:

- Track reballasting with rock will take place as part of an ongoing railyard operation and maintenance;
- Gravel cover will be maintained over exposed slag along non-rail (truck) traffic ways (the eastern portion of the active yard) to mitigate potential particulate emissions;
- The gravel cover will be periodically inspected and replenished as necessary;
- Exposed slag in the eastern portion of Operable Unit S-5 has been replaced with rock ballast as part of the slag removal Interim Remedial Measure in late 1993.

6.5 REMEDIAL ACTION DESIGN AND CONSTRUCTION ACTIVITIES

This section describes activities which will take place after this Final Remedial Action Plan is finalized, including pre-design, design, and construction activities. These activities are discussed in general terms, because many of the specific details are not yet known. After the Remedial Action Plan has been accepted as final, work will begin on a detailed Remedial Action Design Work Plan. The purpose of the Remedial Action Design Work Plan is to:

- Describe the remedial actions which have been selected to remedy soil and groundwater contamination at the site.
- Discuss soil and groundwater remedial pre-design activities that must be completed prior to initiation of remedial systems design and remedial actions.
- Provide a detailed description of how soil and groundwater treatment systems or activities will be designed.
- Provide a detailed schedule for site-wide remedial action including engineering design, construction, and operation and maintenance.

Typical elements of the Remedial Action Design, either included in the Work Plan or described in the Work Plan and provided as subsequent submittals, are listed below:

- Excavation Plan;
- Grading Plan;
- Transportation Plan;
- Sampling and Analysis Plan;
- Quality Assurance Project Plan; and
- Data Management Plan.

Recommended remedial alternatives for soil are discussed in Section 6.4.1, and groundwater recommended remedial alternatives are discussed in Section 6.4.2.

Due to recent advances in groundwater remediation system operations, and UPRR's intent to proceed with full-scale groundwater remediation implementation, discussion of groundwater activities in the Remedial Action Design Work Plan may not be needed.

6.5.1 Recommended Remedial Alternatives for Soil

Soil Alternative 10 (Excavation and Off-Site Disposal of Soil Above Clean-Up Levels) was selected for soil Operable Units S-1, S-2, and S-3. The recommended remedial alternative includes

excavating soil contaminated above the clean-up levels, loading excavated soil onto railcars or trucks and transporting it to an appropriately licensed and permitted landfill for disposal. It is anticipated that remedial action for soil in Operable Unit S-5 will consist of in-situ treatment. Initially, a pilot study will be performed. Design, construction, construction monitoring, and Health and Safety monitoring activities which will be performed are discussed in general terms below. Environmental impacts associated with construction activities are also discussed.

6.5.1.1 Design Activities

Areas of soil removal will be identified for each operable unit as part of the design activities associated with Alternative 10. Clean-up levels for each operable unit will depend on future land uses as identified in Section 6.1. Clean-up levels will be used together with soil contaminant distribution information collected during the Remedial Investigation to plan a series of excavation areas. It is anticipated that excavation areas will be similar in location and size to the areas shown on Figures 5, 6, 7, and 12. Engineering design for Alternative 10 will consist of planning soil excavation and transport activities and will include several design drawings, a construction specification, and other engineering documents. Products of engineering design may include the following:

- Excavation and Grading Plan drawings
- Identification of temporary on-site soil stockpile areas
- Equipment and material lists
- Contractor bid and performance specifications.

Because soil contamination at this site tends to be shallow and spread over relatively large areas, shoring of excavations to prevent cave-in is not expected to be needed. One exception to this is the Central Fill Area in Operable Unit S-2. The Central Fill Area contains debris and soil contamination to a depth of approximately 15 feet below the existing ground surface. Shoring or bracing may therefore be required in this area. In addition, the exact nature and location of all waste materials present in this area are not currently known. As mentioned previously, miscellaneous debris including drums have been encountered during remedial investigation of this area. Prior to beginning excavation activities in Operable Unit S-2, an attempt will be made to evaluate the area using **electromagnetic survey** or other **geophysical investigation** techniques to identify the location of potential metallic subsurface obstacles such as drums.

In addition to DTSC approval, soil remedial action activities at the site are expected to require other state and local agency permits. It is expected that the Sacramento Metropolitan Air Quality Management District will issue an air emissions permit. Also, grading and construction permits from the City of Sacramento Building Department will be needed. Other permits necessary for this project will be identified during preparation of the design documents.

6.5.1.2 Construction Activities

After the Remedial Action Design Work Plan and engineering design drawings and documents are completed and approved by the DTSC, construction activities will begin. Potential site remediation contractors will be asked to submit bids for site work. The bids will be evaluated, and a qualified contractor will be selected to perform the remedial activities. It is anticipated that site work and construction activities associated with Soil Alternative 10 will take place in the following order:

- The site will be **cleared and grubbed** (shrubs, trees, and debris will be removed and disposed off-site).
- An attempt will be made to locate subsurface hazards such as piping and drums (if present in the Central Fill Area) using electromagnetic surveying or other geophysical investigation techniques. Once located, these objects will be carefully excavated. If drums are found, each drum (except those which are empty and dry) will be placed in a protective overpack to prevent leakage. Following **waste characterization**, drums will be taken off-site for recycling or other disposal, as appropriate.
- Soil contaminated above the clean-up levels will be excavated and loaded onto railcars and/or trucks (depending on its destination) for transport off-site. Transport vehicles will be covered to prevent load loss during transit. The hazardous waste hauler(s) will be certified, and waste materials will be manifested and transported in accordance with applicable state and federal regulations.
- Temporary soil stockpiles will be covered as necessary to prevent wind-blown dust.
- Confirmatory soil samples will be collected from the walls and bottom of each excavation. These samples will be submitted to a laboratory for testing to assess residual contaminant concentrations after soil excavation. If statistical analysis of the test results indicates that the clean-up levels have been met, excavation will discontinue. Otherwise, additional excavation and sampling will continue until the desired clean-up levels have been reached. Sampling and analysis methods will be described in detail in the Sampling and Analysis Plan.
- Clean soil may be brought from an off-site location and placed in the excavations to restore grade and/or eliminate safety hazards, if needed. As the clean soil fill is placed in the excavations in thin layers, it will be compacted in accordance with specifications to reduce potential for settlement.
- The fence that currently surrounds the site will be maintained to prevent unauthorized access to the site during construction activities.

To limit the amount of dust generated by construction activities, water will be sprayed onto contaminated soil as needed until excavation and backfilling operations are finished.

6.5.1.3 Construction Monitoring

During construction activities, the quality of work will be inspected at appropriate intervals as specified in the Quality Assurance Project Plan and construction specifications. Several tests commonly used to measure compliance with construction specifications will be performed. These tests may include:

- Testing of imported fill for chemical constituents prior to placement.
- **Modified Proctor Test** (Moisture-Density Relationship) of clean soil fill used to backfill excavation pits.
- Testing **clean fill** after compaction to verify that the proper density has been achieved.

6.5.1.4 Health and Safety Monitoring

Site work activities may create a temporary increase in airborne dust and therefore a short-term health risk to the public and on-site workers. However, dust control measures will be used to minimize airborne dust and the potential threat to site workers and the public. Air monitoring will be conducted to measure potential dust emissions during remedial activities.

Air sampling will be conducted by a trained specialist during construction activities that could create airborne dust. Air sampling typically consists of collecting samples of airborne dust in the work area and at various other locations using low- or high-volume air samplers and/or monitoring fugitive dust levels using **real-time direct-reading instruments**. Samplers will be located upwind of the site to indicate normal background levels and downwind to capture emissions produced by the work activities. Samples will be tested regularly to assess levels of contaminated dust.

If levels of dust or contaminants of concern (lead, arsenic, and/or asbestos) exceed allowable levels established in the **Site Health and Safety Plan** or permit requirements, construction will be stopped and work methods modified so that dust and/or airborne contaminants are reduced to acceptable levels. If the wind speed rises above limits set in the Site Health and Safety Plan or existing permits, construction work will stop until the wind dies down to an acceptable speed. If necessary, site workers may be required to use **personal protective equipment** (such as air-purifying respirators and protective suits) to prevent breathing and/or swallowing contaminated dust and to prevent contamination of clothing and skin. Signs will be posted around the site to inform the public of potential health and safety risks.

Prior to initiation of site work, the DTSC will be informed in writing of additional monitoring required as a result of permit restrictions. These will also be incorporated into the Site Health and Safety Plan and/or the Remedial Action Design Work Plan. On-site personnel will be properly trained in accordance with the **Occupational Safety and Health Act**, will participate in a **medical surveillance**

program, and will be equipped with personal protective equipment as specified in the Site Health and Safety Plan. Workers will be checked frequently during site work to verify compliance with the Site Health and Safety Plan.

6.5.1.5 Environmental Impacts

Implementation of the recommended remedial alternative will likely create short-term environmental impacts caused by construction activities. These impacts are expected to include increased noise, truck traffic, and dust emissions on the site and in the vicinity. The impact of noise and traffic will be temporary, and site work will be limited to daylight hours during the week when most people are away from their homes. Dust emissions will be mitigated through the use of standard construction industry dust control measures.

The only long-term environmental impact associated with Alternative 10 is the potential need to restrict future land uses in Operable Units S-1 and S-2. Redevelopment plans for these areas must incorporate engineered controls to prevent exposure to the relatively low levels of contamination that will be left in place after clean-up. Future land use in Operable Unit S-3 will be unrestricted after remediation is complete.

6.5.2 Recommended Remedial Alternatives for Groundwater

Groundwater Remedial Alternative 4 (Extract, Treat, and Discharge) was selected as the recommended remedial alternative for groundwater Operable Units GW-1 and GW-2. Alternative 4 includes pumping contaminated groundwater to a treatment unit, treating the water to remove contaminants, and discharging the treated groundwater to the City sewer. Design, construction, monitoring, and Health and Safety monitoring are discussed in general terms below. Environmental impacts associated with construction activities are also discussed.

6.5.2.1 Design Activities

Design of the extraction system will include selecting the optimum location for extraction wells. Well locations should optimize groundwater extraction while minimizing adverse impacts to the surrounding community. Location of wells will also consider the best possible route for the trench that will carry piping and wiring between off-site wells and the on-site treatment system. Other important elements of system design will be safeguards to prevent untreated water from accidentally being discharged to the sewer and automatic controls to shut the system down if flow within the sewer exceeds its design capacity.

Design of the treatment system will include selecting a treatment unit of sufficient size to accommodate the flow of groundwater from the extraction wells. The engineering design of the system may include several design documents and drawings which will be incorporated into the Remedial Action Design Work Plan. These documents may include the following:

- Trench design drawings
- Treatment system pad and enclosure design drawings
- Treatment system design drawings
- Extraction well design drawings
- Piping design and layout drawings
- Existing infrastructure drawings
- Equipment and materials list
- Subcontractor bid and performance specifications.

Appropriate permits will be obtained for system construction and discharge of treated groundwater. These permits may include but not be limited to: building permits, well drilling permits, sewer discharge permits (allowed flow rates, discharge location, and contaminant concentrations), air permits (if an air stripper is used), and an agreement with the City of Sacramento to permit use of the City sewer system. Additionally, water supply well installation permit restrictions will be developed for DTSC review and approval. Water supply well permit restriction will prohibit new supply wells within the contaminant plumes until groundwater remediation is complete.

6.5.2.2 Construction Activities

A design work plan for extraction and treatment of off-site groundwater has been submitted to the DTSC for review and approval and design is underway. Potential groundwater remediation system contractors will be asked to submit bids for construction and installation of the groundwater treatment system in August 1995. The bids will be evaluated, and a qualified contractor will be selected to perform the work. Construction activities will begin only after DTSC approval is received. Construction of different parts of the system will probably be concurrent and include the following:

- Extraction well installation
- Trench excavation, piping and wiring installation, and trench backfilling
- Installation of a foundation pad and enclosure for the treatment system
- Installation of the treatment system
- Installation of piping to the discharge point.

Once the system is completed, it will be tested over a period of about two months to evaluate its performance. Flows from different wells may be adjusted, treated water will be sampled to make sure

the system is working properly, and safeguards will be tested to ensure that they also are working properly. This initial operation period is commonly called "system start-up".

6.5.2.3 Construction Monitoring

During construction, quality of the work will be periodically inspected. Inspections will include review of extraction well construction, trenching, treatment system foundation and enclosure construction, and piping and wiring tests.

6.5.2.4 Health and Safety Monitoring

Site work activities may create a temporary increase in airborne dust. However, site work for groundwater remediation will be much less extensive than work required for soil remediation, and the potential for exposure to site workers and the public is not considered significant. As a safety precaution, dust control measures will be used to control visible dust emissions from the site, if necessary.

On-site personnel will be properly trained in accordance with the Occupational Safety and Health Act, will participate in a medical surveillance program, and will be equipped with personal protective equipment as specified in the Site Health and Safety Plan. Workers will be checked frequently during site work to verify compliance with the Site Health and Safety Plan.

6.5.2.5 Environmental Impacts

Implementation of this alternative will result in short-term impacts due to construction activities. Short-term impacts are expected to include increased traffic congestion, noise, and dust from construction equipment used to drill wells, dig trenches, and install the treatment system. Noise and traffic impacts will be temporary and limited to daylight hours when most people are away from their homes.

6.6 REGULATORY COMPLIANCE

DTSC guidelines for preparation of Remedial Action Plans (Department of Health Services, 1987), call for an evaluation of the consistency of the recommended remedial alternatives with the Health and Safety Code, and for the incorporation in the Remedial Action Plan of any applicable Resource Conservation and Recovery Act (RCRA) or California Code of Regulations (CCR) Title 22 technical and administrative requirements. Furthermore, compliance of the Remedial Action Plan and recommended remedial alternatives with the Comprehensive Emergency Response and Clean-up Liability Act (CERCLA) Section 101(24) requirements must be briefly discussed, as well as development of a health

and safety plan for remediation workers and its consistency with California Occupational Safety and Health Administration (CAL-OSHA) regulations. The following sections address these issues.

6.6.1 Health and Safety Code Section 25356.1(c)

Subdivision (c) of Chapter 6.8, Section 25356.1 of the Health and Safety Code states that Remedial Action Plans for sites on the Hazardous Substance Account or Hazardous Substance Clean-up Fund list must be prepared and approved in a manner consistent with Title 40 of the Code of Federal Regulations (CFR), Section 300.61 et seq (National Oil and Hazardous Substances Pollution Contingency Plan) and amendments thereto. It also states that Remedial Action Plans must consider all of the following:

- The health and safety risks posed by conditions of the site
- The effect of contamination upon present, future, and probably beneficial uses of resources
- The effect of alternative remedial action measures on reasonable availability of groundwater resources for present, future, and probable beneficial uses
- Site-specific characteristics including off-site migration, surface and subsurface soil and hydrogeological conditions
- Cost-effectiveness of alternative remedial action measures
- Potential environmental impacts of alternative remedial action measures.

The Feasibility Study (Dames & Moore, 1991b), Addendum Feasibility Study (Dames & Moore, 1991d), Feasibility Study Supplement (Dames & Moore, 1992c), and this Final Remedial Action Plan have considered all of the above-mentioned factors in detailed analyses of final candidate alternatives and selection of the recommended remedial alternative for each operable unit.

6.6.2 40 CFR 260-270 and CCR Title 22 Applicable Requirements

6.6.2.1 Soil Remediation

A hazardous waste facility is defined as a facility used for the treatment, transfer, storage, disposal, or recycling of hazardous waste (22 CCR 66260.10). Because the site does not meet this definition based on historical facility operations, and because the recommended remedial alternatives do not propose the creation of such a facility, federal and state requirements for a hazardous waste facility are not applicable. However, should hazardous wastes be generated during remediation activities, federal

and state requirements for hazardous waste management as specified for generators and transporters will apply.

The Remedial Action Design Work Plan will describe methods to be used to determine whether soils are classified as hazardous waste. Soil classification will comply with all appropriate regulatory requirements contained in 40 CFR Part 261 and CCR Title 22, Section 66261.

The Remedial Action Design Work Plan will also describe actions to be taken to package, manifest, and transport soils determined to be hazardous waste. These actions will comply with all appropriate regulatory requirements contained in 40 CFR Part 262 and Section 66262 of CCR Title 22.

40 CFR, Part 268 and CCR Title 22 Section 66268 impose land disposal restrictions on hazardous waste. Prior to landfilling hazardous wastes, the regulations specify that wastes must be treated to meet prescribed standards. To determine the applicability of these regulations (including potential treatment standards) to contaminated soil in Operable Units S-1, S-2, and S-3, additional analytical studies will be performed. The results of this work will be submitted to the DTSC as part of the Remedial Action Design Work Plan. If the contaminated soil is subject to the land disposal restrictions, the Remedial Action Design Work Plan will contain a strategy for compliance with these regulations.

6.6.2.2 Groundwater Remediation

Technical and administrative requirements of 40 CFR and Title 22 of CCR which are applicable to recommended remedial alternative for Operable Unit GW-1 include:

- 40 CFR 262.30-34/22 CCR 66262.30-34 (Pre-transport Requirements)
- 40 CFR 268.43/22 CCR 66268.43 (Treatment standards expressed as waste concentration)
- 40 CFR 141.61/22 CCR 64444.5 and 64473 (Maximum contaminant levels for organic contaminants)
- 40 CFR 141.50 (Maximum contaminant level goals for organic contaminants)
- 40 CFR 264.601/22 CCR 264.601 (Environmental Performance Standards)
- 22 CCR 66270.60 and 67450 (Permits by Rule for Transportable Treatment Unit (TTU))
- 22 CCR 66747 67450.11 (List of Approved Treatment Process, Influent Waste Streams).

The recommended remedial alternatives for GW-1 and GW-2 have been developed and selected to be in compliance with all of the regulations listed above. The manner in which the installation, operation, and maintenance of these alternatives will comply with these regulations will be described in the Remedial Action Design Work Plan.

6.6.3 CERCLA Section 101 (24)

Section 101 (24) of CERCLA states that the terms "remedy" or "remedial action" are those actions which are consistent with a permanent remedy taken and which prevent or minimize the release of hazardous substances so that they do not migrate or cause substantial danger to present or future health or welfare or the environment. The use of these terms in this Final Remedial Action Plan is consistent with this definition.

6.6.4 Health and Safety Plan

29 CFR Section 1910.120(b)(4) requires that a site-specific Health and Safety Plan be developed and implemented during construction and maintenance of any remediation at sites containing hazardous substances. The Health and Safety Plan must assign responsibilities, establish personnel protection standards and mandatory safety procedures, and provide for contingencies that may arise while operations are being conducted at the site. To comply with these requirements, a Site Health and Safety Plan will be developed as part of the Remedial Design Work Plan and submitted to the DTSC for review. The main components of the Site Health and Safety Plan will include:

- Names of key personnel and alternates responsible for site safety and health, and appointment of a Site Safety Officer.
- Safety and health risk monitoring during excavation, backfilling, and other construction activities.
- Employee training assignments.
- Medical surveillance requirements.
- Frequency and types of air monitoring, personnel monitoring, and contaminant sampling techniques.
- Site control measures.
- Decontamination measures.

- A contingency plan meeting the requirements of paragraph (1) (1) and (1) (2) of Section 29 CFR 1910.120 for safe and effective responses to emergencies including necessary personal protective equipment.

7.0 IMPLEMENTATION SCHEDULE

7.1 SOIL REMEDIATION

The preliminary implementation schedule for recommended remedial alternatives for Soil Operable Units S-1 through S-5 is presented on Figure 18. The total time (from issuance of the Final Remedial Action Plan to end of construction activities) needed to implement the recommended remedial alternatives for Operable Units S-1, S-2, S-3, and S-5 is estimated to be approximately 22 months. Operable Unit S-4 is not included in the implementation schedule because remedial action for this Operable Unit was completed under an Interim Remedial Measure in 1991.

Remedial activities will start with preparation of a Remedial Action Design Work Plan. Work on the Remedial Action Design Work Plan is scheduled to begin immediately after approval of the Final Remedial Action Plan by DTSC. Preparation of the Remedial Action Design Work Plan is expected to take approximately six months. DTSC review and approval of the Remedial Action Design Work Plan is expected to take approximately two months. Completing design documents, obtaining necessary construction permits, procuring equipment, and mobilizing crews and equipment to the site should take approximately five months after receiving DTSC approval of the Remedial Action Design Work Plan.

Implementation times presented in this Final Remedial Action Plan were estimated based on the assumption that all on-site activities will take place 8 hours per day, 5 days per week. It was also assumed that an average of 1,000 tons of soil can be excavated and loaded onto transport vehicles (railcars and/or trucks) every day. This was based on the assumption that more than one excavation will be underway at a given time, and is subject to modification during remedial design for soil operable units.

In preparing the implementation schedule, it was assumed that no significant delays would result from soil sampling or analysis activities, and that the type and concentration of contaminants encountered will be the same as those discovered during the Remedial Investigation. It should be noted that any of the following events could delay completion of excavation activities:

- The occurrence of excessive dust or vapor emissions or wind speeds above an established threshold, requiring a work stoppage.
- Permitting delays.
- Modification of the staging area locations or the scheduling of trucks or railcars.
- Excavation of a larger volume of soil than is specified in the Feasibility Study Supplement (Dames & Moore, 1992c and 1993).

Because several details will not be known until completion of the Remedial Action Design Work Plan and pre-design activities, a revised schedule will be submitted to the DTSC as new information becomes available.

7.2 GROUNDWATER REMEDIATION

As discussed in Section 2.1.7, clean-up of Groundwater Operable Units GW-1 and GW-2 began in 1993 as Interim Remedial Measures. The Operable Unit GW-1 Interim Remedial Measure is currently operating. An air stripper groundwater treatment unit with an activated carbon vapor recovery system was installed in the southeast area of the site. Two existing on-site wells are being pumped, and contaminated water flows through underground pipes into the treatment unit. The treated groundwater is being discharged to the City sewer.

The GW-2 Interim Remedial Measure is planned for early 1994. A pump will be installed in one of the existing wells in the southern area of the site. Extracted groundwater will be routed through underground piping to the GW-1 treatment unit.

If the groundwater treatment system is effective in meeting the goals of the Interim Remedial Measures, final remedial action for groundwater may consist primarily of installing a separate off-site treatment system at the toe (end) of the GW-1 groundwater plume.

The preliminary implementation schedule for recommended remedial alternatives for Operable Units GW-1 and GW-2 is presented on Figure 18. Total time (from issuance of the Final Remedial Action Plan to the end of construction activities) required to implement groundwater remediation is estimated to be approximately 17 months.

Pre-design activities are scheduled to begin during development of the Remedial Action Design Work Plan, and are expected to take approximately seven and one-half months. Remedial action design for Operable Unit GW-1 will begin upon completion of pre-design activities and approval of the Remedial Action Design Work Plan, and is expected to take about five months. Final system construction is expected to take about five months. Remedial action for Operable Unit GW-2 will proceed as an interim remedial measure, subject to DTSC approval of the Design Work Plan.

Implementation times for remedial action construction were estimated based on an 8-hour work day, 5 days per week. Construction implementation times were estimated using the following assumptions:

- One groundwater monitoring well can be installed in two days.

- 250 feet of utility trench with necessary piping and wiring can be installed per day.
- Five days will be required for treatment system installation.

Some activities listed above may be performed concurrently.

It was assumed that no significant delays will be encountered during construction and that the type and concentration of contaminants encountered will be the same as those discovered during the Remedial Investigation. It should be noted that permitting delays or discovery of unforeseen subsurface obstacles during utility trench construction will delay the completion of construction activities. Because several details will not be known until completion of the Remedial Action Design Work Plan and design documents, a revised schedule will be submitted to DTSC as new information becomes available.

8.0 NON-BINDING PRELIMINARY ALLOCATION OF FINANCIAL RESPONSIBILITY

8.1 INTRODUCTION

Section 25356.1 of the California Health and Safety Code states that Remedial Action Plans shall include "a non-binding preliminary allocation of responsibility among all identifiable Potentially Responsible Parties at a particular site, including those parties which may have been released, or may otherwise be immune from liability pursuant to this chapter or any other." This section of the Final Remedial Action Plan provides a proposed preliminary allocation of responsibility.

California Health and Safety Code Section 25323.5 defines responsible party to mean those persons described in Section 107(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). According to CERCLA, the following parties are potentially liable for the costs of remedial actions at hazardous waste sites:

1. The owner and operator of a facility
2. Any party who, at the time of disposal of any hazardous substance, owned or operated any facility at which such hazardous substances are disposed
3. Any party who by contract, agreement, or other manner arranged for disposal or treatment of hazardous substances owned or possessed by such party or by any other party or entity, at any facility owned by another party or entity and containing such hazardous substances
4. Any party who accepts or accepted any hazardous substances for transport or disposal; treatment facilities or sites selected by such party from which there is a release of a hazardous substance or a threatened release which causes response costs to be incurred.

After the DTSC issues the Final Remedial Action Plan pursuant to Section 25356.1(d), any Potentially Responsible Parties with aggregate alleged liability in excess of 50 percent of the costs of the removal and remedial action may convene an arbitration proceeding pursuant to Section 25356.3 by agreeing to submit to binding arbitration. If an arbitration panel is convened, any other Potentially Responsible Parties may also elect to submit to binding arbitration.

Section 25256.3(c) of the Health of Safety Code states that the arbitration panel is to apportion liability based on the following factors:

1. The amount of hazardous substance for which each party may be responsible
2. The degree of toxicity of the hazardous substance

3. The degree of involvement of the Potentially Responsible Parties in the generation, transportation, treatment, or disposal of the hazardous substance
4. The degree of care exercised by the Potentially Responsible Parties, with respect to the hazardous substances, taking into account the characteristics of the substance
5. The degree of cooperation by the Potentially Responsible Parties with federal, state, and local officials to prevent harm to human health and the environment.

8.2 IDENTIFICATION OF POTENTIALLY RESPONSIBLE PARTIES

Historical information indicates that the Western Pacific Railroad operated a railroad maintenance yard at the site commencing in 1910. From 1910 through the mid-1950s, the site was used primarily for maintaining and rebuilding steam locomotives, boilers, refurbishing rail cars, and assembling trains. During the mid-1950s, diesel engine repair and maintenance began. In 1982 UPRR acquired WPRR. UPRR discontinued railroad maintenance operations at the site in 1983, and remaining railroad maintenance buildings and structures on the site were demolished by UPRR in 1985 and 1986.

8.3 NON-BINDING PRELIMINARY ALLOCATION

Given that during the approximately 70 to 80 year operating history of the Sacramento Yard, WPRR owned and operated the facility for a total of at least 72 years, it is likely that WPRR generated, transported, treated and/or disposed of as much as 99 percent of the hazardous substances which are present at the site. Since UPRR owned and operated the facility for only one year, it is probable that UPRR's contribution of hazardous substances is minimal. However, WPRR as a corporate entity ceased to exist when purchased by UPRR. Therefore, UPRR is responsible for all hazardous substances at the site.

This allocation of responsibility is non-binding and preliminary. Parties assigned responsibility have various options for challenging the allocation. Based on the foregoing information, UPRR is allocated 100 percent of the financial responsibility for the hazardous substances which are at the site.

9.0 OPERATION AND MAINTENANCE REQUIREMENTS

9.1 SOIL REMEDIATION

Recommended remedial alternatives for each of the soil Operable Units in the inactive portion of the site (Operable Units S-1, S-2, and S-3) consist of excavation and off-site disposal of soil contaminated above the DTSC-approved clean-up levels. After final remedial action is complete, long-term maintenance of the site will not be needed. Therefore, post-construction activities will be associated only with inspection and repair of the existing fence around the site, as necessary.

The recommended remedial alternative for Operable Unit S-4, which has already been implemented, involved off-site disposal of soils with contaminant concentrations exceeding the Remedial Action Objectives and does not require any maintenance or monitoring following remediation. If applicable, an operation and maintenance plan will be prepared and implemented for in-situ remediation of diesel hydrocarbon impacts soil in Operable Unit S-5.

9.2 GROUNDWATER REMEDIATION

Recommended remedial alternatives for GW-1 and GW-2 include groundwater extraction, treatment and discharge. Groundwater monitoring would be conducted during the remedial action (3 to 30 years, depending upon several factors). Because the recommended remedial alternatives for Operable Units GW-1 and GW-2 are the same (Alternative 4), operation and maintenance requirements will be essentially the same. Operation and maintenance for the groundwater operable units are therefore discussed together. Specific operation and maintenance requirements for the system or systems used to remediate Operable Units GW-1 and GW-2 will depend on the treatment technology and pumping rates selected. General operation and maintenance needs are discussed below.

If necessary, a long-term groundwater monitoring and maintenance plan will be prepared for groundwater in Operable Unit S-5. The monitoring and maintenance plan will identify specific monitoring parameters and frequency. Monitoring and maintenance reports will be submitted to the DTSC annually.

9.2.1 Post-Construction Activities

System Operation

Each well will have a submersible electric pump to extract groundwater. Controls will be used to monitor the operation of each pump and of the treatment system. Controls will include safeguards to

prevent discharge of untreated water to the sewer. In addition, any loss in pressure as a result of a leak of underground piping will automatically cause the pump to shut off. If required to preserve storm drain capacity during storm events, the treatment system will be designed to shut down automatically during rain storms.

System Maintenance

Groundwater treatment systems would be operated 24 hours a day. After the initial start-up period for an air stripper, maintenance would be minimal and will include sampling of the treated effluent and periodic shutdown and cleaning of the air stripper. Maintenance of a UV-oxidation system (if selected) would include periodic cleaning and/or replacement of ultraviolet lights when they burn out. Maintenance of a granular activated carbon system would be greater than for either of the other two systems and would include replacement of used carbon on a regular basis. Carbon is typically contained in large vessels. Each carbon vessel would be replaced periodically, depending on how quickly the adsorptive capacity of the carbon is used up. Major factors influencing carbon life are groundwater contaminant concentrations and total flow of contaminated water into the treatment unit.

Inspection

A **Site Supervisor** will be designated within 30 days of DTSC approval of the Remedial Action Design Work Plan. A letter identifying the designated Site Supervisor and specifying the rationale for choosing him or her will be sent to the DTSC. This selection will be subject to DTSC review and approval.

The Site Supervisor's responsibilities will include immediately reporting to DTSC unusual operating conditions, such as high or low pressure, burnt-out UV light bulbs, etc. The Site Supervisor will also be responsible for making sure that the treatment system is checked every time samples of treated effluent are collected. He/she will be responsible for the preparation and submittal of an annual inspection report to the DTSC. This report will detail the results of inspections, unusual conditions discovered, and repairs undertaken (including their location and extent).

Replacement

Although it is assumed that extraction pumps may require periodic replacement, it is also assumed that whatever treatment system is used, its components will require minimal replacement. Replacement of one or more extraction pumps is expected to occur every 5 to 10 years.

Monitoring

Groundwater Alternative 4 provides for two kinds of monitoring during groundwater clean-up:

- Sampling and testing the quality of groundwater using monitoring wells.
- Sampling and testing the quality of groundwater before it enters the treatment system, and treated effluent before it is discharged into the sewer.

On-going groundwater quality monitoring will include collecting samples from approximately 30 monitoring wells located both on- and off-site. Representative groundwater samples will be submitted to an analytical laboratory and tested to assess levels of the contaminants of concern (nickel, volatile organic compounds, and volatile aromatic compounds). Groundwater monitoring is expected to continue for several years (or until groundwater clean-up is completed).

To monitor the performance of the treatment system, samples of treated effluent will be collected from the treatment unit and tested. Treated effluent will be submitted to an analytical laboratory and tested to measure levels of the contaminants of concern (nickel, volatile organic compounds, and volatile aromatic compounds). The frequency of effluent testing will depend on the type of treatment used. If air stripping or UV-oxidation is selected, treated effluent would be tested every week for the first three months, then every month for the next three months, and finally, every three months for the next several years, depending on the number of wells and total flow rate into the treatment unit.

If a granular activated carbon system is used, more frequent testing may be required because the efficiency of carbon decreases over time. Testing will occur frequently enough to assess when the carbon canisters need to be changed. Treated effluent testing may be done as often as every four days (for flows of 200 gallons per minute) or every 15 days (for flows of 20 gallons per minute) if granular activated carbon is used.

9.2.2 Cost of Post-Construction Activities

The cost of operation and maintenance of groundwater treatment depends on the type of system used, the number of extraction wells, and the total flow into the treatment unit. The yearly cost of system operation and maintenance and groundwater monitoring for both operable units is expected to range from approximately \$77,000 to \$96,000.

9.2.3 Performance Assurance

A groundwater monitoring report and a report describing system operation and maintenance, including the results of analysis of treated effluent, will be submitted on a yearly basis to the DTSC. These reports will demonstrate that UPRR has conducted all post-construction activities specified in this Final Remedial Action Plan.

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11.0 GLOSSARY

11.1 INTRODUCTION

The purpose of the glossary is to provide definitions for words which may be unfamiliar to the reader. Some of the words used in this Draft Final Remedial Action Plan have specific meaning for certain technical specialists which may not be apparent to people unfamiliar with the specialty. In this glossary, words having special technical meaning are defined using the technical meaning. The technical specialty with which the word is associated is included in brackets ([]) at the beginning of the definition. Site-specific references are included where appropriate.

11.2 DEFINITIONS

Abandon(ment) [GEOLOGY, ENGINEERING] — Refers to the practice of closing or sealing a well, mine shaft, or other underground feature such as piping. Well abandonment is performed using industry-accepted and/or agency-required procedures and usually includes filling the well casing with cement grout.

Adsorbed [CHEMISTRY] — See **adsorption**.

Adsorption [CHEMISTRY] — The process through which molecules (or small particles) of one substance become attached to particles of another substance. Metals dissolved in groundwater can become **adsorbed** to clay particles. Adsorption can also be used to remove organic contaminants from air or water using activated carbon or other similar material.

Advection [HYDROGEOLOGY] — The process through which contaminants move in groundwater in the direction of groundwater flow.

Air Stripper [ENGINEERING] — Equipment designed to remove groundwater contaminants by enhancing the circulation of an air flow through water. **Volatile** compounds turn into vapor form, and are removed from groundwater in the form of contaminated air. If necessary, the contaminated air can be treated to remove or destroy the contaminants before release to the atmosphere.

Ambient — Pertaining to the natural (undisturbed) environment. In site-specific terms, ambient air quality refers to normal air quality in the site vicinity, excluding any impacts to air quality which may be due to conditions at the site. Ambient air quality may be poor in some areas due to environmental pollutants from a variety of sources.

Analysis — A method of determining a scientific fact. Depending on the goal, analysis may involve the use of mathematical calculations, laboratory testing, or the application of critical thinking skills and specialized knowledge.

Applicable or Relevant and Appropriate Requirements (ARARs) — Federal, state, or local regulatory standards, requirements, criteria, or limitations that are determined legally to be applicable or relevant and appropriate. Under the Comprehensive Environmental Recovery, Compensation, and Liability

Act, remedial action at Superfund sites must comply with the ARARs which have been identified for each site.

Assemblage [GEOLOGY] — A readily identifiable natural grouping of geologic features, such as sedimentary layers, which are correlatable from one area to another.

Backfill(ing) [ENGINEERING, GEOLOGY] — Material used to fill a man-made hole or trench (such as soil, gravel, concrete); the act of placing backfill.

Background Concentration [GEOLOGY] — The concentration of a chemical in areas surrounding the site which have presumably not been affected by site activities. Many toxic chemicals are found naturally in soil and water. The types and concentrations of chemicals normally found in soil and water varies regionally. In some areas, normal background concentrations of chemicals in soil or water can pose a health risk.

Ballast [ENGINEERING] — Coarse gravel or crushed rock laid down to form a structural base for railroad tracks.

Basin [GEOLOGY, HYDROLOGY] — Topographic (surface) feature or subsurface structure that is capable of collecting, storing, and discharging water. A lake is an example of a basin. A groundwater basin is a contiguous underground feature of soil, sediments, and/or fractured rock where groundwater collects. The Central Valley is one groundwater basin composed of thick sediment deposits.

Bioavailable [TOXICOLOGY] — The degree to which a chemical is capable of being effectively absorbed by human or animal organ systems, once taken into the body through ingestion, inhalation, or other pathways. Bioavailability of a chemical is an important part of determining its toxicity and health risks associated with exposure to it.

Biological Receptors [TOXICOLOGY] — Organisms (such as people, animals and plants) that can be affected by a substance or material if exposed by breathing, swallowing, and/or skin contact.

Bunker Fuel — A heavy residual petroleum oil used for fuel by ships, industry, and large-scale heating and power production installations.

By-Product — Something produced in the making of something else.

California Environmental Quality Act (CEQA) — A group of state regulations and procedures which agencies and developers must use to assess the environmental impacts of a proposed land development project or land use.

California Natural Diversity Data Base [BIOLOGY, NATURAL SCIENCE] — A computerized data base of rare, threatened or endangered species together with the location of potential and known habitat and last known sightings. The Natural Diversity Data Base is maintained by the California Department of Fish and Game.

Capital Costs [ECONOMICS, BUSINESS] — Costs for equipment, or improvement or additions to a property or facility.

Carbon Adsorption [ENGINEERING, CHEMISTRY] — A physical contaminant removal process using granular activated carbon which, because of its large surface area, has the ability to trap and remove organic contaminants from air or water.

Carcinogenic [TOXICOLOGY] — cancer-causing

Chemical Analysis [CHEMISTRY] — Testing to evaluate the presence and concentration of chemical substances. Chemical analysis usually refers to precise special tests performed in a laboratory, but some test kits are available which allow less precise results outside of a laboratory setting.

Claypan [GEOLOGY, ENGINEERING] — A layer of compact, very stiff to hard, non-cemented clay. Claypan usually impedes the flow of water.

Clean Fill — A construction term referring to clean material (usually soil and/or gravel) used to fill an excavation or depression, or raise ground surface elevation on a site.

Clean-up — Action taken to deal with a release or threatened release of hazardous substances that could affect human health and/or the environment.

Clear and Grub — A construction term referring to removal of unwanted trees, shrubs, weeds, and debris or trash from a property.

Climatology — The study of the regional variation of weather patterns over many years.

Coliform Bacteria [MICROBIOLOGY] — Type of bacteria often found in human and animal feces. May cause illness if ingested. Possible sources of coliform bacteria in groundwater include livestock feed lots, inadequate septic systems, and sewer leaks.

Compliance (Regulatory Compliance) — The act of obeying a regulation or law.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) — Provides for liability, compensation, clean-up, and emergency response for hazardous substances released into the environment and clean-up of inactive hazardous waste disposal sites.

Conservative Assumptions — Conservative assumptions are assumptions that tend to produce a worst-case estimate. The Health Risk Assessment methodology developed by the United States EPA uses conservative assumptions to estimate human health risks posed by environmental contaminants. The term may also be applied to cost estimates or other technical estimates (such as contaminant transport rates).

Contaminant Mobility [HYDROGEOLOGY, HYDROLOGY] — the ability of a contaminant to move through air, soil, surface water, or groundwater.

Contaminant — A substance which is present at a concentration greater than normal (background concentration) in air, soil, or water; a pollutant.

Criterion — A standard, rule, or test, forming the basis for a decision or judgment. The plural is criteria.

Degreaser — A solvent used to remove grease from machinery or equipment.

Demography — The statistical study of human populations.

Dermal Contact [TOXICOLOGY] — Touching or allowing the skin to come into contact with contaminated material (such as soil and/or groundwater). A type of exposure pathway.

Dilution - [CHEMISTRY] The process of reducing the concentration of a solution. Dilution of contaminated groundwater occurs naturally as a contaminant plume migrates into uncontaminated groundwater.

Dispersion [CHEMISTRY] — The process of breaking up or scattering. Dispersion of soil contaminants can occur due to small particles of contaminated material being carried by wind.

Dissolution Kinetics [CHEMISTRY] — The chemical and physical circumstances under which chemicals become dissolved. A study of dissolution kinetics would include identifying potential solvents and running a series of laboratory tests to assess how well the target chemicals dissolve in them. Temperature and pH can also have an effect on how soluble a chemical will be in a given solvent.

Downgradient [GEOLOGY, HYDROLOGY] — The direction in which the elevation of the water table declines relative to another location. Groundwater flows in the downgradient direction similar to the way surface water flows downhill.

Downwind — The direction in which air travels relative to another location. If a person stands downwind of an odor source, he or she will likely be able to detect the odor.

Effluent [ENGINEERING] — An outflow or discharge of wastewater. Treated effluent is wastewater that has been treated to achieve a water quality standard. Water quality standards for treated effluent vary, depending on the ultimate fate of the effluent.

Electromagnetic Survey [GEOLOGY, ENGINEERING] — A field investigation technique using an instrument which measures magnetic fields in order to locate or detect the presence of underground metallic objects, such as piping, tanks, or drums.

Electroplating [CHEMISTRY] — A process through which a dissolved metal is removed from a solution by electric current and deposited on the article to be plated.

Environmental Impacts — Effects on the environment. These impacts can be either negative (adverse) or positive (beneficial).

Estimated Lifetime Cancer Risk [TOXICOLOGY] — The sum of all calculated cancer risks a given receptor will experience in a lifetime. Used to estimate the likelihood that cancer will result from known exposures. Estimated Lifetime Cancer Risk is usually presented as a ratio, such as one in one million. This means that for every one million receptors experiencing the same exposure during their lifetime, it is estimated that one of them will contract cancer caused by that exposure.

Exposure Pathways [TOXICOLOGY] — The potential means of exposure to contaminants. These may include ingestion, inhalation, or direct contact with contaminants.

Exposure Scenarios [TOXICOLOGY] — The activities or circumstances which may cause receptors to be exposed to contaminants.

Extraction Well [GEOLOGY, ENGINEERING] — A groundwater well used to remove or extract groundwater from the subsurface. Often, the water is extracted by a pump placed in the well.

Feasibility Study — An engineering study used to identify and evaluate alternative ways of cleaning up contaminants or reducing significant health risks at a site. Alternatives are analyzed based on a variety of criteria, and ranked based on their ability to achieve the clean-up goals in a cost-effective manner. The selected alternative is the alternative that offers the most benefits, while incurring the fewest adverse impacts.

Final Candidate Alternatives — Under CERCLA Feasibility Study guidance, final candidate alternatives are the ones that survived screening and were selected for detailed analysis in the Feasibility Study.

Flood Plain Deposits [GEOLOGY] — Fine-grained sediments (clays, silts, and fine sands) deposited adjacent to a river channel when a river overflows its banks during a flood stage.

Flora [BIOLOGY] — Plants.

Food Chain [BIOLOGY] — A succession of organisms in a community that make up a feeding chain in which food energy is transferred from one organism to another as each consumes a lower member and in turn is preyed upon by a higher member.

Forbes [BIOLOGY] — Herbaceous plants other than grass. Usually found in fields or meadows.

Geophysical Investigation [GEOLOGY] — Subsurface exploration (either from the surface or in a borehole) that relies upon the relative physical properties of rock and soil to assess subsurface conditions. Ground-penetrating radar is one surface geophysical method that uses sound waves to locate variations in subsurface features.

Granular Activated Carbon [ENGINEERING] — A form of carbon used to remove contaminants from air or water. The contaminants adsorb to the carbon as the contaminated stream passes through it.

Groundwater Basin — see Basin

Groundwater Modeling [HYDROLOGY] — Mathematical methods of estimating flow characteristics of groundwater. Many groundwater models are computer based and allow the user to use site-specific geological information to predict groundwater movement and contaminant transport over several years.

Groundwater Monitoring [GEOLOGY] — Program designed to measure groundwater quality in monitoring wells and to track contaminant plumes as they move through groundwater. Samples of groundwater are taken from the wells and laboratory tests are used to determine the level of contaminants present.

Groundwater Gradient [HYDROGEOLOGY, HYDROLOGY] — The rate of change of water table elevation per unit distance. The gradient indicates both the direction of groundwater flow and the steepness of the water table surface.

Habitat [BIOLOGY] — The environment in which an organism or biological population usually lives or breeds.

Hardpan [GEOLOGY] — A layer of hard, cemented subsoil or clay. Hardpan often exhibits relatively low permeability to water.

Hazard Index [TOXICOLOGY] — A ratio comparing the estimated exposure to a non-cancer-causing contaminant with acceptable exposure guidelines and/or standards.

Hazard Quotient [TOXICOLOGY] — The sum of one or more **Hazard Indices** which produce the same effect (such as liver damage). If the Hazard Index for a given health effect is greater than 1, the effect of the exposure is considered to be significant.

Hazardous Substance — Any material or waste that may pose a substantial present or potential threat to human health and/or the environment.

Hazardous Substances Release Sites — Sites where hazardous materials have been released into the environment due to the activities of man.

Health Risk Assessment [TOXICOLOGY] — An evaluation of the risk posed by contaminants to the public. The results of this evaluation are used to assess the need for and/or type of clean-up which may be needed at a hazardous substance release site.

Hot Spots — Areas where contaminant concentrations are unusually high compared to the rest of the site.

Hydrogeology — The study of the interrelationship of geologic materials and processes with water.

In-Situ [GEOLOGY] - Refers to actions taken without removing the matter of interest (such as soil or groundwater) from its place.

In-Situ Groundwater Sampling [GEOLOGY] — A method of obtaining a groundwater sample without using a well. Typically consists of driving or pushing a sampling device into soil below the groundwater table. Groundwater flows into the sampling device, and can then be removed for laboratory testing. Often used to assess the extent of a groundwater contaminant plume, but less suitable for long-term groundwater monitoring because of high cost.

Infiltration [HYDROGEOLOGY] — The process through which liquids permeate soil by passing through the spaces between soil particles.

Ingest [TOXICOLOGY] — To take in by swallowing.

Insoluble [CHEMISTRY] — Not capable of becoming dissolved in. For example, oil is insoluble in water, but some oils contain other chemicals which are soluble in water.

Interim Remedial Measures — Clean-up actions taken to immediately reduce the potential for exposure to contaminants. Typically interim remedial measures are short-term remedies and/or small-scale clean-up measures.

Lagging Material — A type of pipe insulation.

Land Use Covenant — A document which provides information about residual contamination at a site. The document is an agreement which would be entered into by DTSC and UPRR. The agreement would have provisions to notice the deed to the property, to ensure monitoring and maintenance is conducted as required, and restrict land use as appropriate.

Leachability [GEOLOGY, CHEMISTRY] — The ability of a contaminant to dissolve in water (or other liquid), thereby enhancing the mobility of the contaminant in soil.

Leachate [GEOLOGY, CHEMISTRY] — Contaminated liquid resulting from contact of water (or other solvent) with soluble contaminants.

Lye [CHEMISTRY] — A caustic solution of potassium hydroxide or sodium hydroxide used in industry.

Maximum Contaminant Level(s), or MCL - Maximum allowable concentration of a chemical in drinking water. MCLs are established by either the United States Environmental Protection Agency or the California Environmental Protection Agency. Primary MCLs are intended to be protective of human health, whereas secondary MCLs are developed in consideration of other criteria such as taste or odor.

Mean Sea Level — The elevation of the ocean's surface, halfway between high and low tide. The elevation of mean sea level is often used as a reference point for surveys of elevation.

Medical Surveillance — A program whereby hazardous waste workers are periodically examined by a doctor to see if their health is being (or is likely to be) affected by their work environment. A medical surveillance program may also include periodic blood and urine tests, x-rays, and lung-function tests, depending on the hazardous substances to which the worker is exposed.

Medium — An entity in which objects exist and events take place. The plural form of the word is **media**. Relevant examples of media are air, water, soil, and groundwater.

Meteorological Station — A temporary or permanent installation where instruments are used to measure climate data such as temperature, wind speed and direction, relative humidity, and rainfall.

Micrograms per deciliter [CHEMISTRY] — A unit of measure for concentration in a liquid. If a child has a lead concentration of 10 micrograms per deciliter in his or her blood, it means that for every deciliter (1/10th of a liter) of blood, 10 micrograms (10 one-millionths of a gram) of lead were detected.

Mobility [GEOLOGY, HYDROGEOLOGY] — The ability of contaminants to move. Mobility depends on the contaminant, the **medium** in which it is found, and many other factors.

Modified Proctor Test — A standard test used to measure the maximum density that can be achieved during compaction of soil. This test is used to assess whether soil is suitable for use as engineered fill and the best soil moisture content to use during fill placement.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP) — Federal regulations governing procedures for preparing for, and responding to, releases of hazardous substances into the environment.

Non-Binding Preliminary Allocation of Financial Responsibility — An agreement (non-binding) naming the party who will pay for remedial action at a hazardous substance release site.

Occupational Safety and Health Act — Federal regulations contained in 29 CFR (Code of Federal Regulations) for general industry (Part 1910) and construction activities (Part 1926) that includes general health and safety standards for workers' protection.

Operable Unit — For a Feasibility Study, an operable unit is a type, volume, or area of contaminated medium which, because of its unique chemical and/or physical characteristics, can be addressed most efficiently and economically as a unit.

Operation and Maintenance — Activities conducted after implementation of a recommended remedial alternative to ensure that it is functioning properly.

Overpack Container — Typically, a polyethylene container which is large enough to contain a 55-gallon drum. It is designed to withstand chemical degradation and is used to package drums which may potentially leak or are leaking so that they can be shipped safely with minimal risk of a release due to handling and transport.

Parts per million — A unit of measurement for concentrations. One part by weight of chemical contained in one million parts of material, for example soil.

Perched Groundwater Table [GEOLOGY] — A localized phenomenon where groundwater is held above the main groundwater table, usually by a low-permeability geologic formation (such as clay or hardpan).

Permeability [ENGINEERING, GEOLOGY] — Ability of material to permit passage of liquid through itself. In general, gravels and sands are very permeable; whereas silts and clays often exhibit low permeability.

Personal Protective Equipment — Special clothing and equipment used to minimize worker contact with contaminated materials. Selection of personal protective equipment depends on the type of contaminants, their form, and other site-specific factors, and may include air-purifying respirators, plastic coveralls, boots, and/or gloves.

Petroleum Hydrocarbons [CHEMISTRY] — Organic compounds commonly found in petroleum products that contain carbon and hydrogen only.

Plume [HYDROGEOLOGY, ENGINEERING] — A contaminated portion of air or groundwater.

Polycyclic Aromatic Hydrocarbons [CHEMISTRY] — Hydrocarbon compounds consisting of two or more fused benzene rings containing only hydrogen and carbon atoms. A common minor component of diesel fuel and asphalt.

Potentially Responsible Party — Any individual or company (including owners, operators, transporters, or generators of hazardous substances) potentially responsible for, or contributing to, contamination at a hazardous substances release site.

Pre-treatment System — A treatment system designed to remove gross contamination or compounds that might interfere with treatment. Pre-treatment is sometimes used to increase the efficiency of the following treatment steps.

Priority Pollutant — One of several chemicals judged by the U.S. EPA to be of concern to human health or the environment.

Range [ENGINEERING] — Any series of townships of the U.S. Public Land Survey System aligned north and south and numbered consecutively east or west from a standard regional baseline.

Real-Time Direct-Reading Instruments — Monitoring instruments capable of providing specific data essentially instantaneously. Contrast to other instruments that collect a sample which must be then sent to a laboratory for analysis, or instruments that indicate whether a constituent is present, but not the concentration.

Recommended Remedial Alternative — An alternative for clean-up of contamination that has been recommended based on several criteria considered during a feasibility study evaluation.

Remedial Investigation — A study including collection and analysis of soil, groundwater and air samples to assess the nature and extent of contamination at a site.

Remedial Action Objectives — Medium- and contaminant-specific clean-up goals for protecting human health and the environment.

Remedial Alternative — One or more remedial technologies assembled into one alternative clean-up plan. Each alternative should include technologies which, combined, will address all contaminants in the medium of interest (soil or groundwater, for this site).

Remedial Technologies — Methods used to clean up environmental contamination. Some examples of remedial technologies are chemical or physical treatment, and containment.

Remedial Action Plan — Document that provides information regarding contaminants present at a hazardous substances release site and the proposed clean-up strategies.

Remedial Action Design Work Plan — Provides detailed design information and engineering specifications about the recommended remedial alternatives for clean-up of a hazardous substances release site.

Remediation — Correction or clean-up of environmental contamination.

Resource Conservation and Recovery Act (RCRA) — Federal regulations governing procedures for treating, transporting, storing, and disposing of hazardous substances.

Rinsate — Liquid (usually water) left after washing or decontaminating an object.

Riparian [BIOLOGY] — Living or located on a riverbank.

Risk Characterization [TOXICOLOGY] — Mathematical estimates of health risks associated with exposure to environmental contaminants. Risk Characterization is part of a Baseline Health Risk Assessment.

Section [ENGINEERING] — The unit of survey of the U.S. Public Land Survey System, representing a piece of land that is 1 mile by 1 mile. There are 36 Sections per Township.

Sediment [GEOLOGY, ENGINEERING] — Solid material, mineral or organic, that is in suspension, is being transported, or has been moved from its origin by air, water, or ice, and has come to rest on the earth's surface.

Site Health and Safety Plan — A plan defining the procedures and equipment required to protect the health and safety of remediation workers during clean-up activities.

Site Supervisor — The person designated in the Site Health and Safety Plan who is responsible for making sure that all site visitors and workers follow the Health and Safety Plan rules, or a person designated responsible for operation and maintenance of remediation systems.

Slag [MINING, ENGINEERING] — The vitreous (glassy metallic) mass left as a residue of metallic ore smelting.

Soil Vapor Study [GEOLOGY, ENGINEERING] — An investigative method used to assess the concentration of organic contaminants (in vapor form) within soil pores. Soil gas surveys typically use soil gas probes which are inserted below ground. Soil gas flows into the probe, and is collected and analyzed for contaminants of concern. Soil vapors may come from volatile liquid contaminants in soil.

Solvent [CHEMISTRY] — A liquid capable of dissolving other substances. Common household organic solvents include paint thinner, spot remover, paint remover, and nail polish remover. Many organic solvents are potentially toxic. Water is also a solvent for some compounds.

Spent Carbon [ENGINEERING] — Activated carbon which is no longer effective in adsorbing contaminants. Typically, this occurs when contaminants fill pore space within a carbon bed and there is no room for additional contaminants to be adsorbed to carbon surfaces. Spent carbon may be recycled or disposed.

Stoddard Solvent — A type of petroleum product with a standard chemical formulation. Often used as a solvent and in dry cleaning.

Surface Impoundment — A man-made pond designed to contain liquids. Unlined surface impoundments are a potential source of groundwater contamination if used to store liquids containing hazardous substances.

Thermal Oxidation [ENGINEERING] — A process that removes or destroys organic contaminants using heat treatment.

Total Present Worth Cost — The net present worth of a series of cash disbursements over a given time, with a given interest rate. Expressed as an equivalent sum of money in present day dollars. Conceptually, the total present worth cost is the amount of money that must be deposited in a savings account today, if the money and the interest it earns are to be used to pay a series of debts whose amounts and future due dates are known.

Total Dissolved Solids [CHEMISTRY] — The concentration of minerals and other substances dissolved in water. A common indicator of water quality.

Township [ENGINEERING] — The unit of survey of the U.S. Public Land Survey System, representing a piece of land that is approximately 6 miles by 6 miles with a specific north/south and east/west boundary.

Toxicity — The degree to which a chemical compound can cause illness in humans or animals.

Track Ballast — see **Ballast**.

Trespasser — An individual who gains unauthorized entry to a property.

Upwind — The direction from which air travels. If a person stands upwind of an odor source, he or she will probably not detect the odor.

UV-oxidation [ENGINEERING] — A process using the properties of ultraviolet light to chemically alter or destroy organic contaminants in groundwater.

Volatile Aromatic Compounds [CHEMISTRY] — A type of volatile organic compound containing one or more benzene rings in its molecular structure.

Volatile Organic Compounds [CHEMISTRY] — Any of a group of organic compounds that can volatilize (vaporize) at normal temperatures and pressures.

Volatilization [CHEMISTRY] — The process of turning into a vapor. Water volatilizes when it evaporates.

Waste Characterization — Laboratory tests or other analyses used to assess the chemical composition of waste materials.

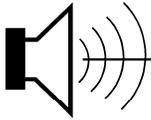
Water Table [GEOLOGY] — The surface of a groundwater body. Water tables are often reported in terms of depth below the ground surface or elevation with respect to Mean Sea Level.

Water-Bearing Zone [GEOLOGY] — Subsurface zone made up of gravel, sand, silt or porous rock that contains or yields groundwater.

Weedy Species [BIOLOGY] — Highly competitive plants that tend to choke out other species, and are among the first to colonize cleared land.

Well Casing [GEOLOGY, ENGINEERING] — Slotted pipe casing (usually plastic or stainless steel) installed in a soil boring to make a groundwater well. Groundwater flows through the slots into the casing, where it can then be sampled or pumped to the surface.

APPENDIX I



January 19, 2010

Mr. Rod Stinson
Raney Planning & Management, Inc.
1501 Sports Drive
Sacramento, California 95834

Transmitted via email: rods@raneymanagement.com

Subject: Curtis Park Village noise impacts at upper floor residential units.

Dear Rod:

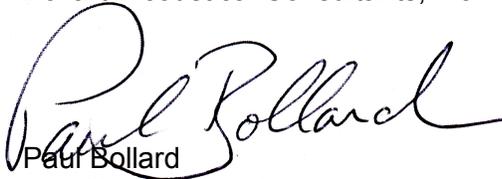
Pursuant to your request, BAC has prepared this memo to discuss whether impacts at four to four-and-a-half-floor residential units within the Curtis Park Village Project would be more severe than impacts at three-floor residential units.

Our review of the project files indicates that there would be no difference in noise attenuation requirements between the higher density (4 to 4.5 floors) and plan density (3 floors) residential uses beyond what is already identified in the DEIR and noise study for the project. The Curtis Park Village interior noise mitigation requirements are more stringent than normal due to the proximity of the rail activity and the recommended higher window STC ratings would apply to the multi-family housing project regardless of the height of those structures. In addition, the recommended noise barriers are only intended to shield ground floor outdoor activity areas, so the height of the residential structures would not affect the noise barrier recommendations.

I hope that this memo meets your needs at this time. Please contact me at (916) 663-0500 or paulb@bacnoise.com if you have any comments or questions regarding this brief memo.

Sincerely,

Bollard Acoustical Consultants, Inc.


Paul Bollard
President

APPENDIX J

5.2

TRANSPORTATION AND CIRCULATION

INTRODUCTION

This section summarizes the effects on the near-term and future (2027) transportation and circulation system resulting from vehicle trips associated with the proposed development of the project site. On-site alternatives to the Proposed Project were analyzed in the same detail as the Proposed Project so any alternative could be selected without additional study.

This transportation discussion, prepared by Dowling Associates, Inc., addresses impacts identified in the analysis.

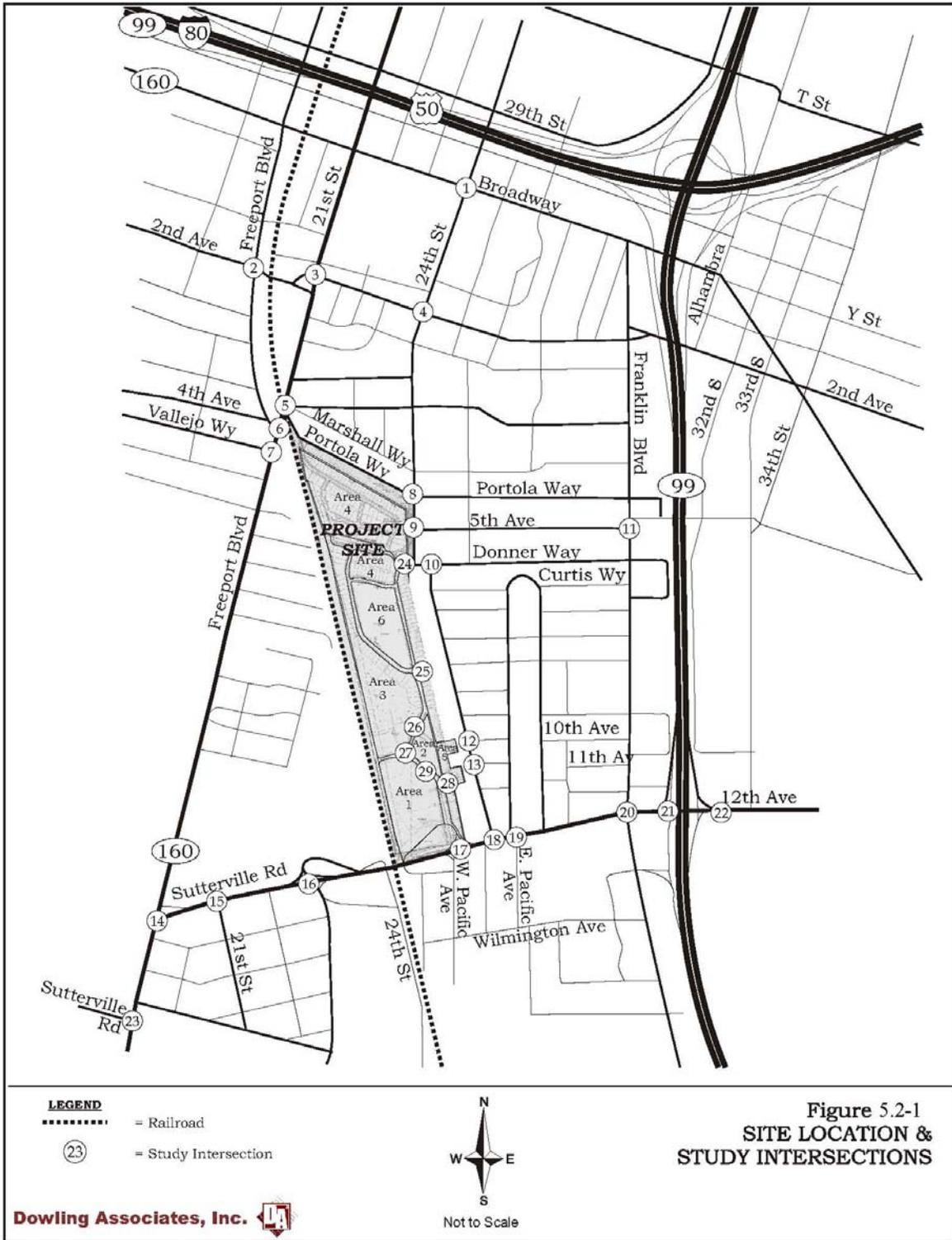
PROJECT DESCRIPTION

The proposed Curtis Park Village project consists of a mixed-use commercial and residential infill development with 183 single family residential units, an 80-unit senior independent living apartment, 212 multi-family housing units, 214,000 square feet of retail commercial area, two restaurants and one dinner theater on a 72-acre site. The site is bounded on the north by Portola Way, on the south by Sutterville Road, and on the west by the Western Pacific railway (Figure 5.2-1). Sacramento City College is located to the west of the railroad tracks. The traffic analysis assumes build-out of 216 single family residential units, 170,600 square feet of retail commercial area, two restaurants, one dinner theater, a health spa, and a hotel. The assumed land uses are estimated to generate higher number of vehicle trips, thereby provided more conservative approach in determining traffic impact¹.

The Proposed Project site has been split into six subareas. Area 1, located in the southernmost portion of the site, would contain a 53,500 square-foot grocery store, a 25,000 square-foot bookstore, and 76,300 square feet of other retail commercial space. Area 2, located between Area 1 and Area 3 to the east of the new access road, would consist of 15,800 square feet of retail commercial space. Area 3, located north of Area 1 and Area 2, would consist of ten single family units, two 6,500 square-foot restaurants, one 42,435 square-foot dinner theater, one 85,000 square-foot health spa, and a 150-room hotel. Area 4, concentrated mainly on the north portion of the site but also covering areas around the park/open space and to the east of the new access road, would contain 146 single family units (Single Family Area) of which 39 would have vehicle access only via a new alley way between the new access road and 24th Street. Area 5, located east and north of Area 2, would contain 60 single-family units, six of which would have vehicle access only via 24th Street and the remaining via the alley way. Area 6, located in the center of the site, would be 7.2 acres of park/open space area (Park/Open Space).

¹ See Dowling Associates Memorandum dated December 9, 2008 in Appendix D for trip generation comparison of the different land uses.

**Figure 5.2-1
 Study Intersections and Site Location**



The main access to the site would be provided from Sutterville Road at a new signalized intersection between West Pacific Avenue and Jefferey Avenue. A second access to the south would be located at the southwest corner of the site, through the Sutterville Road Underpass. A northern access would be located at the northwest corner of the site, providing a connection to Portola Way. Access to the east would be provided from the new access road at Donner Way.

ENVIRONMENTAL SETTING

The existing roadway, transit, bicycle and pedestrian components of the transportation system within the study area are described below.

Existing Roadway Network

Regional vehicular access to the site is provided primarily by the freeway system that serves the central areas of Sacramento. State Route 99 (SR-99) is a north-south facility that is located less than one mile east of the site. Access to SR-99 is provided via Sutterville Road (12th Ave) near Franklin Boulevard. The east-west bound Interstate 80 (I-80) and State Route 50 (SR-50) coexist approximately 1.5 miles north of the site. Access to I-80/SR-50 West is provided at W Street and 16th Street and access to I-80/SR-50 East is provided at Broadway and 16th Street. The two facilities split at their intersection with SR-99.

24th Street is a four-lane arterial road from Sutterville Road south through Sacramento Executive Airport and the Florin Area of Sacramento to terminate near Meadowview Park in southern Sacramento. At Sutterville Road, the roadway is off-set about 1,000 feet to the east and travels north near the project vicinity. It operates primarily as a two-lane collector road until around 2nd Avenue where it widens to four-lanes and continues through Midtown Sacramento to the Southern Pacific railroad tracks just south of the American River.

Sutterville Road is a two-mile long east-west roadway that runs from I-5 near Riverside Boulevard east along the southern edge of Land Park to Freeport Boulevard; then resumes about 1,200 feet north as a four-lane arterial road to Franklin Boulevard where it continues as 12th Avenue. It has an overpass construction over the Western Pacific railroad tracks. The eastern bypass onramp is located in the Proposed Project site and would be reconfigured as part of the Project.

21st Street is a discontinuous roadway that extends from the American River to the north to Meadowview Road to the south. It operates as a one-way northbound arterial roadway from G Street to just south of 4th Avenue. A portion of the one-way segment was recently converted to two-way traffic operations as part of the Freeport Boulevard/21st Street Two-Way Conversion. 21st Street provides a potential route to I-80/I-50 from the project site.

Freeport Boulevard extends from I-80/I-50 south to the city limit. To the north, it continues as 19th Street and to the south, it becomes River Road. Between G Street and just south of 4th Avenue, it operates as a one-way southbound arterial roadway. As with 21st Street, a portion of Freeport Boulevard was recently converted to two-way traffic operations. It serves as an alternative route to connect to I-80/I-50.

Franklin Boulevard extends from Broadway on the north to just south of the City of Elk Grove primarily as a four-lane arterial. It provides freeway access to southbound SR-99 at 15th Avenue.

Broadway is a major four-lane arterial road that runs from the American River just to the west of I-5 to 65th Street to the east. It provides a northern freeway access alternative to southbound SR-99 and from northbound SR-99.

2nd Avenue is a discontinuous local street that extends eastward from Riverside Boulevard. In the project vicinity, it connects west to Freeport Boulevard, and east to Franklin Boulevard, under SR-99, to Broadway and beyond.

4th Avenue is a discontinuous local street that extends eastward from I-5 to just beyond 65th Street. It lies just north of the project site and offers an alternative connection to 21st Street. Access to 21st Street from 4th Street is restricted to right turning movements, only.

Portola Way extends from 21st Street to the west to just beyond Franklin Boulevard. It is a two-lane local street that borders the northern edge of the project site.

Donner Way is a two-lane local street that extends from 24th Street east to 31st Avenue; then again between 32nd Avenue to 33rd Avenue to the east of SR-99. It provides a through connection to Franklin Boulevard from the project site.

5th Avenue is a discontinuous local street that spans from I-5 on the west to Broadway on the east. In the project vicinity, it connects the northern portion of the site to Franklin Boulevard, where the an offset connection continues east over SR99 to Broadway.

10th Avenue is an east-west discontinuous local road that spans from I-5 on the west to east Sacramento. In the project vicinity, it extends from 24th Street to the western edge of Curtis Park; then continues from the eastern edge of Curtis Park to Franklin Boulevard.

11^h Avenue is an east-west discontinuous local street that spans from I-5 on the west to east Sacramento. In the project vicinity, it extends from 24th Street to the western edge of Curtis Park; then continues from Cutter Way to Franklin Boulevard.

Vallejo Way, a two-lane local street, runs from I-5 east past Riverside Boulevard to its termination at Freeport Boulevard.

West Curtis Drive is a two-lane local street that runs along the western edge of Curtis Park, one block east of the project.

Existing Transit System

The Sacramento Regional Transit District (RT) provides bus and light rail services near the project site. Three bus routes operate in the project area: Routes 62 (Freeport), 63 (24th Street-Hogan), and 83 (14th Avenue). Route 62 provides service between Rush River Drive and the downtown area in 30 minute intervals on weekdays and one-hour intervals on Saturday. There is no Sunday service. It operates from about 6:00 am to 11:00 pm on weekdays and 7:00 am to 10:00 pm on Saturdays. Route 63 provides service between Meadowview Road and the downtown area. Service is provided on 60- to 75-minute intervals from about 5:30 a.m. to 6:30 p.m. on weekdays. Route 83 provides service between Riverside Boulevard and University/65th Street. In the project vicinity, it operates along Sutterville Boulevard at 30 minute intervals between 6:20 am and 7:00 pm on weekdays. There is no service on weekends and holidays for Route 63 and Route 83.

The nearest light rail stations to the project site are the 4th Avenue/Wayne Hultgren station and the City College station, located at opposite ends of the west side of the site. Service begins at 4:30 am, 5:30 am, and 6:00 am on weekdays, Saturdays, and Sundays, respectively, and runs until 1:00 am. Trains operate in 15 minute intervals during peak and midday hours and in 30 minutes intervals during the evening and night periods. Figure 5.2-2 shows the existing transit routes.

Existing and Planned Pedestrian and Bicycle Facilities

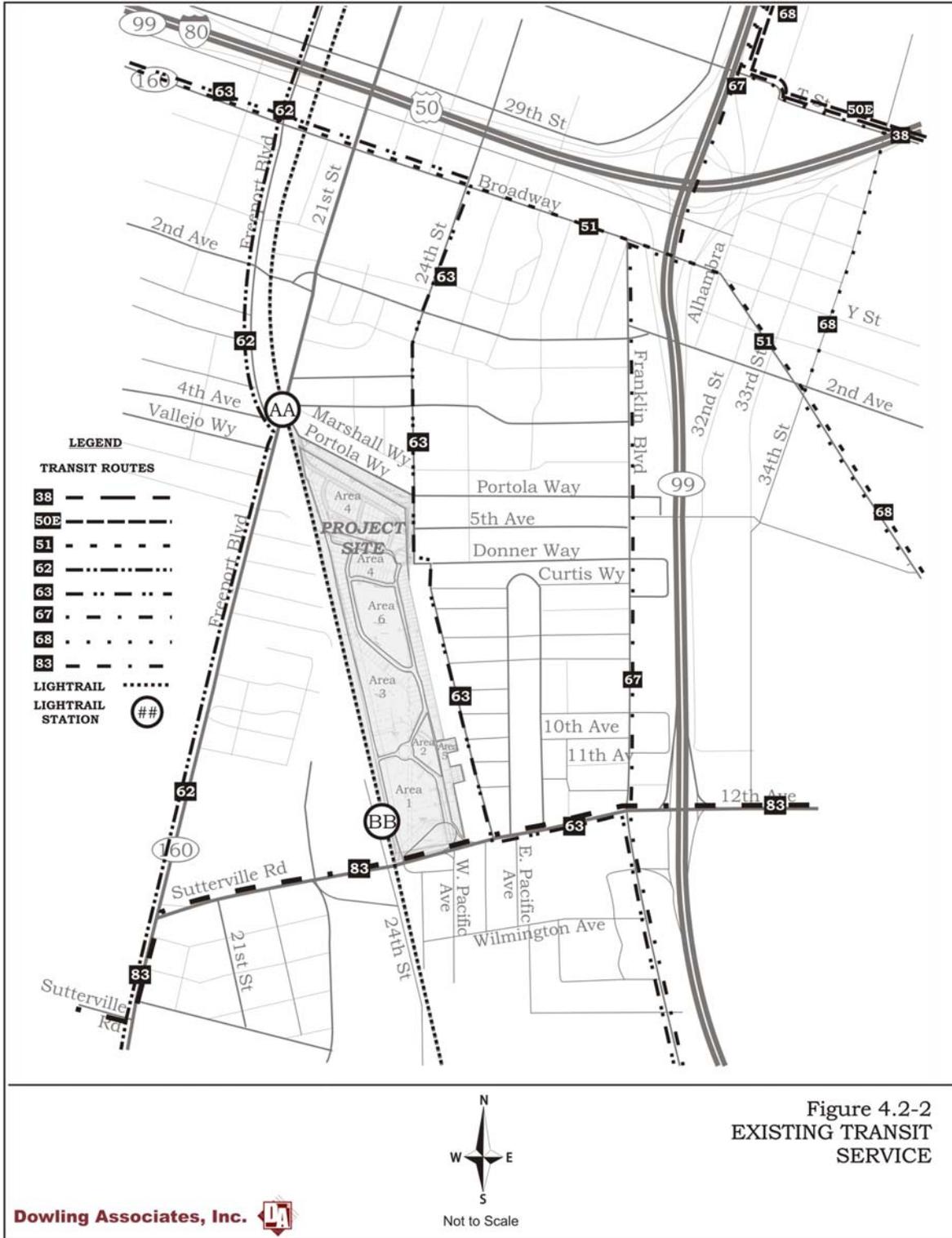
According to the Bikeway Master Plan map contained in the City of Sacramento Parks and Recreation Master Plan 2005-2010, existing bikeways may be found along the following roadways in the project area:

- Freeport Boulevard south of Sutterville Road (North)
- Sutterville Road between Freeport Boulevard and just east of Riverside Boulevard
- 2nd Avenue between 34th Street and Riverside Boulevard
- 5th Avenue east of Franklin Boulevard

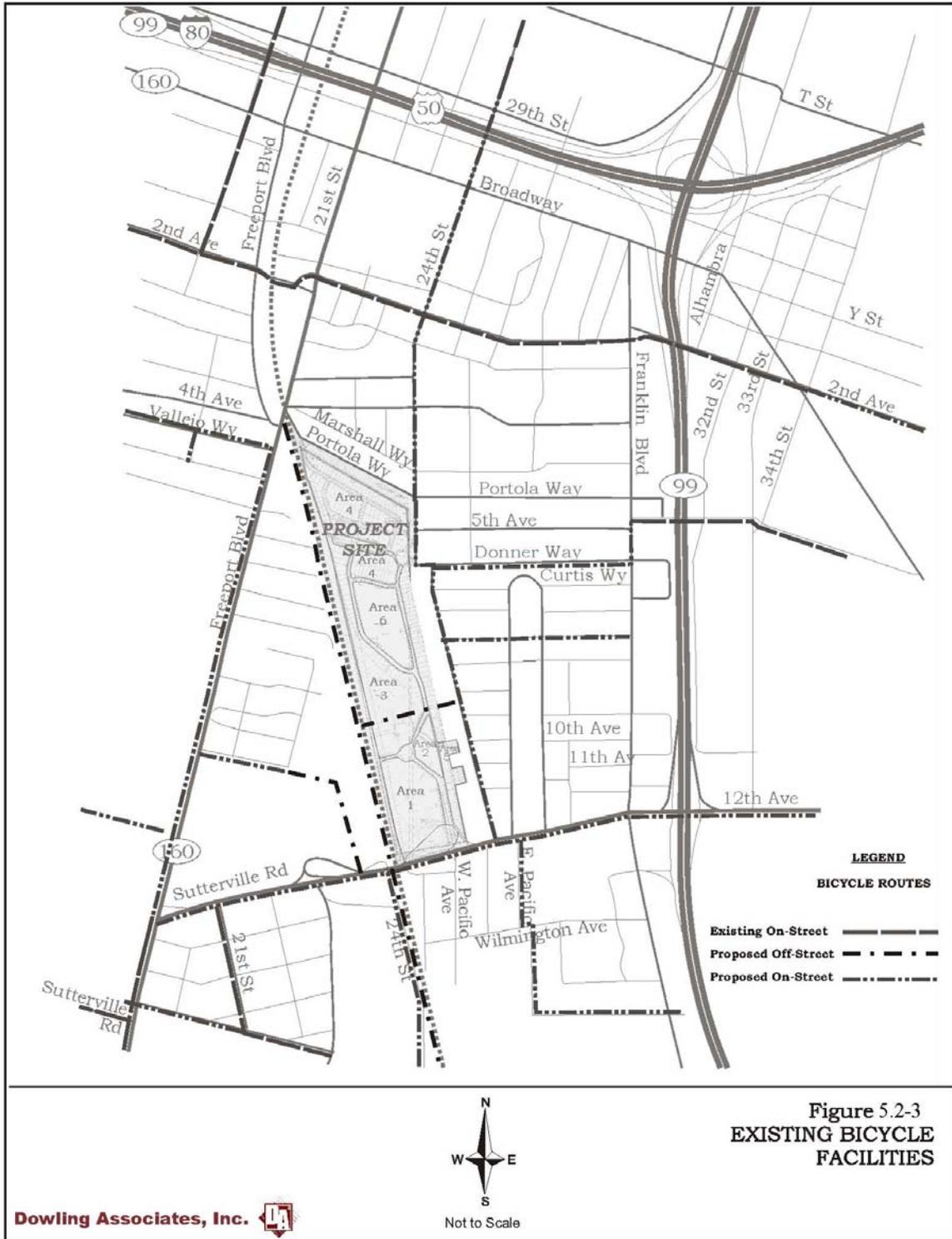
An extensive bikeway network was proposed that would connect the project site to the rest of the city. Proposed bikeways located adjacent to the project site include on-street bike lanes along Sutterville Road and 24th Street and an off-street bike path along the Western Pacific railroad tracks. Figure 5.2-3 shows the existing and planned bikeways under the Bikeway Master Plan.

Sidewalks are provided along almost all of the streets in the project area.

**Figure 5.2-2
 Existing Transit Service and Facilities**



**Figure 5.2-3
 Existing Bicycle Facilities**



Study Area

A set of intersections, street segments, freeway ramps, and freeway merge/diverge were selected for study based upon the anticipated volume and distributional patterns of project traffic and known locations of operational difficulty. This selection was made in collaboration with the City of Sacramento Department of Transportation, Traffic Engineering Division staff. The following locations, shown in Figure 5.2-1, were studied:

▪ Intersections

1. 24th Street / Broadway
2. Freeport Boulevard / 2nd Avenue*
3. 21st Street / 2nd Avenue
4. 24th Street / 2nd Avenue*
5. 21st Street / 4th Avenue
6. Freeport Boulevard / 21st St*
7. Freeport Boulevard / Vallejo Way
8. 24th Street / Portola Way*
9. 24th Street / 5th Avenue
10. 24th Street / Donner Way
11. Franklin Boulevard / 5th Avenue (North)
12. 24th Street / 10th Avenue
13. 24th Street / 11th Avenue
14. Sutterville Road / Freeport Boulevard (North)*
15. Sutterville Road / 21st Street
16. Sutterville Road / Sutterville Bypass Ramps West*
17. Sutterville Road / Sutterville Bypass Ramps East
18. Sutterville Road / 24th Street*
19. Sutterville Road / Curtis Drive West*
20. Sutterville Road / Franklin Boulevard*
21. Sutterville Road / SR 99 SB Ramp*
22. Sutterville Road / SR 99 NB Ramp*
23. Sutterville Road / Freeport Boulevard (South)*
30. Franklin Boulevard / 5th Avenue (South)

▪ Street Segments

1. Sutterville Road Overcrossing*
2. Sutterville Road between East Curtis Drive and West Curtis Drive*
3. 24th Street between 9th Street and 10th Street
4. 24th Street between Portola Way and Marshall Way*
5. Donner Way between 24th Street and 25th Street
6. Freeport Boulevard north of 4th Avenue*
7. 21st Street north of 4th Avenue
8. Portola Way between 21st Street and 24th Street
9. Marshall Way between 21st Street and 24th Street

10. 4th Avenue between 21st Street and 24th Street
11. 3rd Avenue between 21st Street and 24th Street
12. 24th Street just south of Donner Way
13. 10th Avenue just east of 24th Street
14. 11th Avenue just east of 24th Street
15. 5th Avenue just east of 24th Street
16. E. Pacific Avenue north of Wilmington Avenue
17. W. Pacific Avenue just north of Wilmington Avenue

- Freeway Ramps

1. SR 99 Southbound Off-Ramp
2. SR 99 Northbound Off-Ramp

- Freeway Merge/Diverge

1. SR 99 On-Ramp merges (two ramps)
2. SR 99 Off-Ramp diverges (two ramps)

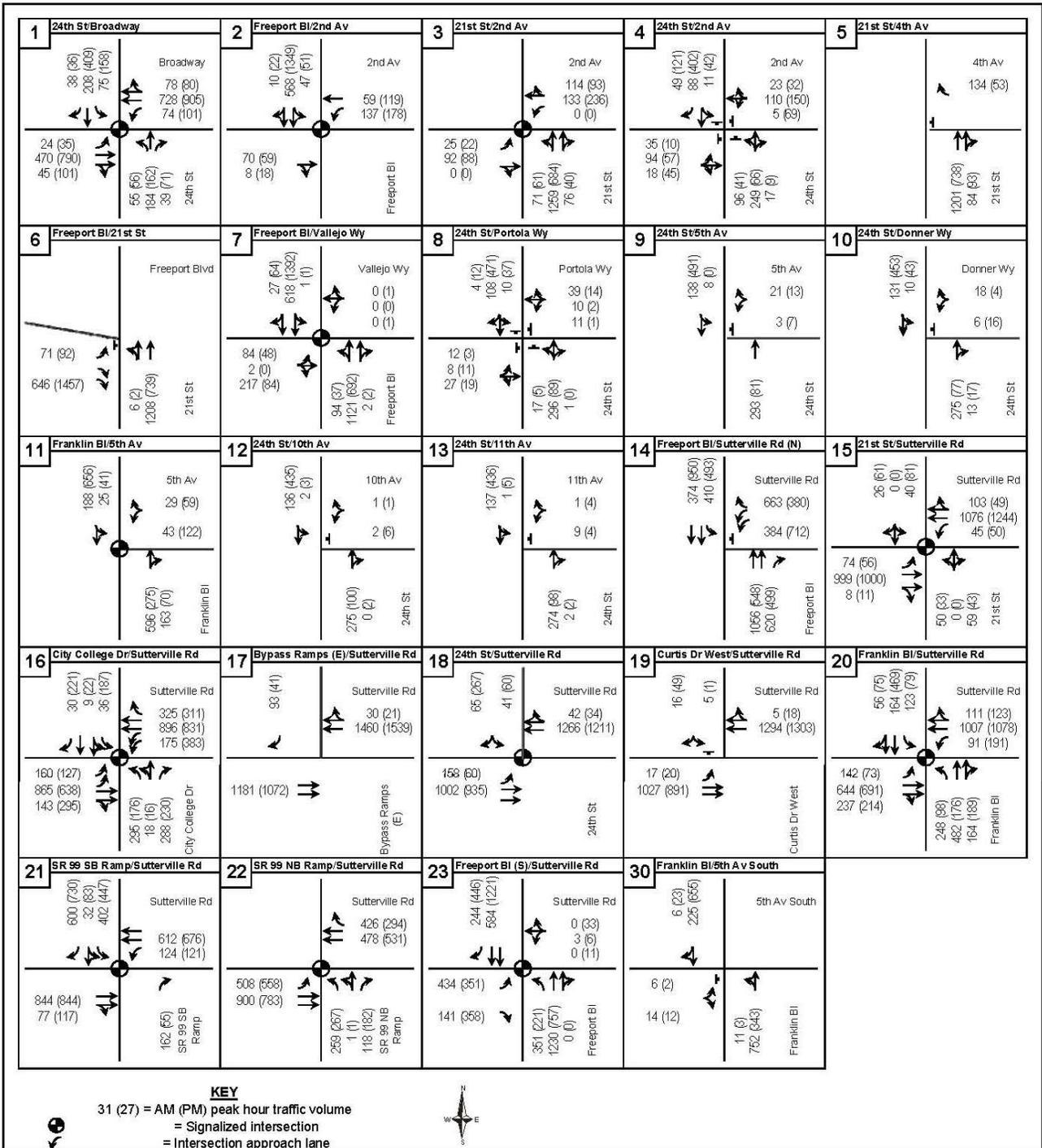
Existing Traffic Volumes

Turning traffic volumes were counted at the study intersections during the a.m. and p.m. commuter periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) and on Saturday between 1:00 a.m. and 3:00 p.m. in March, April and October 2005. Selected locations, denoted by “*” above, were recounted on weekdays in September 2007 in order to capture changes in traffic patterns since the initial counts. The turning traffic volumes shown in Figure 5.2-4 and Figure 5.2-5 and daily traffic volumes shown in Table 5.2-7 reflect existing Year 2007 counts where available. At locations where Year 2007 counts are not available, Year 2005 traffic volumes were adjusted based on Year 2007 counts at adjacent locations if the approach volumes are projected to be higher than Year 2005 counts. Traffic volumes were adjusted for the analysis of project impacts to account for the conversion of Freeport Boulevard and 21st Street to two-way operations. Please refer to the Baseline Conditions section.

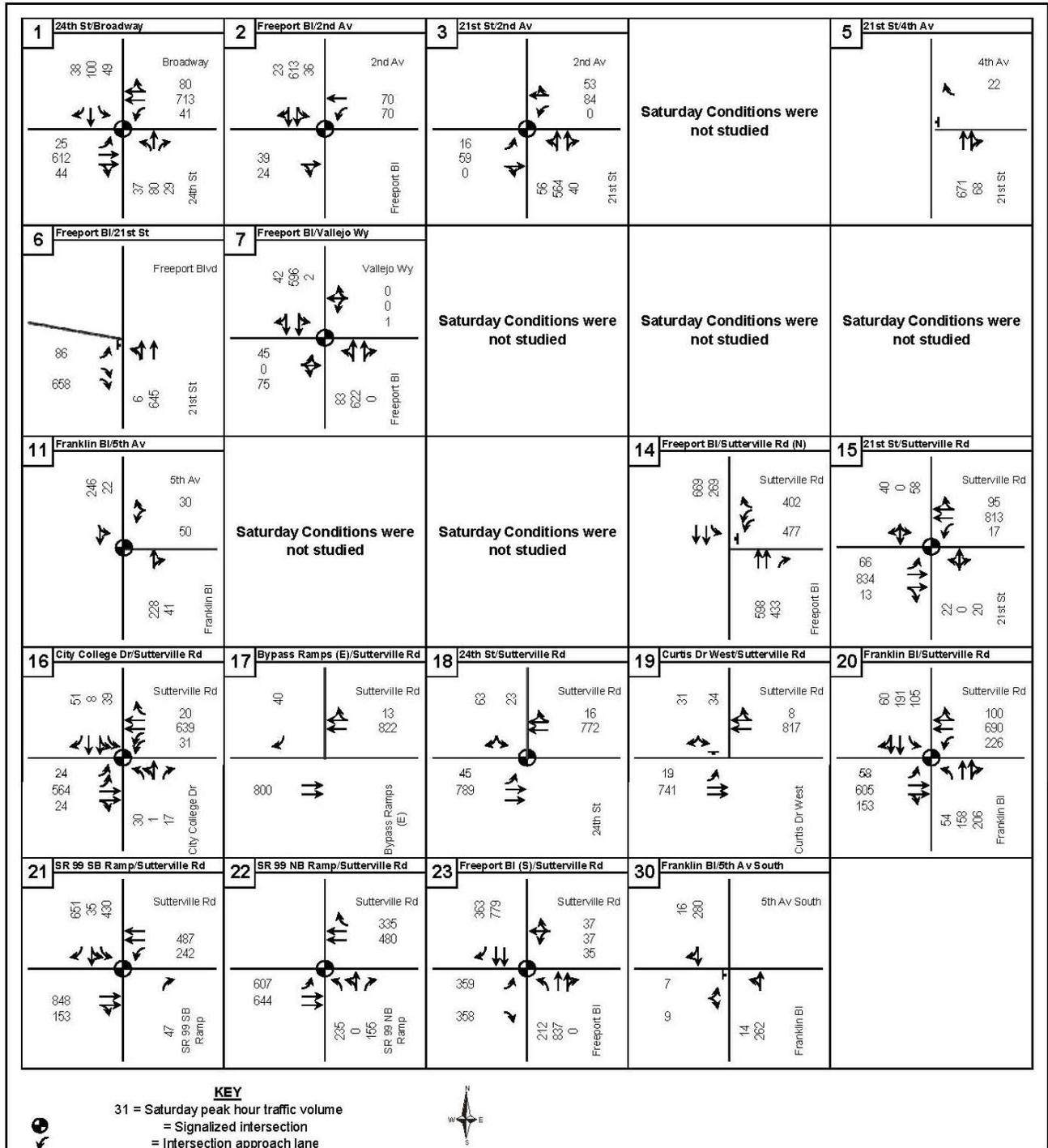
REGULATORY PROVISIONS

Roadway operations are regulated by agencies with jurisdiction of a particular roadway. In the study area, the interstate freeways are under the jurisdiction of the California Department of Transportation (Caltrans). The non-freeway roadways are under the jurisdiction of the City of Sacramento.

**Figure 5.2-4
Existing Traffic Volumes AM (PM)**



**Figure 5.2-5
 Existing Traffic Volumes (Saturday)**



Levels of Service

“Levels of service” describe the operating conditions experienced by motorists. Level of service is a qualitative measure of the effect of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, driving comfort and convenience. Levels of service are designated "A" through "F" from best to worst, which cover the entire range of traffic operations that might occur. Level of Service (LOS) "A" through "E" generally represents traffic volumes at less than roadway capacity, while LOS "F" represents over capacity and/or forced flow conditions.

The *City of Sacramento General Plan* (October 1987) outlines the goals and policies that coordinate the transportation and circulation system with planned land uses. The General Plan (Goal D, Street and Road section) identifies LOS C as the goal for City’s local and major street system except at freeway ramp intersections, where the goal is LOS D. In addition, the General Plan smart growth principles identify the need for a balanced transportation system, including walkability and improved bicycle infrastructure.

While the 1988 General Plan was in place at the time this study was initiated, the City is currently working on updating the General Plan, with adoption expected in early 2009. In general, the *Draft 2030 General Plan* (City of Sacramento, May 2008) update includes similar goals with respect to the transportation system that were described in the 1988 General Plan. However, the goal related to roadway LOS is significantly different under the Draft 2030 General Plan update:

- The City shall allow for flexible LOS standards, which will permit increased densities and mix of uses to increase transit ridership, biking, and walking, which decreases auto travel, thereby reducing air pollution, energy consumption, and greenhouse gas emissions.
 - Level of Service Standards for Multi-Modal Districts – The City shall seek to maintain the following standards in multi-modal districts including the Central Business District, areas within ½ mile walking distance of light rail stations, and mixed-use corridors characterized by frequent transit service, enhanced pedestrian and bicycle systems, a mix of uses, and higher-density development:
 - Maintain operations on all roadways and intersections at LOS E or better at all times, including peak travel times, unless maintaining this LOS would, in the City’s judgment, be infeasible and/or conflict with the achievement of other goals. Congestion in excess of LOS E may be acceptable, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation as part of a development project or City-initiated project.
 - Base Level of Service Standard – The City shall seek to maintain the following standards for all areas outside of multi-modal districts:
 - Maintain operations on all roadways and intersections at LOS D or better at all times unless maintaining this LOS would, in the City’s judgment, be infeasible and/or conflict with the achievement of other goals. Congestion in excess of LOS D may be acceptable, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation as part of a development project or City-initiated project.

The City's pedestrian friendly Street Standards (adopted in February 2004) provide guidelines on conceptual street standards to enhance and improve the pedestrian environment and encourage alternate mode use in the City of Sacramento. The key elements of the standards are listed below:

- Eliminate rolled curb
- Provide separated sidewalks on all streets
- Reduce widths of collector and arterial streets
- Reduce travel lane widths
- Add bike lanes to all new collector and arterial streets

Signalized Intersections Analysis

Signalized intersection analyses were conducted using the operational methodology outlined in the *Highway Capacity Manual* (Transportation Research Board, Washington, D.C., 2000, Chapters 10 and 16). This procedure calculates an average stopped delay per vehicle at a signalized intersection, and assigns a level of service designation based upon the delay. The method also provides a calculation of the volume-to-capacity (v/c) ratio of the critical movements at the intersection. Table 5.2-1 shows level of service criteria for signalized intersections.

Unsignalized Intersections Analysis

Stop sign controlled intersections were analyzed utilizing the methodology outlined in the *Highway Capacity Manual* (Transportation Research Board, Washington, D.C., 2000, Chapters 10 and 17). This methodology determines the Level of Service by calculating an average total delay per vehicle for each controlled movement and for the intersection as a whole. A LOS designation is assigned based upon the average control delay of all movements. Table 5.2-2 presents the relationship of total delay to level of service for stop controlled intersections.

Street Segment Analysis

Selected street segments were evaluated by comparing annual daily traffic volumes to the level of service criteria set forth in the City's Traffic Impact Guidelines. Table 5.2-3 shows level of service criteria for arterial roadways, local streets, and collector streets. The criteria for local and collector streets were based on the maximum daily traffic for those types of facilities listed in the Sacramento City Code. The maximum daily traffic in the Code was set as the threshold for LOS C traffic operations. The thresholds for other levels of service were based on volume-to-capacity ratios of 0.60 for LOS A, 0.70 for LOS B, 0.80 for LOS C, 0.90 for LOS D, and 1.00 for LOS E.

Table 5.2-1 Level Of Service Criteria – Signalized Intersections		
Level of Service (LOS)	Average Delay (seconds/vehicle)	Description
A	≤ 10	Very Low Delay: This level of service occurs when progression is extremely favorable and most vehicles arrive during a green phase. Most vehicles do not stop at all.
B	>10 and ≤ 20	Minimal Delays: This level of service generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.
C	> 20 and ≤ 35	Acceptable Delay: Delay increases due to only fair progression, longer cycle lengths, or both. Individual cycle failures (to service all waiting vehicles) may begin to appear at this level of service. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	> 35 and ≤ 55	Approaching Unstable Operation/Significant Delays: The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume / capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55 and ≤ 80	Unstable Operation/Substantial Delays: These high delay values generally indicate poor progression, long cycle lengths, and high volume / capacity ratios. Individual cycle failures are frequent occurrences.
F	> 80	Excessive Delays: This level, considered unacceptable to most drivers, often occurs with oversaturation (that is, when arrival traffic volumes exceed the capacity of the intersection). It may also occur at nearly saturated conditions with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.
Source: Transportation Research Board, <i>Highway Capacity Manual</i> , Washington, D.C., 2000, pages 10-16 and 16-2.		

Table 5.2-2 Level of Service Criteria Unsignalized Intersections	
Level of Service	Average Control Delay (seconds/vehicle)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50
Source: Transportation Research Board, <i>Highway Capacity Manual</i> , Washington, D.C., 2000, pages 10-16 and 16-2.	

Table 5.2-3 Level of Service Criteria – Roadways						
Facility Type	Number of Lanes	Maximum Volume for Given Service Level				
		A	B	C	D	E
Arterial, low access control	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial, moderate access control	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,400	37,800	43,200	48,600	54,000
Arterial, high access control	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	43,000	48,000	54,000	60,000
Local Street	2	3,000	3,500	4,000	4,500	5,000
Collector Street	2	5,250	6,125	7,000	7,875	8,750
Facility Type	Stops/Mile		Driveways		Speed	
Arterial, low access control	4+		Frequent		25-35 MPH	
Arterial, moderate access control	2-4		Limited		35-45 MPH	
Arterial, high access control	1-2		None		45-55 MPH	
Sources: Arterial volumes from City of Sacramento, <i>Traffic Impact Analysis Guidelines</i> , 1996. Local and Collector Street volumes based on City of Sacramento <i>Design and Procedures Manual</i> , Section 15.						

Neighborhood Traffic Management Program

The City of Sacramento has a Neighborhood Traffic Management Program (NTMP) where neighborhoods can petition the City to install traffic calming devices to address residents' concerns about traffic. There are two phases of an NTMP—Phase I involves less restrictive modifications such as the installation of high visibility speed limit signs, striping of bike lanes, and the installation of speed humps. Phase II involves more restrictive measures including half- and full-street closures, diverters, and one-way/two-way street conversions. Phase II modifications are implemented if the Phase I modifications do not adequately address neighborhood concerns.

Freeway Ramp and Merge / Diverge Analysis

Freeway ramps and merge / diverge areas were analyzed using a methodology outlined in the *Highway Capacity Manual* (Transportation Research Board, Washington, D.C., 2000, Chapters 13 and 25). Freeway ramp operating conditions are dependent upon traffic volumes and the ramp characteristics. These characteristics include the length and type of acceleration / deceleration lanes; free-flow speed of the ramps; number of lanes; grade; and types of facilities that the ramps interconnect. Table 5.2-4 shows the relationship of level of service to freeway density.

Table 5.2-4	
Level Of Service Criteria – Freeway Ramp Merge / Diverge Areas	
Level of Service	Maximum Density (passenger vehicles per mile per lane)
A	10
B	20
C	28
D	35
E	> 35
F	Demand exceeds capacity

Source: Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 2000, page 25-5.

As shown in Table 5.2-4, the basic criterion used to determine Freeway Ramp LOS is vehicle density in the merge or diverge area. Note that the 2000 Highway Capacity Manual² requires that several additional criteria be considered so that LOS F is automatically attained for a ramp if:

At an on-ramp, volume exceeds capacity ($V > C$) in:

1. The segment of a freeway downstream, or
2. The merge-area defined by the on-ramp and the two adjacent freeway lanes,

At an off-ramp, volume exceeds capacity ($V > C$) in:

1. The segment of a freeway upstream OR downstream,
2. The off-ramp itself, or
3. The diverge-area defined by the two adjacent freeway lanes approaching the ramp

Table 5.2-5 shows maximum service flow rates for freeway ramps, based upon information presented in the *Highway Capacity Manual* (Transportation Research Board, Washington, D.C., 2000, Chapters 13 and 25; 1985, Chapter 5). This methodology is used in cases where the freeway ramp configuration governs the operating condition.

² See *Highway Capacity Manual*, Transportation Research Board, Washington, D.C., 2000, pages 13-22 and 13-23.

Table 5.2-5 Level of Service Definitions – Freeway Ramps						
Level of Service (LOS)	Service Flow Rates for Single Lane / Two Lane Ramps Ramp Design Speed (Mph)					Definition
	< 20	21-30	31-40	41-50	> 51	
A	(1)	(1)	(1)	(1)	800/ 1,550	Conditions of free flow; speed is controlled by driver's desires, speed limits, or physical conditions.
B	(1)	(1)	(1)	1,150/ 2,250	1,150/ 2,350	Conditions of stable flow; operating speeds beginning to be restricted; little or no restrictions on maneuverability from other vehicles.
C	(1)	(1)	1,400/ 2,600	1,600/ 3,100	1,700/ 3,350	Conditions of stable flow; speeds and maneuverability more closely restricted
D	(1)	1,550/ 2,900	1,700/ 3,200	1,950/ 3,850	2,050/ 4,150	Conditions approach unstable flow; tolerable speeds can be maintained, but temporary restrictions may cause extensive delays; little freedom to maneuver; comfort and convenience low.
E	1,800/ 3,200	1,900/ 3,500	2,000/ 3,800	2,100/ 4,100	2,200/ 4,400	Conditions approach capacity; unstable flow with stoppages of momentary duration; maneuverability severely limited.
F	Widely Variable					Forced flow conditions; stoppages for long periods; low operating speeds.
(1) Level of service not attainable due to restricted design speed.						
Sources: Transportation Research Board, Highway Capacity Manual, Washington, D.C., 2000, page 25-5. Transportation Research Board, Highway Capacity Manual, Washington, D.C., 1985, page 5-15.						

Existing Levels of Service

The existing weekday a.m. and p.m. peak hour and Saturday peak hour operating conditions at the study area intersections are shown in Table 5.2-6.

**Table 5.2-6
 Intersection Levels of Service – Existing Conditions**

Intersection	Traffic Control	Peak Hour	LOS¹	Delay²
1. 24th St / Broadway	Signal	AM	B	14.1
		PM	B	17.9
		Saturday	B	10.6
2. Freeport Bl / 2nd Av	Signal	AM	B	11.1
		PM	B	13.7
		Saturday	A	8.6
3. 21st St / 2nd Av	Signal	AM	B	10.1
		PM	B	12.5
		Saturday	A	9.0
4. 24th St / 2nd AV	4-Way Stop	AM	B	11.0
		PM	C	15.1
5. 21th St / 4th Av	Stop Sign	AM	A	1.5
		PM	A	0.7
		Saturday	A	0.3
6. Freeport Bl / 21st St	Stop Sign	AM	B	0.8
		PM	B	1.3
		Saturday	B	1.4
7. Freeport Bl / Vallejo Wy	Signal	AM	B	10.2
		PM	A	4.8
		Saturday	A	5.7
8. 24th St / Portola Wy	4-Way Stop	AM	A	9.1
		PM	B	11.9
9. 24th St / 5th Av	Stop Sign	AM	A	0.7
		PM	A	0.3
10. 24th St / Donner Wy	Stop Sign	AM	A	0.7
		PM	A	0.9
11. Franklin Bl / 5th Av (North)	Signal	AM	A	5.6
		PM	A	6.4
		Saturday	A	5.0
12. 24th St / 10th Av	Stop Sign	AM	A	0.1
		PM	A	0.2
13. 24th St / 11th Av	Stop Sign	AM	A	0.3
		PM	A	0.2
14. Sutterville / Freeport (North)	Signal	AM	C	21.8
		PM	B	17.8
		Saturday	B	15.2
15. Sutterville / 21st St	Signal	AM	B	13.8
		PM	B	18.5
		Saturday	B	13.6
16. Sutterville / City College Dr	Signal	AM	C	20.4
		PM	C	23.7
		Saturday	B	10.9
17. Sutterville / Bypass Ramps East	Stop Sign	AM	A	0.6
		PM	A	0.3
		Saturday	A	0.3

Table 5.2-6 Intersection Levels of Service – Existing Conditions				
Intersection	Traffic Control	Peak Hour	LOS¹	Delay²
18. Sutterville / 24th St	Signal	AM	A	9.7
		PM	B	14.4
		Saturday	A	6.7
19. Sutterville / Curtis Dr West	Stop Sign	AM	A	0.3
		PM	A	0.5
		Saturday	A	0.7
20. Sutterville / Franklin Bl	Signal	AM	C	28.0
		PM	C	24.9
		Saturday	C	24.2
21. Sutterville / SR 99 SB Ramp	Signal	AM	C	27.1
		PM	C	28.2
		Saturday	C	33.4
22. Sutterville / SR 99 NB Ramps	Signal	AM	B	17.3
		PM	B	19.0
		Saturday	C	20.0
23. Sutterville / Freeport (South)	Signal	AM	C	22.4
		PM	C	23.8
		Saturday	C	22.9
30. Franklin Bl / 5th Av (South)	Stop Sign	AM	B	0.3
		PM	B	0.2
		Saturday	B	0.5
Source: Dowling Associates, Inc., 2008				
¹ LOS = Level of Service				
² Weighted average control delay in seconds				

Table 5.2-7 shows the existing weekday and Saturday operating conditions at the study area street segments. All the street segments meet the City’s level of service “C” goal currently with the exception of Sutterville Railroad Overcrossing, which operates at LOS D on weekday.

Table 5.2-7 Roadway Levels of Service– Existing Conditions				
Roadway Segment	Lanes	Weekday		
		ADT	LOS	V/C
Weekday				
Sutterville Road Railroad Overcrossing	4	28,864	D	0.80
Sutterville Rd between E. Curtis Dr and W. Curtis Dr	4	27,346	C	0.76
24th Street between 9th Street and 10th Street	2	3,690	A	0.25
24th Street between Portola Way and Marshall Way	2	3,685	A	0.25
Donner Way between 24th Street and 25th Street	2	636	A	0.04
Freeport Boulevard north of 4th Avenue	2	10,649	C	0.71
21st Street north of 4th Avenue	3	10,786	A	0.48
Portola Way between 21st Street and 24th Street	2	481	A	0.03
Marshall Way between 21st Street and 24th Street	2	778	A	0.05
4th Avenue between 21st Street and 24th Street	2	632	A	0.04
3rd Avenue between 21st Street and 24th Street	2	360	A	0.02
24th Street just south of Donner Way	2	3,322	A	0.22
10th Avenue just east of 24th Street	2	94	A	0.01
11th Avenue just east of 24th Street	2	98	A	0.01
5th Avenue just east of 24th Street	2	401	A	0.03
W Pacific Avenue north of Wilmington Avenue	2	1,311	A	0.09
E Pacific Avenue just north of Wilmington Avenue	2	633	A	0.04
Saturday				
Sutterville Road Railroad Overcrossing	4	21,692	B	0.60
Sutterville Rd between E. Curtis Dr and W. Curtis Dr	4	20,009	A	0.56
Freeport Boulevard north of 4th Avenue	2	8,165	A	0.54
21st Street north of 4th Avenue	3	8,219	A	0.37
Source: Dowling Associates, Inc., December 2007.				
ADT = Averaged daily traffic				
LOS = Level of service				
V/C = Volume/Capacity				

Neighborhood Traffic Management Program

There are four NTMP areas near the Curtis Park Village project site. The Curtis Park NTMP (along 5th Av on the north, Franklin Bl on the east, Sutterville Rd on the south, 24th St on the west) has completed Phase I improvements with all devices installed in 2008. The Heilbron Oaks NTMP Traffic Plan (along Castro Way on the north, Franklin Bl on the east, Portola Way on the south, 24th St on the west) is in process by the City’s Department of Transportation. City Farms NTMP (along Sutterville Rd on the north, Franklin Bl on the east, 24th Av on the south, Deeble St on the west) has been approved by the City Council and anticipated to be implemented by the summer of 2009 and the West Curtis Oaks NTMP (along 4th Av on the north, 24th St on the east, Portola Way on the south, 21st St on the west) is on hold pending the completion of the Freeport/ 21st Conversion. Some of the proposed improvements in the Curtis Park Traffic Calming Plan include speed humps, speed lumps, stop signs installation and entry islands. The Heilbron Oaks NTMP includes traffic island, stop signs installation, speed lumps, speed legends, neighborhood signs and street name signs. The City Farms NTMP includes improvements such as raised crosswalk, crosswalk signs, speed lumps stop signs installation.

The existing weekday a.m. and p.m. peak hour and Saturday peak hour operating conditions at the SR 99 / 12th Street interchange are shown in Table 5.2-8. All the study ramp interchanges operate at LOS D or better and meet the Caltrans’ level of service “E” goal.

Table 5.2-8 Existing State Route 99 Interchange Operations				
Ramp	Peak Hour	LOS¹	Density	Volume
Northbound SR 99				
12th Ave. Off-Ramp	AM	C	27.54	378
	PM	C	24.64	450
	Saturday	C	25.73	390
12th Ave. On-Ramp	AM	C	24.75	934
	PM	C	22.10	852
	Saturday	C	23.81	942
Southbound SR 99				
12th Ave. Off-Ramp	AM	C	24.55	1034
	PM	D	33.79	1260
	Saturday	D	30.97	1116
12th Ave. On-Ramp	AM	B	16.34	201
	PM	C	22.97	238
	Saturday	C	21.91	395
Source: Dowling Associates, Inc. 2007.				
¹ LOS = Level of Service				

Table 5.2-9 presents the existing weekday a.m. and p.m. peak hour and Saturday peak hour expected queues versus the storage capacity at the freeway off-ramps. The storage capacity of the right-turn movement of SR 99 southbound off-ramp is inadequate during the PM and Saturday peak hours. All other freeway off-ramps are operating at an acceptable level of service for all peak hours.

Table 5.2-9 SR 99 Ramp Queues - Existing Conditions							
Location	Storage Capacity (ft)	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		Queue (ft)	Adequate Capacity	Queue (ft)	Adequate Capacity	Queue (ft)	Adequate Capacity
SR99 SB Off-ramp to Sutterville Rd.	765	625	Yes	875	No	825	No
SR 99 NB Off-ramp to Sutterville Rd.	510	175	Yes	275	Yes	250	Yes
Source: Dowling Associates, Inc., 2007.							

INTRODUCTION TO ANALYSIS

Project Land Use and Circulation

Land Use

The proposed Curtis Park Village project consists of a mixed-use commercial and residential in-fill development with 216 single family residential units, 170,600 square feet of retail commercial area, two restaurants, one dinner theater, a health spa, and a hotel on a 72-acre site.

Access

The main access for the proposed project site would be provided from Sutterville Road at a new signalized intersection between West Pacific Avenue and Jefferey Avenue. A second access to the south would be located at the southwest corner of the site, through the Sutterville Road Under-passing. A northern access would be located at the northwest corner of the site, providing a connection to Portola Way. Project traffic exiting the site at the Portola Way connection would be prohibited from making a left-turn onto 4th Avenue. Access to the east would be provided from the new access road at Donner Way. Five access scenarios were evaluated for the Proposed Project:

1. Proposed project access (Option 2 Neighborhood Limited Connection Option)
2. Proposed project access plus eastern connection at 5th Avenue (Option 1 Neighborhood Connection Option)
3. Proposed project access plus eastern connections at 10th Avenue
4. Proposed project access plus full access signalized intersection at Sutterville Road and Road A (with removal of the Sutterville Road Under passing)
5. Proposed project access plus western at-grade crossing

The last scenario was evaluated qualitatively only based on a comparison of how trips would be distributed, and the remaining scenarios were analyzed quantitatively.

Project Trip Generation

Trip generation of the proposed project and project alternatives is based upon information compiled by the Institute of Transportation Engineers (*Trip Generation, Seventh Edition*, 2003) and (*Trip Generation Handbook*, 2004). In summary, the project has the potential to generate about 25,857 trips on an average day of which 16,030 are new external vehicular trips. Of the external trips, 699 trips would occur during the weekday morning peak hour, 1,649 trips during the weekday evening peak hour, and 1,818 trips during the Saturday peak hour.

Table 5.2-10 compares the number of trips that would be generated by the project alternatives.

**Table 5.2-10
Trip Generation – Proposed Project**

Land Use	Amount	Trips Generated									
		Weekday	AM Peak Hour			PM Peak Hour			Saturday		
			In	Out	Total	In	Out	Total	In	Out	Total
Alternative 1: No Project/No Build Alternative											
New Trips			0	0	0	0	0	0	0	0	0
Alternative 2: Proposed Project											
Retail	92 KSF	6,439	91	58	149	285	308	593	427	394	821
Retail / Grocery Store	54 KSF	4,973	128	82	210	290	279	569	312	299	611
Retail / Bookstore	25 KSF	5,299	75	48	123	254	234	488	282	251	533
Restaurant	13 KSF	1,653	78	72	150	87	55	142	164	96	260
Dinner Theater ⁴	560 Seats	1,602	9	8	17	98	48	146	124	87	211
Hotel	150 Rooms	969	41	27	68	47	42	89	35	41	75
Health Spa	85 KSF	2,799	43	60	103	175	169	344	111	111	221
Single-Family Residential	216 Units	2,112	40	121	161	135	79	214	110	93	203
Park/Open Space	7 Acres	11	0	0	0	0	0	0	1	1	2
Total Project Trips		25,857	505	476	981	1,371	1,214	2,585	1,566	1,373	2,937
Transit Adjustments²											
Retail (-1.8%)		-116	-2	-1	-3	-5	-6	-11	-8	-7	-15
Grocery Store (-1.8%)		-90	-2	-2	-4	-5	-5	-10	-6	-5	-11
Bookstore (-1.8%)		-95	-1	-1	-2	-5	-4	-9	-5	-5	-10
Restaurant (-1.8%)		-30	-2	-1	-3	-2	-1	-3	-3	-2	-5
Dinner Theater (-1.8%)		-29	0	0	0	-2	-1	-3	-2	-2	-4
Hotel		0	0	0	0	0	0	0	0	0	0
Health Spa (-1.8%)		-50	-1	-1	-2	-3	-3	-6	-2	-2	-4
Residential (Daily-3.1%, a.m. -3.7%, p.m. -3.6%, Sat -3.1%)		-65	-1	-4	-6	-5	-3	-8	-3	-3	-6
Total Transit Adjustments		-475	-9	-10	-20	-27	-23	-50	-29	-26	-55
Internal Trips											
Internal Trips		-5,807	-78	-78	-156	-259	-259	-518	-315	-315	-630
Pass-by Trips (33% of net retail trips) ³		-3,545	-53	-53	-106	-184	-184	-368	-217	-217	-434
New External Trips											
New External Trips		16,030	365	335	699	901	748	1,649	1,005	815	1,818
Transit Trips											
Retail (2.2%)		501	10	7	17	24	26	50	30	28	58
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)		80	2	5	7	6	4	10	4	4	8
Total Transit Trips		581	12	12	24	30	30	60	34	32	66

**Table 5.2-10
 Trip Generation**

Land Use	Amount	Trips Generated										
		Weekday	AM Peak Hour			PM Peak Hour			Saturday			
			In	Out	Total	In	Out	Total	In	Out	Total	
Alternative 3: Reduced Commercial Alternative A												
Retail	94 KSF	6,501	92	59	150	288	311	599	431	398	829	
Retail / Grocery Store	57 KSF	5,174	140	90	230	303	291	594	324	312	636	
Multi-Family Residential ¹	316 Units	2,050	32	127	159	124	67	191	91	78	169	
Single-Family Residential	270 Units	2,593	50	149	198	165	97	262	136	115	251	
Park/Open Space	7 Acres	11	0	0	0	0	0	0	1	1	2	
Total Project Trips		16,329	314	425	737	880	766	1,646	983	904	1,887	
Transit Adjustments												
Retail (-1.8%)		-117	-2	-1	-3	-5	-6	-11	-8	-7	-15	
Grocery Store (-1.8%)		-93	-2	-1	-3	-5	-6	-11	-8	-7	-15	
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1%)		-144	-3	-10	-13	-10	-6	-16	-7	-6	-13	
Total Transit Adjustments		-354	-7	-12	-19	-20	-18	-38	-23	-20	-43	
Internal Trips		-3,878	-36	-36	-71	-181	-181	-362	-241	-241	-481	
Pass-by Trips (40% of net retail trips)		-2,633	-53	-53	-105	-141	-141	-281	-166	-166	-331	
New External Trips		9,464	218	324	542	538	426	965	553	477	1,032	
Transit Trips												
Retail (2.2%)		143	2	1	3	6	7	13	9	9	18	
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)		176	4	12	16	13	7	20	9	7	16	
Total Transit Trips		319	6	13	19	19	14	33	18	16	34	

**Table 5.2-10
Trip Generation**

Land Use	Amount	Trips Generated										
		Weekday	AM Peak Hour			PM Peak Hour			Saturday			
			In	Out	Total	In	Out	Total	In	Out	Total	
Alternative 4: Reduced Commercial Alternative B												
Retail	44 KSF	3,953	58	37	95	173	188	361	262	242	504	
Retail / Grocery Store	57 KSF	5,174	140	90	230	303	291	594	324	312	636	
Multi-Family Residential ¹	316 Units	2,050	32	127	159	124	67	191	91	78	169	
Single-Family Residential	308 Units	2,927	56	169	225	186	109	295	154	131	285	
Park/Open Space	7 Acres	11	0	0	0	0	0	0	1	1	2	
Total Project Trips		14,115	286	423	709	786	655	1,441	832	764	1,596	
Transit Adjustments												
Retail (-1.8%)		-71	-1	-1	-2	-3	-3	-6	-5	-4	-9	
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1%)		-154	-3	-11	-14	-11	-6	-17	-8	-6	-14	
Total Transit Adjustments		-225	-4	-12	-16	-14	-9	-23	-13	-10	-23	
Internal Trips												
Internal Trips		-3,053	-29	-29	-58	-144	-144	-288	-193	-193	-386	
Pass-by Trips (50% of net retail trips)		-2,343	-52	-52	-103	-129	-129	-258	-146	-146	-291	
New External Trips		8,494	201	330	532	499	373	872	480	415	896	
Transit Trips												
Retail (2.2%)		87	1	1	2	4	4	8	6	5	11	
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)		189	4	13	17	14	8	22	9	8	17	
Total Transit Trips		276	5	14	19	18	12	30	15	13	28	

**Table 5.2-10
Trip Generation**

Land Use	Amount	Trips Generated										
		Weekday	AM Peak Hour			PM Peak Hour			Saturday			
			In	Out	Total	In	Out	Total	In	Out	Total	
Alternative 5: Multi-Family Alternative C												
Retail	118.5 KSF	7,583	106	67	173	336	364	700	503	464	967	
Retail / Grocery Store	56.5 KSF	5,174	140	90	230	303	291	594	324	312	636	
Retail / Bookstore	25 KSF	5,286	74	47	121	254	234	488	282	251	533	
Multi-Family Residential ¹	316 Units	2,050	32	127	159	124	67	191	91	78	169	
Single-Family Residential	250 Units	2,416	46	138	184	154	91	245	126	107	233	
Park/Open Space	7 Acres	11	0	0	0	0	0	0	1	1	2	
Total Project Trips		22,520	398	469	867	1,171	1,047	2,218	1,327	1,213	2,540	
Transit Adjustments												
Retail (-1.8%)		-136	-2	-1	-3	-6	-7	-13	-9	-8	-17	
Grocery Store (-1.8%)		-93	-2	-2	-4	-6	-5	-11	-6	-5	-11	
Bookstore (-1.8%)		-95	-1	-1	-2	-5	-4	-9	-5	-5	-10	
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1%)		-138	-3	-10	-13	-10	-6	-16	-7	-6	-12	
Total Transit Adjustments		-462	-8	-14	-22	-27	-22	-49	-27	-24	-50	
Internal Trips												
Internal Trips		-6,275	-56	-56	-111	-277	-277	-554	-332	-332	-665	
Pass-by Trips (32% of net retail trips)		-3,654	-65	-65	-129	-191	-191	-382	-229	-229	-458	
New External Trips		12,129	269	334	605	676	557	1,233	739	628	1,367	
Transit Trips												
Retail (2.2%)		397	7	5	12	19	20	39	24	23	47	
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)		170	4	11	15	13	7	20	8	7	15	
Total Transit Trips		567	11	16	27	32	27	59	32	30	62	
Alternative 6: Single Family Alternative												
Single-Family Residential	411 Units	3,817	74	223	297	241	142	383	204	173	377	
Park/Open Space	7 Acres	11	0	0	0	0	0	0	1	1	2	
Total Project Trips		3,828	74	223	297	241	142	383	205	174	379	
Transit Adjustments												
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1%)		-118	-3	-8	-11	-9	-5	-14	-6	-5	-12	
New External Trips		3,710	71	215	286	232	137	369	199	169	367	
Transit Trips												
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)		145	3	10	13	11	6	17	8	7	14	

**Table 5.2-10
 Trip Generation**

Land Use	Amount	Trips Generated										
		Weekday	AM Peak Hour			PM Peak Hour			Saturday			
			In	Out	Total	In	Out	Total	In	Out	Total	
Alternative 7: Existing General Plan and Zoning Alternative - Industrial												
Heavy Industrial (Manufacturing)	780 KSF	3,005	476	142	618	214	381	595	109	109	218	
Single-Family Residential	18 Units	215	3	10	13	14	9	23	9	8	17	
Total Project Trips		3,220	479	152	631	228	390	618	118	117	235	
Transit Adjustments²												
Industrial (-1.8%)		-54	-8	-3	-11	-4	-7	-11	-2	-2	-4	
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1%)		-7	0	0	0	-1	0	-1	0	0	-1	
Total Transit Adjustments		-61	-8	-3	-11	-5	-7	-12	-2	-2	-5	
New External Trips		3,159	471	149	620	223	383	606	116	115	230	
Transit Trips²												
Industrial (2.2%)		66	11	3	14	5	8	13	3	3	5	
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)		8	0	0	1	1	0	1	0	0	1	
Total Transit Trips		74	11	3	15	6	8	14	3	3	6	
Sources: Dowling Associates, Inc. 2008												
¹ The trip generation for the Saturday peak hour was based on the data for Low-Rise Apartments (ITE 221).												
² Transit adjustments and transit trips for industrial use, restaurant, theater, and health spa are assumed to be the same percentage as for retail use.												
³ Pass-by adjustments are not made for restaurant, theater, health spa, and hotel uses												
⁴ The number of seats in the dinner theater was calculated based on the proposed square footage of 42,435 and data for Quality Restaurant (ITE 931).												

Adjustments to the number of trips generated at the project site were made to account for transit ridership, internal trips, and pass-by trips. Because of the high level of transit service provided by the Regional Transit light rail line, with two nearby transit stations, an adjustment was made to the number of trips estimated to be made by automobile. The transit adjustment was based on information contained in the *Pre-Census Travel Behavior Report: Analysis of the 2000 SACOG Household Travel Survey* (DKS, 2001).

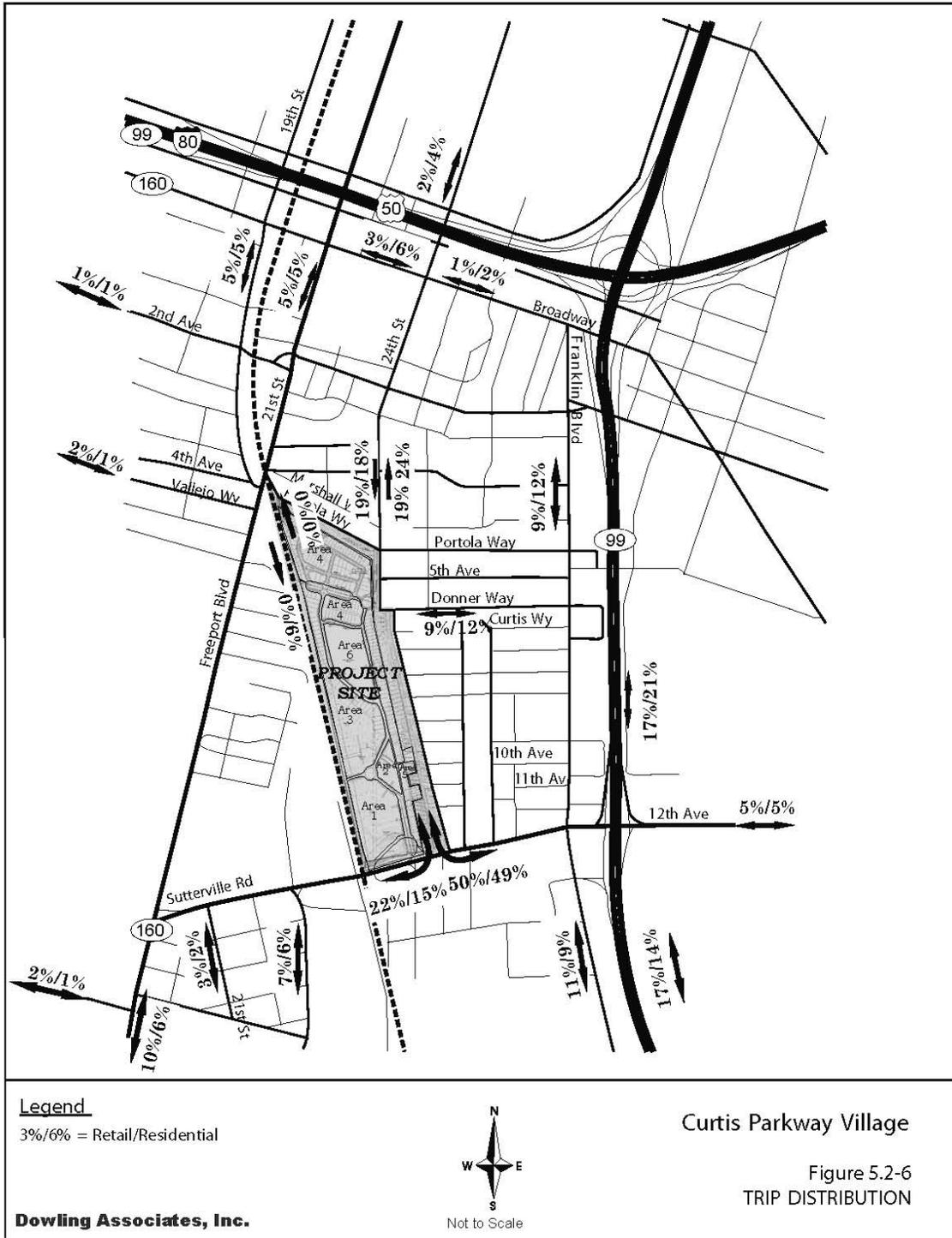
After the transit adjustment, an adjustment was made to account for internal trips between different types of land uses within the project site. The internal trip adjustment was performed using procedures recommended by the Institute of Transportation Engineers for multi-use developments (*Trip Generation Handbook*). Internal trips are trips that would occur between different land uses on the same site without accessing the external street system. Internal trips were included in the analysis of intersections within the project site but on the external street system. Further details on the internal trip calculations may be found in Appendix D.

Finally, adjustments were made to account for pass-by trips to the retail commercial land uses. Pass-by trips are trips that are already in the existing traffic stream that passes by the site and that would be attracted to the project when it is completed. These trips are included in the total count of traffic generated by the project and are included in the project driveway volumes, but are not included as new trips at intersections outside of the influence of the project driveways. At the Road A and Sutterville Road intersection, some of these trips will divert from one traffic movement to another, so appropriate adjustments need to be made at that location. The amount of a project's pass-by trips varies by type of land uses and the magnitude of existing traffic on the adjacent streets. Because the intensity of retail commercial land uses differ between the proposed project and the two project alternatives, the pass-by trip percentages also vary. The pass-by trips assumptions made in this report were derived from guidelines in ITE's *Trip Generation Handbook*.

Project Trip Distribution

The distribution of trips associated with the project site was derived from the SACMET 2027 travel demand model, observations of travel patterns near the site, and knowledge of the proposed access locations associated with the Project. The model zone within which the project is located was isolated and its peak hour trips were assigned to the network. From this selected zone assignment, the distribution of inbound and outbound trips was estimated. Figure 5.2-6 shows the estimated trip distribution percentages for retail and residential uses.

The distribution of trips for the Saturday peak hour was estimated by averaging the a.m. and p.m. peak hour trips assigned to the transportation network. From the selected zone assignment, the directional distribution of trips was estimated for 2027 conditions.



IMPACTS AND MITIGATION MEASURES

The standards of significance, methods of analysis, and traffic impacts and mitigation measures are summarized below.

Standards of Significance

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in a significant adverse impact on the environment.

For the purposes of this EIR/EIS, an impact is considered significant if the proposed project would have the effects described below.

The standards of significance in this analysis are based upon the current practice of the appropriate regulatory agencies. For most areas related to transportation and circulation, the standards of the City of Sacramento have been used. For traffic flow on the US 99 freeway system and associated interchanges, the standards of Caltrans have been used.

Intersections

In the City of Sacramento, a significant traffic impact occurs at a signalized or unsignalized intersection (except for freeway ramp/arterial intersections within North Natomas) when:

- The traffic generated by the project degrades peak period level of service (LOS) from A, B, or C (without the project) to D, E, or F (with the project); or,
- The level of service (without project) is D, E, or F and project generated traffic increases the average vehicle delay by 5 seconds or more.

These standards have been developed consistent with a goal set forth in the City of Sacramento, General Plan Update (1988). Specifically, Section 5-11 - Goal D, states to "Work towards achieving a Level of Service C on the City's local and major street system."

The City adopted the 2030 General Plan on March 3, 2009. The 2030 General Plan includes a policy to allow a LOS D (as opposed to the LOS C threshold described above). However, the traffic analysis evaluated the impact of the project using the existing LOS threshold C to be conservative.

Roadway Segments

In the City of Sacramento, a significant traffic impact occurs at a roadway segment when:

- The traffic generated by the project degrades peak period level of service (LOS) from A, B, or C (without the project) to D, E, or F (with the project); or,
- The level of service (without project) is D, E, or F and project generated traffic increases the volume/capacity ratio by 0.02 or more.

Freeway Ramps and Mainline

Caltrans considers the following to be significant impacts:

- Off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway.
- Project traffic increases that cause any ramp's merge / diverge level of service to be worse than the freeway's level of service.
- Project traffic increases that cause the freeway level of service to deteriorate beyond level of service "E."

In addition, a significant ramp impact would occur if the expected queue is greater than the storage capacity.

Bikeways

For the purposes of this EIR, impacts to bikeways are considered significant if the Proposed Project or its Alternatives would:

- Hinder or eliminate an existing designated bikeway, or interfered with implementation of a proposed bikeway; or
- Result in unsafe conditions for bicyclists, including unsafe bicycle/pedestrian or bicycle/motor vehicle conflicts.

Pedestrian Circulation

For the purposes of this EIR, impacts to pedestrian circulation are considered significant if the Proposed Project or its Alternatives would:

- Result in unsafe conditions or create a hindrance for pedestrians, including unsafe pedestrian/bicycle or pedestrian/motor vehicle access.

Transit System

For the purposes of this EIR, impacts to the transit system are considered significant if the Proposed Project or its Alternatives would:

- Increase ridership, when added to the existing or future ridership, would exceed available or planned system capacity. Capacity is defined as the total number of passengers the system of buses and light rail vehicles can carry during the peak hours of operations.

Traffic Circulation and Safety

For the purposes of this EIR, impacts to traffic circulation and safety are considered significant if the Proposed Project or its Alternatives would:

- Not comply with City design standards or normal traffic engineering practices.

Baseline Conditions

An analysis of baseline plus project conditions was performed to determine the potential traffic impacts of the Proposed Project in combination with other projects that have already been approved. The Freeport Boulevard/ 21st Street Two-Way Conversion Project, which involved conversion of the one-way portion of Freeport Boulevard and 21st Street to two-way roadways, has recently been implemented. However, because traffic volumes were collected prior to the completion of the project, the Freeport Boulevard/21st Street Two-Way Conversion Project is included as a baseline project.

The Sutterville Road Bypass ramps will be reconfigured as a part of the Proposed Project. It is assumed that the existing bypass traffic will be diverted onto the project site by utilizing the Proposed Project's southern access points. The bypass traffic volumes are taken into account in the baseline conditions analysis. According to a 24-hour vehicle classification survey conducted on September 26, 2007, 476 vehicles and 378 vehicles traveled on the westbound bypass on-ramp and off-ramp, respectively, including 7 trucks entering the on-ramp and 11 trucks utilizing the off-ramp.

The City commissioned a study to assess the feasibility of providing direct connections between the north side and the south side of Sutterville Road near the project site. The study, which is included in the appendix of this report, concluded that the desirable linkage can be achieved through realignment of Pacific Avenue with the proposed Road A to form a standard four-legged intersection at Sutterville Road. The provision of direct access would eliminate the need for existing bypass traffic to divert onto the project site. The realignment of Pacific Avenue requires right-of-way acquisition and changes to the existing street network. This EIR does not assume the realignment of Pacific Avenue would occur but does address the implications of realignment.

For the baseline conditions, full development of the Proposed Project (and the alternatives) is assumed to occur "instantaneously." In this manner, the traffic and impacts associated with the project and other approved projects can be directly compared to known and measured conditions.

The analysis of baseline conditions was performed using the TRAFFIX traffic impact analysis software package. Traffic volumes from the Proposed Project were added to the baseline traffic volumes based on the trip generation and distribution procedures described above. Project traffic was assigned to the transportation network based on the shortest path. The resulting traffic volumes were used to analyze intersection and freeway interchange levels of service. Traffic volumes for baseline conditions are shown in Appendix D.

**Table 5.2-11
Intersection Levels of Service for Access Scenarios – Baseline Conditions**

Intersection	Traffic Control	Peak Hour	Scenario 0: No Project		Scenario 1: Proposed Project		Scenario 2: Two Northeast Connections		Scenario 3: 10th & 11th Ave. Connections	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
1. 24th St / Broadway	Signal	AM	B	14.1	B	14.4	B	14.4	B	14.4
		PM	B	17.9	B	18.3	B	18.3	B	18.3
		Saturday	B	10.6	B	11.7	B	11.7	B	11.7
2. Freeport Bl / 2nd Av	Signal	AM	B	20.0	C	20.3	C	20.3	C	20.3
		PM	D	36.2	D	41.4	D	41.4	D	41.4
		Saturday	B	16.7	B	17.3	B	17.3	B	17.3
3. 21st St / 2nd Av	Signal	AM	A	9.2	A	9.8	A	9.8	A	9.8
		PM	A	9.6	B	10.5	B	10.5	B	10.5
		Saturday	A	8.8	A	9.9	A	9.9	A	9.9
4. 24th St / 2nd Av	4-Way Stop	AM	B	11.0	B	12.4	B	12.5	B	12.4
		PM	C	15.1	C	20.5	C	20.5	C	20.5
5. 21st St / 4th Av	Stop Sign	AM	A	1.6	A	1.7	A	1.7	A	1.7
		PM	A	0.7	A	1.2	A	1.2	A	1.2
		Saturday	A	1.0	A	1.6	A	1.6	A	1.6
6. Freeport Bl / 21st St	Signal	AM	B	16.7	C	16.9	C	17.0	C	17.0
		PM	C	21.6	C	22.1	C	22.1	C	22.1
		Saturday	B	17.2	C	17.8	C	17.8	C	17.8
7. Freeport Bl / Vallejo Wy	Signal	AM	A	9.1	A	9.2	A	9.2	A	9.2
		PM	A	4.8	A	5.3	A	5.3	A	5.3
		Saturday	A	6.4	A	7.0	A	6.8	A	6.8
8. 24th St / Portola Wy	4-Way Stop	AM	A	9.1	B	10.1	B	10.1	B	10.1
		PM	B	11.9	C	18.7	C	18.8	C	18.8
9. 24th St / 5th Av	Stop Sign	AM	A	0.7	A	0.9	A	1.5	A	0.9
		PM	A	0.3	A	1.1	A	1.5	A	1.1
10. 24th St / Donner Wy	Stop Sign	AM	A	0.7	A	3.8	A	3.3	A	3.7
		PM	A	3.2	A	6.2	A	6.2	A	6.2
11. Franklin Bl / 5th Av	Signal	AM	A	5.6	A	5.7	A	5.7	A	5.7
		PM	A	6.4	A	6.6	A	6.6	A	6.6
		Saturday	A	5.0	A	4.7	A	4.7	A	4.7
12. 24th St / 10th Av	Stop Sign	AM	A	0.1	A	0.3	A	0.3	A	2.0
		PM	A	0.2	A	1.2	A	1.2	A	3.2

**Table 5.2-11
Intersection Levels of Service for Access Scenarios – Baseline Conditions**

Intersection	Traffic Control	Peak Hour	Scenario 0: No Project		Scenario 1: Proposed Project		Scenario 2: Two Northeast Connections		Scenario 3: 10th & 11th Ave. Connections	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
13. 24th St / 11th Av	Stop Sign	AM	A	0.3	A	0.7	A	0.7	A	0.7
		PM	A	0.2	A	1.5	A	1.4	A	1.3
14. Sutterville / Freeport (North)	Signal	AM	C	21.8	C	22.0	C	22.0	C	22.0
		PM	B	17.8	B	18.6	B	18.6	B	18.6
		Saturday	B	15.2	B	15.8	B	15.8	B	15.8
15. Sutterville / 21st St	Signal	AM	A	9.0	A	9.1	A	9.1	A	9.1
		PM	A	6.0	A	6.2	A	6.2	A	6.2
		Saturday	A	5.1	A	5.1	A	5.1	A	5.1
16. Sutterville / City College Drive	Signal	AM	C	20.4	C	21.4	C	21.4	C	21.4
		PM	C	23.7	C	27.5	C	27.5	C	27.5
		Saturday	B	10.9	B	14.8	B	14.8	B	14.8
17. Sutterville / Road A	Signal or Stop Sign ³	AM	A	0.6	B	17.9	B	18.0	B	17.6
		PM	A	0.3	F	86.9	F	86.9	F	84.6
		Saturday	A	0.3	C	32.6	C	32.5	C	31.6
18. Sutterville / 24th St	Stop Sign or Signal ⁴	AM	A	8.7	A	0.1	A	0.1	A	0.1
		PM	B	13.7	A	0.0	A	0.0	A	0.0
		Saturday	A	6.5	A	0.1	A	0.1	A	0.1
19. Sutterville / Curtis Dr West	Stop Sign	AM	A	0.3	A	0.4	A	0.4	A	1.5
		PM	A	0.5	A	0.5	A	0.5	A	0.7
		Saturday	A	0.7	A	1.0	A	1.0	A	1.5
20. Sutterville / Franklin Bl	Signal	AM	C	28.0	C	29.8	C	29.8	C	29.8
		PM	C	24.9	C	29.5	C	29.5	C	29.5
		Saturday	C	24.2	C	24.5	C	24.5	C	24.5
21. Sutterville / SR 99 SB Ramp	Signal	AM	C	27.1	C	30.2	C	30.2	C	30.2
		PM	C	28.2	E	57.8	E	57.8	E	57.8
		Saturday	C	33.4	E	68.0	E	68.0	E	68.0
22. Sutterville / SR 99 NB Ramps	Signal	AM	B	17.3	B	19.2	B	19.2	B	19.2
		PM	B	19.0	C	22.6	C	22.6	C	22.6
		Saturday	C	20.0	C	27.0	C	27.0	C	27.1

**Table 5.2-11
Intersection Levels of Service for Access Scenarios – Baseline Conditions**

Intersection	Traffic Control	Peak Hour	Scenario 0: No Project		Scenario 1: Proposed Project		Scenario 2: Two Northeast Connections		Scenario 3: 10th & 11th Ave. Connections	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
23. Sutterville / Freeport (South)	Signal	AM	C	22.4	C	22.7	C	22.7	C	22.7
		PM	C	23.8	C	24.7	C	24.7	C	24.7
		Saturday	C	22.9	C	23.0	C	23.0	C	23.0
24. Road A / DonnerWy / Road G	Signal	AM	na	na	A	8.3	A	8.1	A	8.2
		PM	na	na	A	4.9	A	4.8	A	4.9
		Saturday	na	na	A	4.6	A	4.3	A	4.6
25. Road A / Road E	Stop Sign	AM	na	na	A	0.4	A	0.4	A	0.4
		PM	na	na	A	0.1	A	0.1	A	0.1
		Saturday	na	na	A	0.3	A	0.3	A	0.3
26. Road A / Area 3	Stop Sign	AM	na	na	A	4.0	A	4.0	A	3.7
		PM	na	na	D	28.9	D	33.3	D	32.7
		Saturday	na	na	A	8.6	A	9.3	A	9.1
27. Road A / Road C	Round- about	AM	na	na	A	4.1	A	4.1	A	4.0
		PM	na	na	A	7.6	A	7.8	A	7.7
		Saturday	na	na	A	4.7	A	4.8	A	4.7
28. Road A / Area 1	Signal	AM	na	na	A	4.7	A	4.8	A	4.8
		PM	na	na	C	26.8	C	31.9	C	30.0
		Saturday	na	na	B	10.7	B	12.8	B	11.5
29. Road A / Area 2	Stop Sign	AM	na	na	A	0.9	A	0.9	A	0.9
		PM	na	na	A	7.2	A	7.9	A	7.5
		Saturday	na	na	A	4.2	A	4.4	A	4.3
30. Franklin Bl / 5 th Av (South)	Stop Sign	AM	A	0.3	A	0.5	A	0.7	A	0.5
		PM	A	0.2	A	1.0	A	1.0	A	1.0
		Saturday	A	0.5	A	1.3	A	1.3	A	1.3

Source: Dowling Associates, 2008

¹ LOS denotes level of service.

² Delay represents average seconds of delay per vehicle.

³ Existing Ramp is controlled by a yield sign; New Road A will be signalized.

⁴ Existing intersection is signalized; the Project would convert the intersection to stop sign control.

Shaded and bold values indicate a potential significant impact.

A summary of intersection operations for baseline conditions is provided in Table 5.2-11 for the Proposed Project and access scenarios.

5.2-1 Impacts to study intersections under baseline plus project conditions.

The Proposed Project and all access scenarios would increase traffic volumes at study area intersections and would cause significant impacts under baseline plus project conditions at the following intersections:

- (a) Freeport Boulevard / 2nd Avenue – the intersection would operate at substandard level at LOS D with and without traffic from the Proposed Project, Access Scenario 2, and Access Scenario 3 during the p.m. peak hour. However, traffic from the Proposed Project and all the access scenarios would cause the average delay to increase by more than five seconds. This is considered a *significant impact*.
- (b) Sutterville Road / Road A – traffic from the Proposed Project, Access Scenario 2, and Access Scenario 3 would degrade the level of service to LOS F during the p.m. peak hour. This is considered a *significant impact*.
- (c) Sutterville Road / SR 99 Southbound Ramps – traffic from the Proposed Project and all access scenarios would cause traffic operations to drop from LOS C to LOS E during the p.m. and Saturday peak hours. This is considered a *significant impact*.
- (d) Road A / Area 3 – the intersection would operate at LOS D under the Proposed Project and all access scenarios during the p.m. peak hour. This is considered a *significant impact*.

If the realignment of Pacific Avenue is implemented, the Sutterville Road / Road A / Pacific Avenue intersection would operate within City standard at LOS C during both peak hours under Baseline conditions.

Mitigation Measures

- 5.2-1(a) *At the Freeport Boulevard / 2nd Avenue intersection, provide protected left-turn phasing for the northbound and southbound approaches. This mitigation measure would reduce the impact of the Proposed Project and Access Scenarios 2 and 3 to a less than significant level.*
- 5.2-1(b) *At the Sutterville Road / Road A intersection, provide overlap signal phasing to allow the southbound Road A right turning traffic to proceed on a green arrow simultaneously with the eastbound left turning movement, and prohibit U-turns for the eastbound left turning movement; add a southbound left-right lane to provide one left-turn lane, one left-right lane, and one right turn lane, and provide a dedicated right turn lane for the westbound Sutterville Road approach to the intersection. This mitigation measure would reduce the*

*impact of the Proposed Project and Access Scenarios 2 and 3 to a **less than significant** level.*

- 5.2-1(c) *Modify the southbound approach to the Sutterville Road / SR99 SB Ramps intersection to provide a left-turn lane, a combination left-throughlane, and two right-turn lane. This change would bring the right-turning movements under traffic signal control. This mitigation measure is required at five percent of development based on trip generation. The design of the mitigation is subject to the approval of the City Transportation Department and Caltrans. This mitigation measure would reduce the impact of the Proposed Project and all access scenarios to a **less than significant** level during the p.m. and Saturday peak hours.*
- 5.2-1(d) *At the Road A / Area 3 intersection, provide separate right-turn and left-turn lanes on the eastbound approach. This mitigation measure would reduce the impact of the Proposed Project and Access Scenarios 2 and 3 to a **less than significant** level.*

A summary of traffic operations on roadway segments for baseline conditions is provided in Table 5.2-12 for the Proposed Project and access scenarios.

5.2-2 Impacts to study roadway segments under baseline plus project conditions.

The Proposed Project and all access scenarios would add traffic to roadway segments. During the weekday, the Sutterville overcrossing roadway segment would operate at LOS D without the project and the project would cause the v/c ratio to increase by more than 0.02. The project would also cause the level of service of the roadway segment on Sutterville Road between E. Curtis Drive and W. Curtis Drive to drop from LOS C to LOS E during the p.m. peak hour and from LOS A to LOS D during Saturday peak hour. These are considered **significant impacts**.

Mitigation Measures

No mitigation was identified to reduce the significant impact for baseline conditions on roadway segments to less than significant. To reduce the impact to less than significant would require widening Sutterville Road. That mitigation is not considered to be feasible. The following mitigation measure is proposed to help reduce the impact on roadway segments, although the impact after mitigation would remain **significant and unavoidable**.

- 5.2-2(a) *The project developer shall work with the Regional Transit District to provide bus service or provide private shuttle service from 6:00 to 9:00 a.m. and from 4:00 to 7:00 p.m. between the commercial areas of the project site and the City College light rail station. As an alternative, the project developer shall coordinate with the City to reserve the required right of way needed to construct a pedestrian and bicycle bridge to provide access to the City College Station.*

**Table 5.2-12
Roadway Levels of Service for Project Scenarios – Baseline Conditions**

Roadway Segment	Lanes	Alternative 1: No Project			Scenario 1: Proposed Project			Scenario 2: 5th Ave. Connections			Scenario 3: 10th Ave. Connections		
		ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³
Weekday													
Sutterville Rd RR Overcrossing	4	28,864	D	0.80	31,692	D	0.88	31,697	D	0.88	31,697	D	0.88
Sutterville Rd btw E. Curtis Dr & W. Curtis Dr	4	27,346	C	0.76	32,967	E	0.92	32,991	E	0.92	33,009	E	0.92
24th St north of 10th Avenue	2	3,690	A	0.42	736	A	0.08	751	A	0.09	736	A	0.08
24th St btw Portola Wy & Marshall Wy	2	3,685	A	0.42	5,288	B	0.60	5,296	B	0.61	5,296	B	0.61
Donner Wy btw 24th St & 25th St	2	636	A	0.13	1,302	A	0.26	1,217	A	0.24	1,277	A	0.26
Freeport Bl north of 21st St	2	10,654	C	0.71	10,970	C	0.73	10,970	C	0.73	10,970	C	0.73
21st St north of 4th Ave	3	12,140	A	0.54	12,632	A	0.56	12,637	A	0.56	12,642	A	0.56
Portola Wy btw 21st St & 24th St	2	481	A	0.10	485	A	0.10	485	A	0.10	485	A	0.10
Marshall Wy btw 21st St & 24th St	2	778	A	0.16	1,005	A	0.20	1,005	A	0.20	1,005	A	0.20
4th Ave btw 21st St & 24th St	2	632	A	0.13	632	A	0.13	632	A	0.13	632	A	0.13
3rd Ave btw 21st St & 24th St	2	360	A	0.07	360	A	0.07	360	A	0.07	360	A	0.07
24th St just south of Donner Wy	2	1,799	A	0.21	709	A	0.08	723	A	0.08	709	A	0.08
10th Ave just east of 24th St	2	94	A	0.02	94	A	0.02	94	A	0.02	299	A	0.06
11th Ave just east of 24th St	2	98	A	0.02	98	A	0.02	98	A	0.02	98	A	0.02
5th Ave just east of 24th St	2	401	A	0.08	1,257	A	0.25	1,373	A	0.27	1,257	A	0.25
W. Pacific Ave north of Wilmington Ave	2	1,311	A	0.26	3,034	B	0.61	3,034	B	0.61	3,034	B	0.61
E. Pacific Ave just north of Wilmington Ave	2	633	A	0.13	633	A	0.13	633	A	0.13	633	A	0.13
Road A north of Road G	2				5,057	A	0.58	5,030	A	0.57	5,060	A	0.58
Road A north of Road E	2				4,596	A	0.53	4,593	A	0.52	4,593	A	0.52
Road A north of Area 3	2				4,647	A	0.53	4,650	A	0.53	4,650	A	0.53
Road A north of Road C	2				5,612	B	0.64	5,608	B	0.64	5,450	B	0.62
Road A north of Area 2	2				6,109	B	0.70	6,109	B	0.70	5,951	B	0.68
Road A north of Area 1	2				6,288	C	0.72	6,288	C	0.72	6,126	C	0.70

**Table 5.2-12
 Roadway Levels of Service for Project Scenarios – Baseline Conditions**

Roadway Segment	Lanes	Alternative 1: No Project			Scenario 1: Proposed Project			Scenario 2: 5th Ave. Connections			Scenario 3: 10th Ave. Connections		
		ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³
Road A north of Sutterville Road	4				8,429	A	0.48	8,460	A	0.48	8,268	A	0.47
Saturday													
Sutterville Rd RR Overcrossing	4	21,692	B	0.60	28,332	C	0.79	28,332	C	0.79	28,332	C	0.79
Sutterville Rd btw E. Curtis Dr and W. Curtis Dr	4	20,009	A	0.56	29,245	D	0.81	29,270	D	0.81	29,270	D	0.81
Freeport Blvd north of 21st St	2	8,073	A	0.54	8,685	A	0.58	8,685	A	0.58	8,696	A	0.58
21st St north of 4th Av	3	8,729	A	0.39	9,751	A	0.43	9,738	A	0.43	9,751	A	0.43
<p>Source: Dowling Associates, Inc., 2008. Note: ¹ADT = Averaged daily traffic ²LOS = Level of service ³V/C = Volume/Capacity Shaded values indicate a potential significant impact.</p>													

A summary of freeway ramp operations for baseline conditions is provided in Table 5.2-13 and a summary of vehicle queues at the SR 99 interchange ramps is provided in Table 5.2-14. Traffic operations and queuing on the freeway ramps for the all access scenarios would be the same as for the Proposed Project.

Ramp	Peak Hour	No Project			Proposed Project		
		LOS ¹	Density	Volume	LOS ¹	Density	Volume
Northbound SR 99							
12th Ave. Off-Ramp	AM	C	27.54	378	D	28.07	439
	PM	C	24.64	450	C	26.00	602
	Saturday	C	25.73	390	C	27.23	561
12th Ave. On-Ramp	AM	C	24.75	934	C	24.83	997
	PM	C	22.10	852	C	22.40	983
	Saturday	C	23.81	942	C	24.06	1,087
Southbound SR 99							
12th Ave. Off-Ramp	AM	C	24.55	1,034	C	25.15	1,100
	PM	D	33.79	1,260	E	35.21	1,421
	Saturday	D	30.97	1,116	D	32.54	1,295
12th Ave. On-Ramp	AM	B	16.34	201	B	16.53	255
	PM	C	22.97	238	C	23.17	366
	Saturday	C	21.91	395	C	22.19	533

Source: Dowling Associates, Inc. 2008.
¹ LOS = Level of Service

Location	Peak Hour	Storage Capacity (ft)	No Project		Proposed Project	
			Queue (ft) ¹	Adequate Capacity	Queue (ft) ¹	Adequate Capacity
SR 99 SB Off-ramp to Sutterville Rd.	AM	765	625	Yes	775	No
	PM		875	No	1,425	No
	Saturday		825	No	1,375	No
SR 99 NB Off-ramp to Sutterville Rd.	AM	510	175	Yes	250	Yes
	PM		275	Yes	325	Yes
	Saturday		250	Yes	350	Yes

Source: Dowling Associates, Inc., 2008
Note: Shaded values indicate a potential significant impact.
¹ Based on 95th percentile queue length

5.2-3 Impacts to freeway ramps under baseline plus project conditions.

The Proposed Project and all access scenarios would cause the traffic queue from the traffic signal at the southbound 12th Avenue off-ramp to exceed the right-turn storage capacity of the ramp. This is considered a *significant impact*.

Mitigation Measure

Implementation of Mitigation Measure 5.2-1(c) would reduce the traffic queue at the southbound 12th Avenue off-ramp for baseline conditions for the Proposed Project and all access scenarios. However, the reduction would not be sufficient to fully mitigate the project impacts and no other feasible mitigation measure was identified. Therefore, the impact shall remain *significant and unavoidable*.

5.2-4 Impacts to bicycle system under baseline plus project conditions.

The Proposed Project and all access scenarios would result in an increase in bicycle trips in the study area by residents and visitors. However, the project is not anticipated to hinder or eliminate the existing bikeways or interfere with the implementation of the planned bikeways in the study area. The development would result in enhanced bicycle connectivity between the existing Curtis Park neighborhood to the north and east of the project site. Pedestrian and bicycle connections would be provided along the eastern edge of the project at 10th Avenue, Donner Way, and 5th Avenue.

Mitigation Measure

No mitigation would be required for the Proposed Project or any of the access scenarios.

5.2-5 Impacts to pedestrian circulation under baseline plus project conditions.

The Proposed Project and all access scenarios would result in an increase in pedestrian trips in the study area by residents and visitors. However, the project is not anticipated to result in unsafe condition for pedestrians, including unsafe pedestrian/bicycle or pedestrian/motor vehicle conflict. All streets within the proposed site would be designed in accordance to the City's "Pedestrian Friendly Street Standards" that would provide for pedestrian needs and enhance connectivity with existing City streets.

Mitigation Measure

No mitigation would be required for the Proposed Project or any of the access scenarios.

5.2-6 Impacts to transit system under baseline plus project conditions.

The Proposed Project and all access scenarios would result in an increase demand for transit service. The development is anticipated to generate up to 581 daily transit trips including 24 (12 inbound and 12 outbound) in the AM peak hour, 60 (30 inbound and 30 outbound) in the PM peak hour, and 66 (34 inbound and 32 outbound) in the Saturday peak hour. This level of transit usage is not expected to exceed the capacity of the available/planned transit system in the study area. The study area is well served by three Regional Transit bus routes, Route 62, 63, and 83, and a light rail line with stations at north and south ends of the project.

The 4th Avenue / Wayne Hultgren light rail station is accessible by pedestrians from the project site via the Portola connector to 4th Avenue. Pedestrian access from the project site to the City College light rail station is not readily available. Pedestrians are prohibited from using the Sutterville Road overcrossing and cannot cross the railroad tracks along the west edge of the project site.

Despite the lack of pedestrian connections to the south end of the project, the City College Station may be accessed via bus services. Regional Transit District has agreed to relocate Route 63, currently travel along 24th Street, to Road A, the main north-south street on the project site. The relocation would not only provide convenience to the Project but also improve the overall bus transit network in the area. Bus stops would be provided at 10th Avenue, Donner Way and 5th Avenue. The impact of the project and all access scenarios would be *less than significant*.

Mitigation Measure

No mitigation would be required.

5.2-7 Impacts to on-site traffic circulation and safety under baseline plus project conditions.

The Proposed Project and all access scenarios would require development of a street system to serve motor vehicles, transit service, bicyclists, and pedestrians.

A roundabout is proposed in the project site at the Road A intersection with Road C in the retail commercial area. Although the roundabout does not have balanced traffic volumes as generally recommended for roundabout installation, it would operate well below capacity and would provide adequate functionality and comparable safety to other control options. Therefore, the roundabout would create a *less than significant impact*.

On-site roadways would be classified in two categories, with different center line radius standards, in accordance to City of Sacramento's Street Design Guidelines. All roads in the commercial area would be minor collector streets and would be required to have a 600-foot radius according to the City's guidelines. All streets in the residential areas would be residential streets, with a 250-foot radius standard. The horizontal roadway curvatures at the following locations do not meet the City's center line radius standards:

1. Road A just north of Area 1 driveway
2. 10th Avenue connector road north of Area 2 between Road A and the Alley
3. Road A just north of Area 3 driveway
4. Bend between Road B and Road C west of Road C roundabout
5. Road G at Road H
6. Road G just west of Road A

The layout of these roadways would not comply with City design standards or normal traffic engineering practices. Therefore the sharp roadway curvatures are considered a ***potentially significant impact***.

The site plan appears to show Road J as a two-way street between Road H and the narrow alley at the north edge of the project site and the project description states that the alley will be widened to full residential street standard and extended to link with Portola Way. Northbound left-turn from Portola Way is currently prohibited at the intersection of Portola Way, Marshall Way and 4th Avenue because of potential safety issue due to its close proximity to the 21st Street intersection; however, illegal turns can still be made physically. The project would potentially add traffic to this intersection and increase the number of illegal movement. This would be considered a ***potentially significant impact***.

The site plan shows angle parking along Road A and Road C that would require vehicles leaving some of the parking stalls to back across pedestrian crosswalks. This type of design would not comply with City design standards or normal traffic engineering practices and would be considered a ***potentially significant impact***.

Mitigation Measure

The following mitigation measure would be required for the Proposed Project and all of the access scenarios to reduce the potentially significant impacts for baseline conditions to a ***less than significant*** level.

- 5.2-7(a) *The design plans for the project shall be consistent with City standards. Any deviations are subject to the approval of the City Department of Transportation, Traffic Engineering Division. The horizontal curvatures shall be realigned or design elements such as “knuckles” shall be installed in compliance with City standards.*
- 5.2-7(b) *The project applicant shall modify the design at the intersection of the Road J extension/Portola Way, 4th Avenue, and Marshall Way to physically prohibit the northbound left-turning movement from the Road J extension/Portola Way.*
- 5.2-7(c) *The site design shall be modified to reduce the potential for vehicles leaving parking stalls to back across pedestrian crosswalks. This change may require the elimination of some angle parking spaces.*

5.2-8 Impacts to on-site vehicle and bicycle parking capacities

Based on the generally-applicable provisions of the City’s Zoning Code, the proposed project Land Use would be expected to provide a minimum of 1,075 parking spaces for the commercial area and 640 spaces for the residential units. Further, the City’s Zoning Code Section 17.64.050 also typically requires new and expanded developments to

provide one bicycle parking space for every ten required vehicle parking spaces, which translate to a requirement of 172 bicycle parking spaces.

The calculation for vehicle parking space requirement considers the two restaurants as a part of the retail center as explicitly allowed in the Zoning Code. No adjustment was made to take into account internal trips that occur between land uses within the project site. For instance, the full number of required parking spaces for the restaurants is included even though the restaurants were intended to be used by non-project related patrons as well as residents of the housing units. It is reasonable to expect residents would walk to the restaurants; therefore, the parking requirement for the restaurant may exceed the likely demand.

The Zoning Code does not have a specific category for Senior Housing. Therefore, the space requirement for these residential units is considered to be the same as Multi-Family units even though seniors generally own fewer vehicles than the general population. Therefore, the analysis tends to be conservative. The City's parking requirement is summarized in Table 5.2-15.

Commercial: The Proposed Project includes a total of 983 parking spaces in the commercial areas. This results in a deficit of 92 spaces in the commercial areas. Therefore, the Proposed Project would not comply with the City's Zoning Code requirement.

Residential: Each single family unit is assumed to include a dedicated parking garage that would house a minimum of one parking space. Therefore, the proposed parking supply is expected to adequately meet the 183 space requirement for this type of land use. However, the proposed parking for both the senior housing and the multi-family units are fewer than the Code requirement. The Zoning Code requires a total of 125 spaces for the senior housing units and 332 spaces for the multi-family dwelling units; while only 53 spaces and 320 spaces are proposed for each, respectively. As such, the total shortfall of residential parking requirement is 84 spaces. Therefore, the Proposed Project would not comply with the City's Zoning Code requirement.

The Curtis Park Development Guidelines (PUD), proposed to provide parking space per 3 seats for the restaurants, one space per two units for the senior housing units and one space per 3 seats of the Dinner Theater. Therefore, the shortage in number of parking spaces according to the proposed PUD guidelines shall be 91 parking spaces

The City off-street parking requirements are intended for single-use developments and do not take into account the mixed-use nature of the proposed Curtis Park Village project, where the different uses, except for the single family homes, could share the same parking spaces because of varying parking demand during a given day. A shared parking analysis was performed to determine the maximum number of spaces required at Curtis Park Village during the peak parking demand hour on typical weekday and weekend during the year. The shared parking analysis, provided in Appendix D, was based on guidance developed by ITE and the Urban Land Institute.

**Table 5.2-15
Parking Requirements**

Description	Code Requirement	Amount		Required No. of Spaces	Proposed No. of Spaces	Overage/ Shortfall
Commercial/Retail Uses						
Retail (Shopping Center & Restaurants)	1 space per 250 sq ft	227,000	sq ft	908		
Dinner Theatre	1 space per 3 seats	502 ²	seats	167		
Total Commercial/Retail Uses				1,075	983	<92>
Residential Uses						
Single Family Dwellings	1 space per unit	183	units	183	183¹	
Multi-Family Dwellings	1.5 spaces per unit & 1 guest space per 15 units	212	units	332	320	
Senior Adult Housing	1.5 spaces per unit & 1 guest space per 15 units	80	units	125	53	
Total Residential Uses				640	556	<84>
Total Parking				1,715	1,539	<176>

¹ Minimum number of spaces provided in individual garages

² Number of seats in the dinner theater is calculated based on the proposed square footage of 38,000 and data in ITE *Trip Generation*.

The findings indicate that the peak parking demand for shared parking spaces at Curtis Park Village is 1,182 spaces and would occur between 7:00 pm and 8:00 pm on a typical December weekend evening. This does not include the parking demand from the single-family homes as their requirements are assumed to be fulfilled by the individual garage provided for each unit.

Since the proposed parking supply, excluding that of the single-family homes, is 1,356 spaces, the maximum parking demand would be accommodated, resulting in a *less than significant* impact.

Mitigation Measure

No mitigation would be required.

5.2-9 Impacts during construction

The project would be constructed over a multi-year period. Construction would include numerous disruptions to the transportation system in and around the project area, including temporary street closures and sidewalk closures. Heavy vehicles would access the project area and would need to be staged for construction. Short-term construction activities and staging of construction vehicles and equipment would result in degraded roadway operations.

Import Clean Fill Material: Under the existing Remedial Action Plan (RAP), Curtis Park Village (CPV) has off-hauled 80,000 cubic yards of material, and 80,000 CY of clean fill material is to be imported to bring the site back to original grade. In addition, CPV will need to import approximately 120,000 cubic yards of clean fill material to address the future remediation activity considered in this environmental document.

There will likely be multiple sources for this material. Therefore, different quantities of material will be imported at different times. One likely source of clean fill material will be property currently owned by Petrovich Development Company in Yolo County (located approximately 22 miles from CPV; if necessary the full 120,000 CY of material can be excavated from this site). Clean fill material from this property would be excavated and transported via truck to Curtis Park Village. The likeliest route trucks would take to deliver the material would be Southbound 99 (or Northbound 99), exiting Sutterville Road and traveling West, then making a right onto the Western Pacific Loop and immediately entering the site to the north.

It is estimated that it will take approximately 13 weeks to move 120,000 CY of material onsite. It is likely that multiple sources of material will provide approximately 40,000 cubic yards at a time, within a 22 mile radius of the site. Therefore, it is reasonable to assume that there will be three separate hauling operations that will take approximately one month each to complete. Each hauling operation would involve approximately 2,667 truck trips over the course of a one month period. The hauling would likely occur between April and October.

Project construction activities including the import of the clean fill material could result in impacts to vehicle and pedestrian access in and around the project area, resulting in a *potentially significant* impact.

Mitigation Measure

The following mitigation measure would be required for the Proposed Project and all of the access scenarios to reduce the potentially significant impacts to a *less than significant* level.

- 5.2-9(a) *Before issuance of grading permits for the project site, the project applicant shall prepare a detailed Traffic Management Plan that will be subject to review and approval by the City Department of Transportation, Regional Transit, and local emergency service providers, including the*

City of Sacramento fire and police departments. The plan shall ensure maintenance of acceptable operating conditions on local roadways and transit routes. At a minimum, the plan shall include:

- *The number of truck trips, time, and day of street closures*
- *Time of day of arrival and departure of trucks*
- *Limitations on the size and type of trucks; provision of a staging area with a limitation on the number of trucks that can be waiting*
- *Provision of a truck circulation pattern*
- *Provision of a driveway access plan to maintain safe vehicular, pedestrian, and bicycle movements (e.g., steel plates, minimum distances of open trenches, and private vehicle pick up and drop off areas)*
- *Safe and efficient access routes for emergency vehicles*
- *Efficient and convenient transit routes*
- *Manual traffic control when necessary*
- *Proper advance warning and posted signage concerning street closures*
- *Provisions for pedestrian safety*
- *Provisions for temporary bus stops, if necessary*

A copy of the construction traffic management plan shall be submitted to local emergency response agencies and these agencies shall be notified at least 14 days before the commencement of construction that would partially or fully obstruct roadways.

Cumulative Conditions

The analysis of transportation and circulation under cumulative conditions focuses on year 2027 conditions. The discussion below addresses project impacts that differ from the impacts previously addressed for baseline conditions with regard to intersection operations, freeway operations, and transit service. The project would not cause additional cumulative impacts beyond those already identified for baseline conditions in the areas of bikeways, pedestrian circulation, parking, and traffic circulation and safety.

Cumulative conditions were analyzed to determine the effect of the project in combination with the effects of build-out of the surrounding community. Cumulative traffic volumes were derived from the SACMET 2027 model. This model reflects approved land use changes in the project area. The traffic volume forecasts for cumulative conditions assume full build-out of the community, which is likely to be a conservative assumption.

Traffic forecasts for the 2027 a.m. and p.m. peak hours for no project conditions were produced by the SACMET model to serve as the basis for the cumulative traffic analysis. Cumulative Saturday peak hour traffic volumes were developed by applying factors to the cumulative a.m.

and p.m. peak hour turning volumes based on the relationship between a.m. and p.m. intersection approach volumes and Saturday approach volumes for existing conditions.

Traffic volumes for cumulative Proposed Project conditions were developed by adding traffic for the Proposed Project to the cumulative no project scenario. Cumulative traffic volumes for project alternatives were developed in a similar manner to the Proposed Project.

Mitigation measures identified for baseline conditions are assumed to be in place for the analysis of cumulative conditions in compliance with City of Sacramento policy. Additional mitigation measures are identified where feasible to mitigate additional cumulative impacts.

A summary of intersection operations for cumulative conditions is provided in Table 5.2-16 for the Proposed Project and access scenarios. Peak hour turning movement traffic volumes are shown in Appendix D.

5.2-10 Cumulative impacts to study intersections.

The Proposed Project would add traffic to study intersections and cause significant impacts for cumulative conditions at the following intersections:

- (a) 24th Street / 2nd Avenue
- (b) 24th Street / Portola Way
- (c) Sutterville Road / Freeport Boulevard (north)
- (d) Sutterville Road / City College Drive
- (e) Sutterville Road / Road A
- (f) Sutterville Road / Curtis Drive West
- (g) Sutterville Road / Franklin Boulevard
- (h) Sutterville Road / SR 99 Northbound Ramps
- (i) Road A / Area 1

The Proposed Project would cause traffic operations at all of the intersections listed to drop from LOS C or better to LOS D or worse, or would increase the delay by 5 seconds or more for intersections that would operate below LOS C without the project. This is considered a *significant impact*.

Access Scenario 2 (two northeast connections) and Access Scenario 3 (10th Avenue connection) would have *significant impacts* for cumulative conditions at the same locations as the Proposed Project.

If the realignment of Pacific Avenue is implemented, the Sutterville Road / Road A / Pacific Avenue intersection would operate within City standard at LOS C in the a.m. peak hour but would operate at LOS D (41.5 seconds of average delay) in the p.m. peak hour.

Table 5.2-16
Intersection Levels of Service for Access Scenarios – Cumulative Conditions

Intersection	Traffic Control	Peak Hour	Scenario 0: No Project		Scenario 1: Proposed Project		Scenario 2: Two Northeast Connections		Scenario 3: 10th Ave. Connection	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
1. 24th St / Broadway	Signal	AM	B	18.1	B	18.4	B	18.4	B	18.4
		PM	D	41.0	D	44.2	D	44.2	D	44.2
		Saturday	B	14.1	B	15.0	B	15.0	B	15.0
2. Freeport Bl / 2nd Av	Signal	AM	C	32.0	B	15.7	B	15.7	B	15.7
		PM	F	100.1	D	48.7	D	48.7	D	48.7
		Saturday	C	20.1	B	14.1	B	14.1	B	14.1
3. 21st St / 2nd Av	Signal	AM	B	11.9	B	12.5	B	12.6	B	12.5
		PM	B	14.6	B	15.3	B	15.4	B	15.4
		Saturday	A	9.7	B	10.5	B	10.5	B	10.5
4. 24th St / 2nd AV	4-Way Stop	AM	E	46.2	F	67.8	F	67.9	F	67.8
		PM	E	39.3	F	63.8	F	63.7	F	63.6
5. 21th St / 4th Av	Stop Sign	AM	A	1.3	A	1.4	A	1.4	A	1.4
		PM	A	0.5	A	0.9	A	0.9	A	0.9
		Saturday	A	0.8	A	1.3	A	1.3	A	1.3
6. Freeport Bl / 21st St	Signal	AM	E	62.9	E	63.8	E	64.1	E	64.1
		PM	F	84.5	F	86.1	F	86.3	F	86.3
		Saturday	C	22.4	C	23.0	C	23.0	C	23.0
7. Freeport Bl / Vallejo Wy	Signal	AM	B	19.6	C	21.0	C	20.5	C	20.5
		PM	B	12.0	B	12.9	B	12.9	B	12.9
		Saturday	A	7.1	A	7.5	A	7.5	A	7.5

Table 5.2-16
Intersection Levels of Service for Access Scenarios – Cumulative Conditions

Intersection	Traffic Control	Peak Hour	Scenario 0: No Project		Scenario 1: Proposed Project		Scenario 2: Two Northeast Connections		Scenario 3: 10th Ave. Connection	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
8. 24th St / Portola Wy	4-Way Stop	AM	D	32.6	F	52.0	F	52.0	F	52.0
		PM	C	22.4	F	61.4	F	61.8	F	61.5
9. 24th St / 5th Av	Stop Sign	AM	A	1.7	A	2.0	A	2.6	A	2.0
		PM	A	1.2	A	2.2	A	3.0	A	2.2
10. 24th St / Donner Wy	Stop Sign	AM	A	1.7	A	2.9	A	2.5	A	2.8
		PM	A	1.0	A	2.7	A	2.7	A	2.7
11. Franklin Bl / 5th Av	Signal	AM	A	5.8	A	6.0	A	6.0	A	6.0
		PM	A	6.2	A	6.3	A	6.3	A	6.3
		Saturday	A	4.8	A	4.7	A	4.7	A	4.7
12. 24th St / 10th Av	Stop Sign	AM	A	1.0	A	2.4	A	2.4	A	3.3
		PM	A	0.7	A	3.9	A	3.8	A	4.8
13. 24th St / 11th Av	Stop Sign	AM	A	1.1	A	2.6	A	2.6	A	2.5
		PM	A	1.2	A	5.2	A	5.1	A	5.0
14. Sutterville / Freeport (North)	Signal	AM	E	68.8	E	68.8	E	68.6	E	68.6
		PM	C	34.3	D	38.8	D	38.8	D	38.8
		Saturday	B	17.7	B	18.5	B	18.5	B	18.5
15. Sutterville / 21st St	Signal	AM	B	11.2	B	11.7	B	11.7	B	11.7
		PM	A	6.6	A	7.3	A	7.3	A	7.3
		Saturday	A	4.8	A	4.8	A	4.8	A	4.8

**Table 5.2-16
Intersection Levels of Service for Access Scenarios – Cumulative Conditions**

Intersection	Traffic Control	Peak Hour	Scenario 0: No Project		Scenario 1: Proposed Project		Scenario 2: Two Northeast Connections		Scenario 3: 10th Ave. Connection	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
16. Sutterville / City College Drive	Signal	AM	E	73.8	F	82.6	F	82.7	F	82.7
		PM	D	46.7	E	67.7	E	67.7	E	67.7
		Saturday	B	17.2	B	18.4	B	18.4	B	18.4
17. Sutterville / Road A	Signal or Stop Sign ³	AM	A	0.5	C	24.6	C	24.6	C	23.8
		PM	A	0.3	D	42.4	D	42.5	D	41.8
		Saturday	A	0.5	C	31.2	C	31.3	C	29.7
18. Sutterville / 24th St	Stop Sign or Signal ⁴	AM	B	19.9	A	2.0	A	2.0	A	2.1
		PM	C	32.9	A	0.5	A	0.5	A	0.5
		Saturday	A	6.3	A	0.2	A	0.2	A	0.2
19. Sutterville / Curtis Dr West	Stop Sign	AM	A	0.7	A	0.8	A	0.8	A	9.8
		PM	C	21.0	F	54.6	F	54.9	F	62.3
		Saturday	A	8.8	D	34.2	D	34.4	E	43.0
20. Sutterville / Franklin Bl	Signal	AM	D	46.7	E	57.3	E	57.3	E	57.4
		PM	D	43.4	E	75.4	E	75.3	E	75.4
		Saturday	C	29.3	D	36.9	D	36.9	D	37.0
21. Sutterville / SR 99 SB Ramp	Signal	AM	D	41.1	C	26.0	C	26.0	C	26.0
		PM	D	51.6	C	30.8	C	30.8	C	30.8
		Saturday	D	54.8	D	38.0	D	38.0	D	38.0
22. Sutterville / SR 99 NB Ramps	Signal	AM	C	20.4	C	23.4	C	23.4	C	23.4
		PM	C	26.4	D	37.2	D	37.2	D	37.2
		Saturday	C	23.5	D	38.7	D	38.7	D	38.7

Table 5.2-16
Intersection Levels of Service for Access Scenarios – Cumulative Conditions

Intersection	Traffic Control	Peak Hour	Scenario 0: No Project		Scenario 1: Proposed Project		Scenario 2: Two Northeast Connections		Scenario 3: 10th Ave. Connection	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
23. Sutterville / Freeport (South)	Signal	AM	D	44.9	D	48.2	D	48.2	D	48.2
		PM	E	64.2	E	69.1	E	69.1	E	69.1
		Saturday	D	45.9	D	48.4	D	48.4	D	48.4
24. Road A / Donner Wy / Road G	Signal	AM	na	na	A	8.7	A	8.6	A	8.7
		PM	na	na	A	5.7	A	5.6	A	5.7
		Saturday	na	na	A	4.5	A	4.3	A	4.5
25. Road A / Road E	Stop Sign	AM	na	na	A	0.3	A	0.3	A	0.3
		PM	na	na	A	0.1	A	0.1	A	0.1
		Saturday	na	na	A	0.3	A	0.3	A	0.3
26. Road A / Area 3	Stop Sign	AM	na	na	A	3.3	A	3.3	A	2.9
		PM	na	na	C	18.5	C	18.4	C	17.8
		Saturday	na	na	A	7.1	A	7.0	A	6.9
27. Road A / Road C	Round-about	AM	na	na	A	5.2	A	5.2	A	5.2
		PM	na	na	B	11.6	B	11.6	B	11.4
		Saturday	na	na	A	5.1	A	5.1	A	5.0
28. Road A / Area 1	Signal	AM	na	na	A	4.1	A	4.2	A	4.1
		PM	na	na	E	62.4	E	63.4	E	61.8
		Saturday	na	na	B	14.1	B	14.6	B	13.8
29. Road A / Area 2	Stop Sign	AM	na	na	A	0.8	A	0.8	A	0.8
		PM	na	na	B	14.4	B	14.4	B	13.4
		Saturday	na	na	A	4.9	A	4.9	A	4.7

Table 5.2-16
Intersection Levels of Service for Access Scenarios – Cumulative Conditions

Intersection	Traffic Control	Peak Hour	Scenario 0: No Project		Scenario 1: Proposed Project		Scenario 2: Two Northeast Connections		Scenario 3: 10th Ave. Connection	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
30. Franklin Bl / 5 th Av (South)	Stop Sign	AM	A	0.9	A	1.0	A	1.2	A	1.0
		PM	A	1.1	A	2.5	A	2.3	A	2.5
		Saturday	A	1.8	A	2.6	A	2.5	A	2.6

Source: Dowling Associates, 2008

Notes:

¹ LOS denotes level of service.

² Delay represents average seconds of delay per vehicle.

³ Existing Ramp is controlled by a yield sign; New Road A will be signalized.

⁴ Existing intersection is signalized; the Project would convert the intersection to stop sign control.

Shaded and bold values indicate a potential significant impact.

Mitigation Measures

- 5.2-10(a) *24th Street / 2nd Avenue – The project applicant shall pay a fair share contribution to install a traffic signal at this intersection. This mitigation measure would reduce the impact of the Proposed Project and all access scenarios to a **less than significant** level.*
- 5.2-10(b) *24th Street / Portola Way – The project applicant shall pay a fair share to install a traffic signal at this intersection. This mitigation measure would reduce the impact of the Proposed Project and all access scenarios to a **less than significant** level.*
- 5.2-10(c) *Sutterville Road / Freeport Boulevard (north) – the applicant shall pay a fair share contribution to provide protected-permitted left turn phasing and install proper signage for southbound Freeport Boulevard. This mitigation measure would reduce the impact of the Proposed Project, Access Scenario 2 and Access Scenario 3 to a **less than significant** level.*
- 5.2-10(d) *Sutterville Road / City College Drive – The applicant shall pay a fair share contribution to provide overlap signal phasing to allow the northbound right turn traffic on City College Drive to proceed on a green arrow simultaneously with the westbound left turning movement, and prohibit U-turns for the westbound Sutterville Road approach to the intersection. This mitigation measure would reduce the impact of the Proposed Project and Access Scenario 2 and 3 to a **less than significant** level.*
- 5.2-10(e) *Sutterville Road / Road A – apply Mitigation Measure 5.2-1(b) which would provide overlap signal phasing to allow the southbound Road A Right turning traffic to proceed on a green arrow simultaneously with the eastbound left turning movement, and prohibit U-turns for the eastbound left turning movement; provide one left-turn lane, one left-right lane, and one right-turn lane on the southbound approach; provide a dedicated right turn lane for the westbound Sutterville Road approach to the intersection; provide an actuated exclusive pedestrian phase to serve pedestrians crossing Sutterville Road; and optimize signal timing. This mitigation measure would reduce the impact of the Proposed Project and Access Scenarios 2 and 3 to a **less than significant** level.*
- 5.2-10(f) *Sutterville Road / Curtis Drive West - No feasible mitigation measure was identified for the Sutterville Road / Curtis Drive West intersection. Adding a southbound right turn lane to the intersection would mitigate the impact but was not considered to be feasible because of the need for demolishing several existing buildings to provide additional right-of-way. The*

*cumulative impact for the Proposed Project and all access scenarios would remain **significant and unavoidable**.*

- 5.2-10(g) *Sutterville Road / Franklin Boulevard –The project applicant shall pay a fair share contribution to add an eastbound right-turn lane would mitigate the Saturday peak hour impact of the Proposed Project and Access Scenario 2 and Access Scenario 3 to a **less than significant** level. For a.m. and p.m. peak hour impacts, also increase the cycle length to 110 seconds. These mitigation measures would reduce the impact of the Proposed Project and Access Scenario 2 and Access Scenario 3 to a **less than significant** level.*
- 5.2-10(h) *Sutterville Road / SR 99 Northbound Ramps – The project applicant shall pay a fair share contribution to modify signal timing to provide split phase for all approaches and re-strip the eastbound lanes to provide one left-turn, one left-through, and one through lane. Construct two receiving lanes on the on-ramp for the turning movement from eastbound 12th Avenue to the northbound SR 99 ramp. This mitigation measure would reduce the impact of the Proposed Project and Access Scenario 2 and 3 to a **less than significant** level.*
- 5.2-10(i) *Road A / Area 1 – The project applicant shall pay a fair share contribution to modify the signal phasing to provide overlaps for the eastbound right-turn movement; provide protected-permitted phasing for the northbound left-turn movement; prohibit U-turn movement at this intersection; and increase the cycle length to 95 seconds. This mitigation measure would reduce the impact of the Proposed Project and Access Scenario 2 and 3 to a **less than significant** level.*

A summary of traffic operations on roadway segments for cumulative conditions is provided in Table 5.2-17 for the access scenarios.

5.2-11 Cumulative impacts to study roadway segments.

The Proposed Project would add traffic to roadway segments in 2027 and cause significant impacts for cumulative conditions on the following roadway segments:

- (a) Sutterville Railroad Overcrossing
- (b) Sutterville Road between E. Curtis Drive and W. Curtis Drive
- (c) 24th Street between Portola Way and Marshall Way
- (d) Freeport Boulevard north of 21st Street
- (e) Road A north of Road G
- (f) Road A north of Road C
- (g) Road A north of Area 2
- (h) Road A north of Area 1

The Proposed Project would cause traffic operations at all of the roadway segments listed to drop from LOS C or better to LOS D or worse, or would increase the v/c ratio by 0.02 or more for roadway segments that would operate below LOS C without the project. This is considered a *significant impact*.

Access Scenario 2 (two northeast connections) would have *significant impacts* for cumulative conditions at the same locations as the Proposed Project.

Access Scenario 3 (10th Avenue connection) would have *significant impacts* for cumulative conditions at the same locations as the Proposed Project except Road A north of Road C, where it would operate at acceptable level.

Mitigation Measures

No mitigation was identified to reduce the significant impact for cumulative conditions on roadway segments to less than significant. To reduce the impact to less than significant for the Proposed Project and all access scenarios, Sutterville Road, 24th Street and Freeport Boulevard would need to be widened. No roadway widening is considered to be feasible.

While widening the on-site roadway of Road A would reduce the impact to less than significant for the Proposed Project and Access Scenarios 2 and 3, secondary impacts might arise as a result of the widening. A widened roadway would attract incremental traffic and contribute to higher speeds. Additional traffic, higher speeds, and the added roadway width would make the roadway less friendly to pedestrians and bicycles. Because Road A is located in a commercial area where high pedestrian traffic is anticipated, a safe pedestrian-friendly street is desirable.

Mitigation Measure 5.2-2(a), which requires the developer to provide a transit or pedestrian connection between the commercial areas of the project site and the City College light rail station, would reduce the impact on roadway segments; however, the impact after mitigation would remain *significant and unavoidable*.

**Table 5.2-17
Roadway Levels of Service for Project Scenarios – Cumulative Conditions**

Roadway Segment	Lanes	Scenario 0: No Project			Scenario 1: Proposed Project			Scenario 2: Two 5th Ave. Connections			Scenario 3: 10th Connection		
		ADT	LOS	V/C	ADT	LOS	V/C	ADT	LOS	V/C	ADT	LOS	V/C
Weekday													
Sutterville Rd RR Overcrossing	4	40,337	F	1.12	43,165	F	1.20	43,170	F	1.20	43,170	F	1.20
Sutterville Rd btw E. Curtis Dr & W. Curtis Dr	4	37,709	F	1.05	43,330	F	1.20	43,354	F	1.20	43,372	F	1.20
24th St north of 10th Av	2	6,029	B	0.69	1,301	A	0.15	1,316	A	0.15	1,301	A	0.15
24th St btw Portola & Marshall Wy	2	6,085	B	0.70	7,687	D	0.88	7,695	D	0.88	7,695	D	0.88
Donner Wy btw 24th St & 25th St	2	1,197	A	0.24	1,863	A	0.37	1,778	A	0.36	1,838	A	0.37
Freeport Bl north of 21st St	2	14,375	E	0.96	14,691	E	0.98	14,691	E	0.98	14,691	E	0.98
21st St north of 4th Ave	3	16,024	C	0.71	16,516	C	0.73	16,521	C	0.73	16,526	C	0.73
Portola Wy btw 21st St & 24th St	2	1,897	A	0.38	1,901	A	0.38	1,901	A	0.38	1,901	A	0.38
Marshall Wy btw 21st St & 24th St	2	3,068	B	0.61	1,005	A	0.20	1,005	A	0.20	1,005	A	0.20
4th Ave btw 21st St & 24th St	2	632	A	0.13	632	A	0.13	632	A	0.13	632	A	0.13
3rd Ave btw 21st St & 24th St	2	360	A	0.07	360	A	0.07	360	A	0.07	360	A	0.07
24th St just south of Donner Wy	2	5,232	A	0.60	1,126	A	0.13	1,140	A	0.13	1,126	A	0.13
10th Ave just east of 24th St	2	686	A	0.14	686	A	0.14	686	A	0.14	890	A	0.18
11th Ave just east of 24th St	2	658	A	0.13	658	A	0.13	658	A	0.13	658	A	0.13
5th Ave just east of 24th St	2	1,858	A	0.37	2,714	A	0.54	2,830	A	0.57	2,714	A	0.54
W. Pacific Av N of Wilmington Av	2	1,311	A	0.26	3,034	B	0.61	3,034	B	0.61	3,034	B	0.61
E. Pacific Ave just N of Wilmington Av	2	931	A	0.19	931	A	0.19	931	A	0.19	931	A	0.19
Road A north of Road G	2				7,239	D	0.83	7,212	D	0.82	7,242	D	0.83
Road A north of Road E	2				6,089	B	0.70	6,086	B	0.70	6,086	B	0.70
Road A north of Area 3	2				6,140	C	0.70	6,143	C	0.70	6,143	C	0.70
Road A north of Road C	2				7,105	D	0.81	7,101	D	0.81	6,943	C	0.79
Road A north of Area 2	2				7,643	D	0.87	7,643	D	0.87	7,485	D	0.86
Road A north of Area 1	2				7,821	D	0.89	7,821	D	0.89	7,659	D	0.88
Road A north of Sutterville Road	4				9,979	A	0.57	10,010	A	0.57	9,818	A	0.56

**Table 5.2-17
 Roadway Levels of Service for Project Scenarios – Cumulative Conditions**

Roadway Segment	Lanes	Scenario 0: No Project			Scenario 1: Proposed Project			Scenario 2: Two 5th Ave. Connections			Scenario 3: 10th Connection		
		ADT	LOS	V/C	ADT	LOS	V/C	ADT	LOS	V/C	ADT	LOS	V/C
Saturday													
Sutterville Rd RR Overcrossing	4	37,472	F	1.04	44,113	F	1.23	44,113	F	1.23	44,113	F	1.23
Sutterville Rd btw E. Curtis Dr & W. Curtis Dr	4	28,023	C	0.78	37,259	F	1.03	37,284	F	1.04	37,284	F	1.04
Freeport Bl north of 21st St	2	11,052	C	0.74	11,664	C	0.78	11,664	C	0.78	11,676	C	0.78
21st St north of 4th Av	3	11,357	A	0.50	12,378	A	0.55	12,366	A	0.55	12,378	A	0.55
Source: Dowling Associates, Inc., 2008. ADT = Averaged daily traffic LOS = Level of service V/C = Volume/Capacity													

A summary of freeway ramp operations for cumulative conditions is provided in Table 5.2-18 and vehicle queues at the SR 99 interchange ramps is provided in Table 5.2-19. Traffic operations and queuing on the freeway ramps for the all access scenarios would be the same as for the Proposed Project.

5.2-12 Cumulative Impacts to freeway ramps.

The Proposed Project and all access scenarios would add traffic to the Sutterville Road 99 freeway ramps. The southbound 12th Avenue off-ramp would operate below standard during the p.m. and Saturday peak hours without the project. The project would increase the density in the area where the ramp diverges from the freeway. The freeway operates at LOS F in the southbound direction during the p.m. peak hour and LOS E during the Saturday peak hour. The project would cause the diverge area to be worse than the freeway level of service during the Saturday peak hour and the project would add significant traffic to the freeway mainline. This is considered a *significant impact*.

Table 5.2-18							
State Route 99 Interchange Operations - Cumulative							
Ramp	Peak Hour	No Project			Proposed Project		
		LOS¹	Density	Volume	LOS¹	Density	Volume
Northbound SR 99							
12th Ave. Off-Ramp	AM	E	35.46	516	F	35.99	577
	PM	D	29.18	764	D	30.51	916
	Saturday	D	30.20	536	D	31.70	707
12th Ave. On-Ramp	AM	D	30.23	1,015	D	30.19	1,078
	PM	C	24.03	1,005	C	24.25	1,136
	Saturday	C	25.72	1,031	C	25.87	1,176
Southbound SR 99							
12th Ave. Off-Ramp	AM	C	27.50	1,143	D	28.07	1,209
	PM	F	49.57	1,349	F	50.97	1,510
	Saturday	F	41.43	1,193	F	43.00	1,372
12th Ave. On-Ramp	AM	B	19.26	322	B	19.42	376
	PM	F	38.33	449	F	37.92	577
	Saturday	D	30.58	592	D	30.47	730
NOTES:							
¹ LOS = Level of Service							
Source: Dowling Associates, Inc. 2008.							

**Table 5.2-19
SR 99 Ramp Queues - Cumulative**

Location	Peak Hour	Storage Capacity (ft)	No Project		Proposed Project ²	
			Queue ¹ (ft)	Adequate Capacity	Queue ¹ (ft)	Adequate Capacity
SR 99 SB Off-ramp to Sutterville Rd.	AM	765	975	No	300	Yes
	PM		1175	No	750	Yes
	Saturday		1075	No	775	No
SR 99 NB Off-ramp to Sutterville Rd.	AM	510	325	Yes	375	Yes
	PM		450	Yes	525	No
	Saturday		325	Yes	500	Yes

¹ Queue represents 95th percentile queue.
² Baseline mitigations are assumed to be in place for Proposed Project under cumulative conditions.
Source: Dowling Associates, Inc., 2010.

The project would increase the density in the northbound 12th Avenue off-ramp diverge area and would cause the diverge area to degrade from LOS E to LOS F during the a.m. peak hour. The diverge area of the off-ramp would operate at worse than the freeway level of service during the a.m. peak hour without the project; however, the project would add significant traffic to the freeway mainline. This is considered a *significant impact*.

The Proposed Project and all access scenarios would also cause the traffic queue for the right-turn movement at the northbound 12th Avenue off-ramp to exceed the storage capacity by one car length during the p.m. peak hour. This is considered a *significant impact*.

While the traffic queue from traffic signal at the southbound 12th Avenue off-ramp would exceed the storage capacity of the ramp by one car length during the Saturday peak hour under the Proposed Project and all access scenarios, the traffic queue would be shorter than No Project conditions. Therefore, this is considered a *less than significant impact*.

Mitigation Measure

Implementation of Mitigation Measure 5.2-10(h) would reduce the traffic queue at the northbound 12th Avenue off-ramp for the Proposed Project and all access scenarios to *less than significant* levels.

Implementation of Mitigation Measure 5.2-1(c) would reduce the traffic queue at the southbound 12th Avenue off-ramp for the Proposed Project and all access scenarios, but it will not fully mitigate the impact to the less than significant level. No other feasible mitigation measure was identified; therefore the impact to the southbound 12th Avenue off ramp would remain *significant and unavoidable*.

No feasible mitigation measure was identified that would reduce the impact of the project on SR 99. Widening the freeway would reduce the impact but was not

considered feasible. Although implementation of Mitigation Measure 5.2-2(a) would reduce the impact of the project on SR 99, the impact after mitigation would remain *significant and unavoidable*.

OTHER CONSIDERATIONS

Western At-Grade Crossing

An assessment was made to determine the potential effects of providing a western at-grade crossing that would connect to Freeport Boulevard. The traffic analysis showed that approximately 25 percent of the commercial traffic and 19 percent of the residential traffic would travel along Freeport Boulevard and 21st Street. Based on the location of the land uses on the project site and the shortest paths to and from destinations outside the project site, it is estimated that approximately 20 percent of the project traffic that would travel along Freeport Boulevard and 21st Street might use a western at-grade crossing. This rationale leads to the conclusion that approximately 5 percent of the project's commercial traffic and 4 percent of the projects residential traffic might use a western at-grade crossing.

A western at-grade crossing would relieve traffic congestion at impacted intersections but may not be sufficient to mitigate the significant impacts identified in this report. A western at-grade crossing would also result in secondary impacts to the street that would provide the connection between the project site and Freeport Boulevard. A centrally located street such as 7th Avenue or 6th Avenue would provide the highest potential for traffic diversion. All the streets that could provide the connection are local residential streets. If the western at-grade crossing carried 5 to 7 percent of the project traffic, the street providing the connection would carry approximately 800 to 1,120 vehicles per day.

Sight Distance

The safety of traffic operations on Sutterville Road were evaluated with regard to the location of the proposed new project access (Road A) for the Proposed Project. Sutterville Road is relatively flat on the approach to the Road A intersection from the east. The approach from the west passes over the railroad along a crest vertical curve. This westbound approach was evaluated to determine if the line of sight for approaching motorists would be adequate.

An examination of roadway profile information showed that the design speed of Sutterville Road at the railroad overcrossing is between 35 and 40 mph. The proposed Road A intersection would be located at a sag vertical curve on Sutterville Road about 700 feet east of the crest of the vertical curve. The 95th percentile queue of eastbound vehicle stopped at the proposed intersection ranges from approximately 275 feet to 450 feet. Eastbound motorists on Sutterville Road approaching the intersection would have adequate stopping sight distance for speeds well in excess of the design speed of Sutterville Road. At no point along Sutterville Road in the vicinity of the intersection would the stopping sight distance be less than the design speed of Sutterville Road for vehicles approaching a queue of vehicles stopped at the intersection.

APPENDIX K

5.2	PROJECT ALTERNATIVES
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TRANSPORTATION

In addition to the Proposed Project, four other land use alternatives were analyzed. Three of the alternatives entail reduction of commercial spaces and inclusion of multi-family residential units and were analyzed quantitatively along with the Proposed Project. The remaining two alternatives were evaluated qualitatively based on a comparison of the number of trips generated. The land uses for the project alternatives are defined in Table 5.2-1.

Table 5.2-1 Land Uses for Project Alternatives							
Area	Alternative 1: No Project/No Build Alternative	Alternative 2: Proposed Project	Alternative 3: Reduced Commercial Alternative A	Alternative 4: Reduced Commercial Alternative B	Alternative 5: Single Family Alternative	Alternative 6: Existing General Plan and Zoning Alternative - Industrial	Alternative 7: Multi-family Alternative C
Area 1 (retail sq. ft.) (multi-family units)	0 0	154,800 0	118,125 22	100,000 22	0	0	156,000 22
Area 2 (retail sq. ft.) (multi-family units)	0 0	15,800 0	19,675 31	0 31	0 0	0 0	24,000 31
Area 3 (retail sq. ft.) (multi-family units)	0 0	140,300 150 room hotel	12,200 263	0 263	0	0	20,000 263
Single-Family Area (dwelling units)	0	210	252	290	393	0	232
Off-Site Single-Family Area (dwelling units)	0	6	18	18	18	18	18
Park/Open Space (acres)	0	7.2	7.2	7.2	7.2	0	7.2
Heavy Industrial (sq. ft.)	0	0	0	0	0	779,900	0

The traffic controls for the No Project/No Build Alternative were assumed to be the same as exist currently. Traffic controls for the Proposed Project and all the alternatives include a new traffic signal at the new project access at Sutterville Road and a stop sign control at the 24th Street approach to Sutterville Road. While the Proposed Project assumed the Road A and Area 1 intersection would have one northbound left-turn lane and one through lane and would be controlled by a traffic signal, all the remaining land use alternatives assumed the northbound approach would have one left-turn lane and two through lanes and controlled by a one-way stop sign. Further, the vehicular access for single-family residences that lie along the east side of Road A north of Area 3 would be via Road A for all the land use alternatives while the Proposed Project assumed access through the alley way, which has connection to Donner Way.

Please refer to Section 4.2 for a discussion of trip generation for the project alternatives.

Impacts and Mitigation Measures for Project Alternatives

The standards of significance, methods of analysis, and traffic impacts and mitigation measures are summarized in Section 4.2.

Baseline Conditions

An analysis of baseline plus project conditions was performed to determine the potential traffic impacts of the project alternatives in combination with other projects that have already been approved. The approved projects and the method of analysis are described in Section 4.2

A summary of intersection operations for project alternatives is provided in Table 5.2-2.

5.2-1 Impacts to study intersections under baseline plus project conditions.

The Proposed Project, Reduced Commercial Alternative A, Reduced Commercial Alternative B, and Multi-Family Alternative C would increase traffic volumes at study area intersections and would cause significant impacts under baseline plus project conditions at the following intersections:

- (a) Freeport Boulevard / 2nd Avenue – while the intersection would operate at substandard level (LOS D) with and without the Proposed Project and the land use alternatives during the p.m. peak hour, traffic from the Proposed Project would cause the average delay to increase by more than five seconds. This is considered a *significant impact*.
- (b) Sutterville Road / Road A – traffic from the Proposed Project would degrade the level of service to LOS F during the p.m. peak hour. During the same period, Reduced Commercial Alternative A would degrade the level of service to LOS D and Multi-Family Alternative C would degrade the level of service to LOS E. This is considered a *significant impact*.

**Table 5.2-2
Intersection Levels of Service for Project Alternatives – Baseline Conditions**

Intersection	Traffic Control	Peak Hour	Alternative 1: No Project		Alternative 2: Proposed Project		Alternative 3: Reduced Commercial A		Alternative 4: Reduced Commercial B		Alternative 7: Multi-Family C	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
1. 24th St / Broadway	Signal	AM	B	14.1	B	14.4	B	14.4	B	14.4	B	14.4
		PM	B	17.9	B	18.3	B	18.2	B	18.2	B	18.3
		Saturday	B	10.6	B	11.7	B	11.4	B	11.3	B	11.5
2. Freeport Bl / 2nd Av	Signal	AM	B	20.0	C	20.3	C	20.2	C	20.3	C	20.3
		PM	D	36.2	D	41.4	D	39.2	D	39.2	D	39.7
		Saturday	B	16.7	B	17.3	B	17.1	B	17.1	B	17.2
3. 21st St / 2nd Av	Signal	AM	A	9.2	A	9.8	A	9.8	A	9.8	A	9.8
		PM	A	9.6	B	10.5	B	10.1	B	10.1	B	10.2
		Saturday	A	8.8	A	9.9	A	9.4	A	9.4	A	9.6
4. 24th St / 2nd AV	4-Way Stop	AM	B	11.0	B	12.4	B	12.5	B	12.7	B	12.6
		PM	C	15.1	C	20.5	C	18.4	C	18.3	C	19.2
5. 21th St / 4th Av	Stop Sign	AM	A	1.6	A	1.7	A	1.7	A	1.7	A	1.7
		PM	A	0.7	A	1.2	A	1.0	A	1.0	A	1.1
		Saturday	A	1.0	A	1.6	A	1.4	A	1.3	A	1.6
6. Freeport Bl / 21st St	Signal	AM	B	16.7	B	16.9	B	16.9	B	16.9	B	16.9
		PM	C	21.6	C	22.1	C	21.9	C	21.9	C	21.9
		Saturday	B	17.2	B	17.8	B	17.5	B	17.5	B	17.6
7. Freeport Bl / Vallejo Wy	Signal	AM	A	9.1	A	9.2	A	9.1	A	9.1	A	9.2
		PM	A	4.8	A	5.3	A	5.1	A	5.1	A	5.2
		Saturday	A	6.4	A	7.0	A	6.7	A	6.5	A	6.8
8. 24th St / Portola Wy	4-Way Stop	AM	A	9.1	B	10.1	B	10.0	B	10.1	B	10.1
		PM	B	11.9	C	18.7	C	15.1	B	14.8	C	16.4
9. 24th St / 5th Av	Stop Sign	AM	A	0.7	A	0.9	A	0.8	A	0.8	A	0.9
		PM	A	0.3	A	1.1	A	1.0	A	0.9	A	1.1
10. 24th St / Donner Wy	Stop Sign	AM	A	0.7	A	3.8	A	3.8	A	3.8	A	3.5
		PM	A	3.2	A	6.2	A	5.9	A	5.9	A	5.8
11. Franklin Bl / 5th Av	Signal	AM	A	5.6	A	5.7	A	5.8	A	5.8	A	5.8
		PM	A	6.4	A	6.6	A	6.5	A	6.5	A	6.6
		Saturday	A	5.0	A	4.7	A	4.8	A	4.8	A	4.7

**Table 5.2-2
Intersection Levels of Service for Project Alternatives – Baseline Conditions**

Intersection	Traffic Control	Peak Hour	Alternative 1: No Project		Alternative 2: Proposed Project		Alternative 3: Reduced Commercial A		Alternative 4: Reduced Commercial B		Alternative 7: Multi-Family C	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
12. 24th St / 10th Av	Stop Sign	AM	A	0.1	A	0.3	A	0.3	A	0.3	A	0.3
		PM	A	0.2	A	1.2	A	1.4	A	1.4	A	1.2
13. 24th St / 11th Av	Stop Sign	AM	A	0.3	A	0.7	A	0.7	A	0.7	A	0.7
		PM	A	0.2	A	1.5	A	1.6	A	0.2	A	1.4
14. Sutterville / Freeport (North)	Signal	AM	C	21.8	C	22.0	C	21.9	C	21.9	C	21.9
		PM	B	17.8	B	18.6	B	18.2	B	18.1	B	18.4
		Saturday	B	15.2	B	15.8	B	15.6	B	15.5	B	15.7
15. Sutterville / 21st St	Signal	AM	A	9.0	A	9.1	A	9.1	A	9.1	B	10.1
		PM	A	6.0	A	6.2	A	6.0	A	6.0	A	6.3
		Saturday	A	5.1	A	5.1	A	5.1	A	5.1	A	4.8
16. Sutterville / City College Dr	Signal	AM	C	20.4	C	21.4	C	21.0	C	20.2	C	21.1
		PM	C	23.7	C	27.5	C	25.5	C	20.5	C	26.2
		Saturday	B	10.9	B	14.8	B	12.7	B	12.0	B	12.7
17. Sutterville / Road A	Yield or Signal ³	AM	A	0.6	B	17.9	B	16.0	B	15.8	B	17.2
		PM	A	0.3	F	86.9	D	37.7	C	32.5	E	59.1
		Saturday	A	0.3	C	32.6	B	17.8	B	16.3	C	22.9
18. Sutterville / 24th St	Signal or Stop Sign ⁴	AM	A	8.7	A	0.1	A	0.2	A	0.2	A	0.1
		PM	B	13.7	A	0.0	A	0.0	A	0.0	A	1.1
		Saturday	A	6.5	A	0.1	A	0.2	A	0.2	A	0.1
19. Sutterville / Curtis Dr West	Stop Sign	AM	A	0.3	A	0.4	A	0.3	A	0.3	A	0.3
		PM	A	0.5	A	0.5	A	0.5	A	0.5	A	0.5
		Saturday	A	0.7	A	1.0	A	0.8	A	0.8	A	0.9
20. Sutterville / Franklin Bl	Signal	AM	C	28.0	C	29.8	C	29.4	C	27.9	C	29.8
		PM	C	24.9	C	29.5	C	26.9	C	25.2	C	27.7
		Saturday	C	24.2	C	24.5	C	24.3	C	24.0	C	24.4
21. Sutterville / SR 99 SB Ramp	Signal	AM	C	27.1	C	30.2	C	29.2	C	29.1	C	30.6
		PM	C	28.2	E	57.8	D	43.3	D	41.9	E	56.2
		Saturday	C	33.4	E	68.0	D	50.6	D	48.3	E	66.5

**Table 5.2-2
Intersection Levels of Service for Project Alternatives – Baseline Conditions**

Intersection	Traffic Control	Peak Hour	Alternative 1: No Project		Alternative 2: Proposed Project		Alternative 3: Reduced Commercial A		Alternative 4: Reduced Commercial B		Alternative 7: Multi-Family C	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
22. Sutterville / SR 99 NB Ramps	Signal	AM	B	17.3	B	19.2	B	18.8	B	18.8	B	19.0
		PM	B	19.0	C	22.6	C	20.8	C	20.6	C	21.6
		Saturday	C	20.0	C	27.0	C	23.8	C	23.0	C	24.5
23. Sutterville / Freeport (South)	Signal	AM	C	22.4	C	22.7	C	22.6	C	22.6	C	22.6
		PM	C	23.8	C	24.7	C	24.2	C	24.1	C	24.4
		Saturday	C	22.9	C	23.0	C	22.9	C	22.9	C	23.0
24. Road A / DonnerWy / Road G	Signal	AM	na	na	A	8.3	A	8.0	A	8.0	A	3.9
		PM	na	na	A	4.9	A	5.0	A	5.0	A	7.0
		Saturday	na	na	A	4.6	A	4.9	A	5.1	A	3.9
25. Road A / Road E	Stop Sign	AM	na	na	A	0.4	A	0.5	A	0.7	A	0.4
		PM	na	na	A	0.1	A	0.3	A	0.4	A	0.2
		Saturday	na	na	A	0.3	A	0.5	A	0.7	A	0.3
26. Road A / Area 3	Stop Sign	AM	na	na	A	4.0	A	2.6	A	2.1	A	2.8
		PM	na	na	D	28.9	A	2.2	A	1.2	A	2.8
		Saturday	na	na	A	8.6	A	3.0	A	1.6	A	3.5
27. Road A / Road C	Roundabout	AM	na	na	A	4.1	A	3.8	A	3.8	A	3.9
		PM	na	na	A	7.6	A	5.8	A	5.6	A	6.3
		Saturday	na	na	A	4.7	A	3.9	A	3.8	A	4.1
28. Road A / Area 1	Stop Sign	AM	na	na	A	4.6	A	2.1	A	2.5	A	2.4
		PM	na	na	D	32.9	A	5.5	A	5.4	C	23.7
		Saturday	na	na	B	11.1	A	5.5	A	5.7	B	11.1
29. Road A / Area 2	Stop Sign	AM	na	na	A	0.9	A	1.0	A	0.7	A	1.1
		PM	na	na	A	7.2	A	3.1	A	2.2	A	5.4
		Saturday	na	na	A	4.2	A	3.1	A	2.1	A	4.1
30. Franklin Bl / 5 th Av (South)	Stop Sign	AM	A	0.3	A	0.5	A	0.6	A	0.7	A	0.7
		PM	A	0.2	A	1.0	A	0.8	A	0.7	A	1.0
		Saturday	A	0.5	A	1.3	A	1.1	A	1.0	A	1.3

Source: Dowling Associates, Inc., 2008.

¹ LOS = Level of Service

² Weighted average control delay in seconds

Table 5.2-2 Intersection Levels of Service for Project Alternatives – Baseline Conditions												
Intersection	Traffic Control	Peak Hour	Alternative 1: No Project		Alternative 2: Proposed Project		Alternative 3: Reduced Commercial A		Alternative 4: Reduced Commercial B		Alternative 7: Multi-Family C	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
³ Existing Ramp is controlled by a yield sign; new Road A will be signalized. ⁴ Existing intersection is signalized; the Project would convert the intersection to stop sign control. Shaded and bold values indicate potential significant impacts. na = Not applicable (intersection does not exist)												

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- (c) Sutterville Road / SR 99 Southbound Ramps – traffic from the Proposed Project and Multi-Family Alternative C would cause traffic operations to drop from LOS C to LOS E and traffic from the Reduced Commercial alternatives result in a drop to LOS D during the p.m. and Saturday peak hours. During the same periods, traffic from Reduced Commercial Alternative A and B would result in a drop to LOS D. This is considered a *significant impact*.
- (d) Road A / Area 3 – traffic from the Proposed Project would result in a level of service of LOS D during the p.m. peak hour. This is considered a *significant impact*.
- (e) Road A / Area 1 – traffic from the Proposed Project would cause the intersection to operate at LOS D during the p.m. peak hour. This is considered a *significant impact*.

Although no quantitative assessment of traffic impacts was performed for the Single Family Alternative and the Existing General Plan and Zoning Alternative (Industrial), some conclusions were drawn regarding the potential impact to study intersections under baseline conditions based on the trip generation estimates shown in Section 4.2.

The Single Family Alternative would generate 30 percent of the p.m. peak hour external trips generated by the Proposed Project and 27 percent of the Saturday peak hour external trips. It is unlikely that this alternative would cause significant impacts under baseline conditions to either the Sutterville Road / Road A intersection or the Sutterville Road / SR 99 Southbound Ramps intersection.

The Existing General Plan and Zoning Alternative would generate 102 percent of the a.m. peak hour trips generated by the Proposed Project, 49 percent of the p.m. peak hour external trips, and 17 percent of the Saturday peak hour external trips. It is possible that this alternative could cause significant impacts under baseline conditions at either the Sutterville Road / Road A intersection, the Sutterville Road / SR 99 Southbound Ramps intersection, or other intersections.

Mitigation Measures

- 5.2-1(a) *At the Freeport Boulevard / 2nd Avenue intersection, implement Mitigation Measure 4.2-1(a), described in Section 4.2, would reduce the impact for the Proposed Project to a less-than-significant level.*
- 5.2-1(b) *At the Sutterville Road / Road A intersection, implement Mitigation Measure 4.2-1(b), described in Section 4.2, which entails provision of an overlap signal phasing to allow the southbound Road A right turning traffic to proceed on a green arrow simultaneously with the eastbound left turning movement, and prohibit U-turns for the eastbound left turning*

movement; and add a southbound left-right lane to provide one left-turn lane, one left-right lane, and one right turn lane would reduce the impact for the Proposed Project to a **less-than-significant** level. For Reduced Commercial Alternative A and Multi-Family Alternative C, the impact may be reduced to a **less-than-significant** level by only providing the southbound overlap signal phasing and prohibiting U-turns for the eastbound left turning movement.

- 5.2-1(c) At the Sutterville Road / SR99 SB Ramps intersection, implement Mitigation Measure 4.2-1(c), described in Section 4.2, would reduce the impact for the Proposed Project, Reduced Commercial Alternative A, Reduced Commercial Alternative B, and Multi-Family Alternative C to a **less-than-significant** level.
- 5.2-1(d) At the Road A / Area 3 intersection, implement Mitigation Measure 4.2-1(d), described in Section 4.2, would reduce the impact for the Proposed Project to a **less-than-significant** level.
- 5.2-1(e) At the Road A / Area 1 intersection, implement Mitigation Measure 4.2-1(e), described in Section 4.2, would reduce the impact for the Proposed Project to a **less-than-significant** level.

A summary of traffic operations for the project alternatives on roadway segments for baseline conditions is provided in Table 5.2-3.

5.2-2 Impacts to study roadway segments under baseline plus project conditions.

Project Alternatives

The Proposed Project, Reduced Commercial Alternative A, Reduced Commercial Alternative B and Multi-Family Alternative C would add traffic to roadway segments. At the Sutterville overcrossing, the roadway segment would operate at LOS D without the project and the project would cause the v/c ratio to increase by more than 0.02 during the p.m. peak hour. At the roadway segment on Sutterville Road between E. Curtis Drive and W. Curtis Drive, the Proposed Project would cause the level of service to drop from LOS C to LOS E in the p.m. peak hour and from LOS A to LOS D during Saturday peak hour. Reduced Commercial Alternative A, Reduced Commercial Alternative B and Multi-Family Alternative C would result in a drop from LOS C to LOS D during the p.m. peak hour. This is considered a **significant impact**.

The Single Family Alternative would generate 23 percent of the daily trips generated by the Proposed Project and the Existing General Plan and Zoning Alternative would generate 20 percent of the Proposed Project daily trips. It is unlikely that either of these alternatives would cause significant impacts under baseline conditions to either roadway segment on Sutterville Road.

**Table 5.2-3
Roadway Levels of Service for Project Alternatives – Baseline Conditions**

Roadway Segment	Lanes	Alternative 1: No Project			Alternative 2: Proposed Project			Alternative 3: Reduced Commercial A			Alternative 4: Reduced Commercial B			Alternative 7: Multi-Family C		
		ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³
Weekday																
Sutterville Rd Railroad Overcrossing	4	28,864	D	0.80	31,692	D	0.88	30,496	D	0.85	30,334	D	0.84	30,954	D	0.86
Sutterville Rd btw E. Curtis Dr & W. Curtis Dr	4	27,346	C	0.76	32,967	E	0.92	30,861	D	0.86	30,548	D	0.85	31,685	D	0.88
24th St north of 10th Av	2	3,690	A	0.42	736	A	0.08	736	A	0.08	736	A	0.08	782	A	0.09
24th St btw Portola Wy & Marshall Wy	2	3,685	A	0.42	5,288	B	0.60	4,938	A	0.56	4,889	A	0.56	5,092	A	0.58
Donner Wy btw 24th St & 25th St	2	636	A	0.13	1,302	A	0.26	1,227	A	0.25	1,217	A	0.24	1,202	A	0.24
Freeport Boulevard north of 21st St	2	10,654	C	0.71	10,970	C	0.73	10,842	C	0.72	10,847	C	0.72	10,880	C	0.73
21st St north of 4th Av	3	12,140	A	0.54	12,632	A	0.56	12,494	A	0.56	12,460	A	0.55	12,578	A	0.56
Portola Wy btw 21st St & 24th St	2	481	A	0.10	485	A	0.10	485	A	0.10	481	A	0.10	485	A	0.10
Marshall Wy btw 21st St & 24th St	2	778	A	0.16	1,005	A	0.20	586	A	0.12	508	A	0.10	772	A	0.15
4th Av btw 21st St & 24th St	2	632	A	0.13	632	A	0.13	632	A	0.13	632	A	0.13	632	A	0.13
3rd Av btw 21st St & 24th St	2	360	A	0.07	360	A	0.07	360	A	0.07	360	A	0.07	360	A	0.07
24th St just south of Donner Wy	2	1,799	A	0.21	709	A	0.08	757	A	0.09	757	A	0.09	750	A	0.09
10th Av just east of 24th St	2	94	A	0.02	94	A	0.02	94	A	0.02	94	A	0.02	94	A	0.02
11th Av just east of 24th St	2	98	A	0.02	98	A	0.02	98	A	0.02	98	A	0.02	98	A	0.02
5th Av just east of 24th St	2	401	A	0.08	1,257	A	0.25	1,203	A	0.24	1,095	A	0.22	1,288	A	0.26
W. Pacific Av north of Wilmington Av	2	1,311	A	0.26	3,034	B	0.61	2,134	A	0.43	2,081	A	0.42	2,447	A	0.49
E. Pacific Av just north of Wilmington Av	2	633	A	0.13	633	A	0.13	633	A	0.13	633	A	0.13	633	A	0.13
Road A north of Road G	2				5,057	A	0.58	4,546	A	0.52	4,489	A	0.51	4,808	A	0.55
Road A north of Road E	2				4,596	A	0.53	4,075	A	0.47	4,028	A	0.46	4,331	A	0.49
Road A north of Area 3	2				4,647	A	0.53	4,149	A	0.47	4,142	A	0.47	4,388	A	0.50
Road A north of Road C	2				5,612	B	0.64	4,156	A	0.47	4,062	A	0.46	4,502	A	0.51
Road A north of Area 2	2				6,109	B	0.70	4,758	A	0.54	4,684	A	0.54	5,114	A	0.58
Road A north of Area 1	2				6,288	C	0.72	5,111	A	0.58	4,606	A	0.53	5,481	B	0.63
Road A north of Sutterville Road	4				8,429	A	0.48	6,557	A	0.37	6,210	A	0.35	7,394	A	0.42

**Table 5.2-3
Roadway Levels of Service for Project Alternatives – Baseline Conditions**

Roadway Segment	Lanes	Alternative 1: No Project			Alternative 2: Proposed Project			Alternative 3: Reduced Commercial A			Alternative 4: Reduced Commercial B			Alternative 7: Multi-Family C		
		ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³
Saturday																
Sutterville Rd Railroad Overcrossing	4	21,692	B	0.60	28,332	C	0.79	25,202	C	0.70	24,639	B	0.68	26,543	C	0.74
Sutterville Rd btw E. Curtis Dr & W. Curtis Dr	4	20,009	A	0.56	29,245	D	0.81	25,188	B	0.70	24,369	B	0.68	26,914	C	0.75
Freeport Boulevard north of 21st St	2	8,073	A	0.54	8,685	A	0.58	8,408	A	0.56	8,396	A	0.56	8,597	A	0.57
21st St north of 4th Avnue	3	8,729	A	0.39	9,750	A	0.43	9,389	A	0.42	9,252	A	0.41	9,016	A	0.40
<p><i>Source:</i> Dowling Associates, Inc., 2008</p> <p>Notes:</p> <p>¹ADT = Avraged daily traffic</p> <p>²LOS = Level of service</p> <p>³V/C = Volume/Capacity</p> <p>Shaded and bold values indicate potential significant impacts.</p>																

Mitigation Measures

No mitigation was identified to reduce the significant impact for baseline conditions on roadway segments to less than significant. To reduce the impact to less than significant would require widening Sutterville Road. That mitigation is not considered to be feasible. Mitigation Measure 4.2-2(a), described in Section 4.2, is proposed to help reduce the impact on roadway segments, although the impact after mitigation would remain *significant and unavoidable*.

A summary of freeway ramp operations and vehicle queues at the SR 99 interchange ramps for baseline conditions is provided in Table 5.2-4 for the project alternatives.

5.2-3 Impacts to freeway ramps under baseline plus project conditions.

The Proposed Project, Reduced Commercial Alternative A, Reduced Commercial Alternative B and the Multi-Family Alternative C would cause the traffic queue from the traffic signal at the southbound 12th Avenue off-ramp to exceed the storage capacity of the ramp for baseline conditions. This is considered a *significant impact*.

Mitigation Measure

Implementation of Mitigation Measure 4.2-1(c) and 4.2-3(a), described in section 4.2, would reduce the traffic queue at the southbound 12th Avenue off-ramp to a *less-than-significant* level for baseline conditions.

5.2-4 Impacts to bicycle system under baseline plus project conditions.

The Proposed Project, Reduced Commercial Alternative A, Reduced Commercial Alternative B, Multi-Family Alternative C and the Single Family Alternative would result in a substantial increase in bicycle trips in the study area by residents and visitors. The Existing General Plan and Zoning Alternative would generate few additional bicycle trips.

None of the project alternatives are anticipated to hinder or eliminate the existing bikeways or interfere with the implementation of the planned bikeways in the study area. Like the Proposed Project, the Reduced Commercial Alternative A, Reduced Commercial Alternative B, Multi-Family Alternative C and Single Family Alternative would result in enhanced bicycle connectivity between the existing Curtis Park neighborhood to the north and east of the project site. Bicycle connections would be provided along the eastern edge of the project at 10th Avenue, Donner Way, and 5th Avenue. The Existing General Plan and Zoning Alternative would not provide new bicycle connections but also would not affect existing or planned bikeways and would not generate significant new bike trips.

Mitigation Measure

No mitigation would be required for any of the development alternatives.

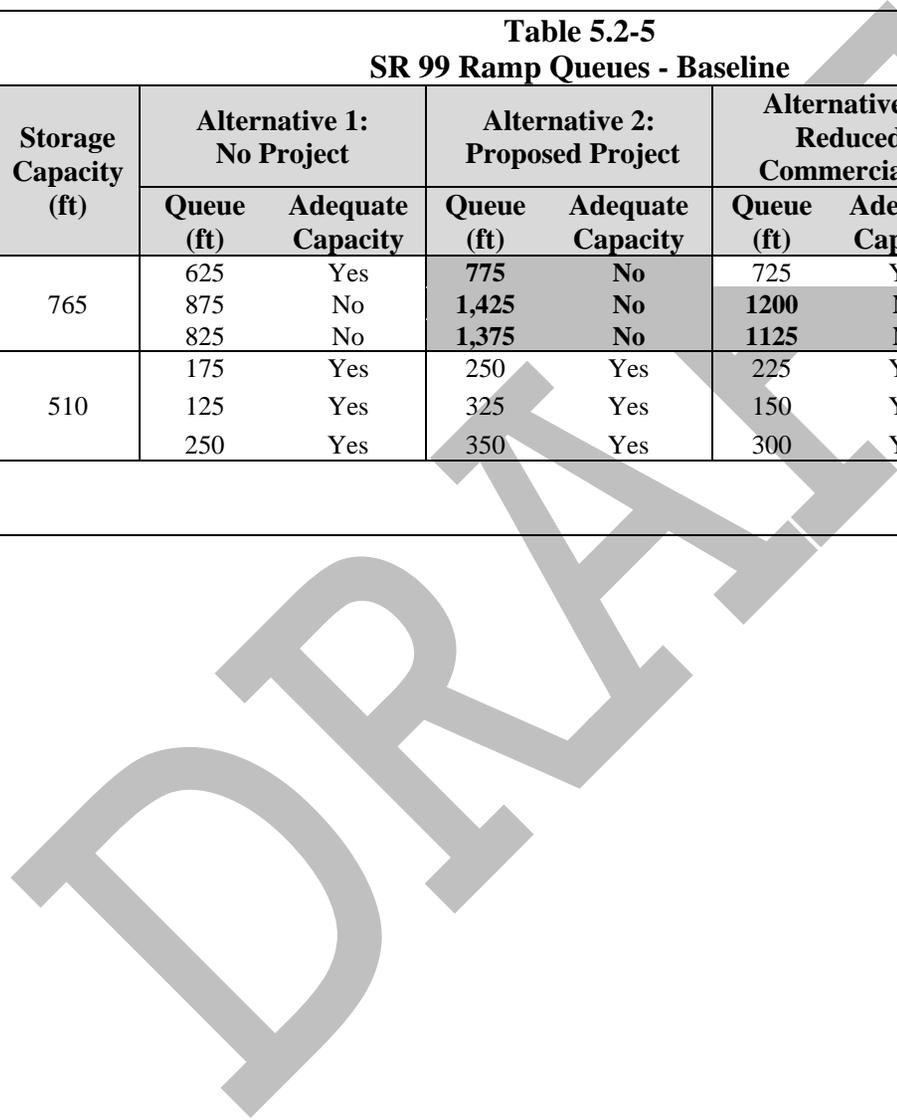
**Table 5.2-4
State Route 99 Interchange Operations - Baseline**

Ramp	Peak Hour	Alternative 1: No Project			Alternative 2: Proposed Project			Alternative 3: Reduced Commercial A			Alternative 4: Reduced Commercial B			Alternative 7: Multi-Family C		
		LOS ¹	Density	Volume	LOS ¹	Density	Volume	LOS ¹	Density	Volume	LOS ¹	Density	Volume	LOS ¹	Density	Volume
Northbound SR 99																
12th Ave. Off-Ramp	AM	C	27.54	378	D	28.07	439	C	27.84	413	C	27.82	410	C	27.92	422
	PM	C	24.64	450	C	26.00	602	C	25.40	535	C	25.33	527	C	25.62	560
	Saturday	C	25.73	390	C	27.23	561	C	26.51	480	C	26.40	467	C	26.80	513
12th Ave. On-Ramp	AM	C	24.75	934	C	24.83	997	C	24.84	1,000	C	24.84	1,002	C	24.84	1,001
	PM	C	22.10	852	C	22.40	983	C	22.28	9307	C	22.26	922	C	22.33	952
	Saturday	C	23.81	942	C	24.06	1,087	C	23.96	1,030	C	23.94	1,020	C	24.00	1,056
Southbound SR 99																
12th Ave. Off-Ramp	AM	C	24.55	1,034	C	25.15	1,100	C	24.92	1,075	C	24.89	1,072	C	24.99	1,083
	PM	D	33.79	1,260	E	35.21	1,421	D	34.68	1,361	D	34.64	1,356	D	34.89	1,385
	Saturday	D	30.97	1,116	D	32.54	1,295	D	31.86	1,218	D	31.76	1,207	D	32.14	1,250
12th Ave. On-Ramp	AM	B	16.34	201	B	16.53	255	B	16.51	248	B	16.51	248	B	16.52	250
	PM	C	22.97	238	C	23.17	366	C	23.08	308	C	23.06	298	C	23.12	331
	Saturday	C	21.91	395	C	22.19	533	C	22.07	473	C	22.05	461	C	22.12	500

NOTES:
¹ LOS = Level of Service
 Source: Dowling Associates, Inc. 2008.

**Table 5.2-5
 SR 99 Ramp Queues - Baseline**

Location	Peak Hour	Storage Capacity (ft)	Alternative 1: No Project		Alternative 2: Proposed Project		Alternative 3: Reduced Commercial A		Alternative 4: Reduced Commercial B		Alternative 7: Multi-Family C	
			Queue (ft)	Adequate Capacity	Queue (ft)	Adequate Capacity	Queue (ft)	Adequate Capacity	Queue (ft)	Adequate Capacity	Queue (ft)	Adequate Capacity
SR 99 SB Off-ramp to Sutterville Rd.	AM	765	625	Yes	775	No	725	Yes	425	Yes	750	Yes
	PM		875	No	1,425	No	1200	No	1175	No	1275	No
	Saturday		825	No	1,375	No	1125	No	1075	No	1225	No
SR 99 NB Off-ramp to Sutterville Rd.	AM	510	175	Yes	250	Yes	225	Yes	225	Yes	225	Yes
	PM		125	Yes	325	Yes	150	Yes	150	Yes	150	Yes
	Saturday		250	Yes	350	Yes	300	Yes	150	Yes	175	Yes
NOTE: Queue represents 95 th percentile queue Source: Dowling Associates, Inc., 2008.												



5.2-5 Impacts to pedestrian circulation under baseline plus project conditions.

The Proposed Project, Reduced Commercial Alternative A, Reduced Commercial Alternative B, Multi-Family Alternative C, and the Single Family Alternative would result in an increase in pedestrian trips in the study area by residents and visitors. The Existing General Plan and Zoning Alternative would generate few additional pedestrian trips.

None of the project alternatives are anticipated to result in unsafe condition for pedestrians, including unsafe pedestrian/bicycle or pedestrian/motor vehicle conflicts. For all project alternatives, all streets within the proposed site are required to be designed in accordance to the City's "Pedestrian Friendly Street Standards." Compliance with the City's design standards would provide for pedestrian needs and enhance connectivity with existing City streets.

Mitigation Measure

No mitigation would be required for any of the development alternatives.

5.2-6 Impacts to transit system under baseline plus project conditions.

All project alternatives would result in an increase demand for transit service. The level of transit use for each of the alternatives is provided in Section 4.2. The level of transit usage for each of the project alternatives is not expected to exceed the capacity of the available/planned transit system in the study area (described in Section 4.2). The impact of all project alternatives would be *less than significant*.

Mitigation Measure

No mitigation would be required.

5.2-7 Impacts to on-site traffic circulation and safety under baseline plus project conditions.

The Reduced Commercial Alternative A, Reduced Commercial Alternative B, and Multi-Family Alternative C would have similar street system as described for the Proposed Project in Section 4.2. The same impacts described in Section 4.2 for the Proposed Project would also apply to these project alternatives. In addition, the project alternatives appear to show two through lanes northbound on Road A through the intersection of the Area A driveway. The design does not appear to include enough distance on northbound Road A north of the driveway to transition from two northbound through lanes to one lane. The design concept reflected on the site plan would not comply with City design standards or normal traffic engineering practices and is considered a *potentially significant impact*.

No street system layouts have been provided for the Single Family Alternative or the Existing General Plan and Zoning Alternative, so it is not possible to determine whether or not the design of these alternatives would comply with City design standards and normal traffic engineering practices. Development of the Single Family

Alternative or the Existing General Plan and Zoning Alternative would be a ***potentially significant impact***.

Mitigation Measure

The same on-site traffic circulation and safety mitigation measures described in Section 4.2 for the Proposed Project would also apply to the Reduced Commercial Alternative A, Reduced Commercial Alternative B, and Multi-Family Alternative C.

The following mitigation measure would be required for the Reduced Commercial Alternative A, Reduced Commercial Alternative B, and Multi-Family Alternative C to reduce the potentially significant impact for baseline conditions to a ***less-than-significant*** level.

5.2-1(a) *The design plans for the project shall be consistent with City standards and are subject to the approval of the City Development Services Department, Development Engineering Division.*

5.2-1(b) *The northbound lane geometry on Road A between Sutterville Road and Area 1 driveway shall be changed from two through lanes and one left-turn lane to one through lane and one left-turn lane that would serve only the left-turning movement in Area 1. Adequate signing and pavement marking for the left-turn lane drop shall be provided. Pedestrian access would be improved by a narrower street.*

5.2-8 Impacts to on-site vehicle and bicycle parking capacities

Vehicle and bicycle parking capacities for the Reduced Commercial Alternative A, Reduced Commercial Alternative B, and Multi-Family Alternative C are not available. Therefore, the impacts for these land use alternatives cannot be determined. The project impacts for these alternatives may be ***potentially significant***.

Mitigation Measure

The same on-site vehicle and bicycle capacity mitigation measures described in Section 4.2-8 for the Proposed Project would also be applicable to the Reduced Commercial Alternative A, Reduced Commercial Alternative B, and Multi-Family Alternative C if impacts are found.

5.2-9 Impacts during construction

Potential impacts during construction for the Reduced Commercial Alternative A, Reduced Commercial Alternative B, and Multi-Family Alternative C would be the same as the Proposed Project as described in Section 4.2-9.

Mitigation Measure

The same mitigation measures described in Section 4.2-9 for the Proposed Project would also be applicable to the Reduced Commercial Alternative A, Reduced

Commercial Alternative B, and Multi-Family Alternative C. After implementation of the measures, the construction impact would be *less-than-significant*.

Cumulative Conditions

A summary of intersection operations for the project alternatives is provided in Table 5.2-6. Peak hour turning movement traffic volumes are shown in Appendix D.

5.2-8 Cumulative impacts to study intersections.

Project Alternatives

All project alternatives would add traffic to study intersections. Reduced Commercial Alternative A, Reduced Commercial Alternative B, and Multi-Family Alternative C would cause significant impacts for cumulative conditions at the following intersections:

- (a) Freeport Boulevard / 2nd Avenue
- (b) 24th Street / 2nd Avenue
- (c) 24th Street / Portola Way
- (d) Sutterville Road / Freeport Boulevard (north)
- (e) Sutterville Road/ City Collage Drive (please add its mitigation measure also)
- (f) Sutterville Road / Road A
- (g) Sutterville Road / Curtis Drive West
- (h) Sutterville Road / Franklin Boulevard

The project alternatives would cause traffic operations at all of the intersections listed to drop from LOS C or better to LOS D or worse, or would increase the delay by five seconds or more for intersections that would operate below LOS C without the project. This is considered a *significant impact*.

Further, the Multi-Family Alternative C will cause the operation to degrade to substandard levels at the following intersection:

- (i) Road A / Area 1

Although no quantitative assessment of traffic impacts was performed for the Single Family Alternative and the Existing General Plan and Zoning Alternative (Industrial), some conclusions were drawn regarding the potential cumulative impacts to study intersections based on the trip generation estimates shown in Section 4.2.

Table 5.2-6 Intersection Levels of Service for Project Alternatives – Cumulative Conditions⁶												
Intersection	Traffic Control	Peak Hour	Alternative 1: No Project		Alternative 2: Proposed Project		Alternative 3: Reduced Commercial A		Alternative 4: Reduced Commercial B		Alternative 7: Multi-Family C	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
1. 24th St / Broadway	Signal	AM	B	18.1	B	18.4	B	18.4	B	18.4	B	18.4
		PM	D	41.0	D	44.2	D	43.2	D	43.1	D	43.7
		Saturday	B	14.1	B	15.0	B	14.6	B	14.6	B	14.8
2. Freeport Bl / 2nd Av	Signal	AM	C	32.0	B	15.7	C	34.0	C	34.1	C	34.1
		PM	F	100.1	D	48.7	F	106.6	F	106.6	F	108.3
		Saturday	C	20.1	B	14.1	C	21.0	C	21.0	C	21.3
3. 21st St / 2nd Av	Signal	AM	B	11.9	B	12.5	B	12.5	B	12.6	B	12.5
		PM	B	14.6	B	15.3	B	15.0	B	15.0	B	15.1
		Saturday	A	9.7	B	10.5	B	10.2	B	10.2	B	10.3
4. 24th St / 2nd Av	4-Way Stop	AM	E	46.2	F	67.8	F	69.3	F	70.8	F	69.5
		PM	E	39.3	F	63.8	F	55.4	F	54.9	F	58.3
5. 21th St / 4th Av	Stop Sign	AM	A	1.3	A	1.4	A	1.4	A	1.4	A	1.4
		PM	A	0.5	A	0.9	A	0.8	A	0.7	A	0.8
		Saturday	A	0.8	A	1.3	A	1.2	A	1.1	A	1.3
6. Freeport Bl / 21st St	Signal	AM	E	62.9	E	63.8	E	63.9	E	63.9	E	63.7
		PM	F	84.5	F	86.1	F	85.2	F	85.0	F	85.3
		Saturday	C	22.4	C	23.0	C	22.7	C	22.7	C	22.8
7. Freeport Bl / Vallejo Wy	Signal	AM	B	19.6	C	21.0	C	20.1	C	20.1	C	20.2
		PM	B	12.0	B	12.9	B	12.5	B	12.4	B	12.7
		Saturday	A	7.1	A	7.5	A	7.3	A	7.2	A	7.3
8. 24th St / Portola Wy	4-Way Stop	AM	D	32.6	F	52.0	F	52.8	F	53.3	F	53.2
		PM	C	22.4	F	61.4	E	41.8	E	39.9	E	49.1
9. 24th St / 5th Av	Stop Sign	AM	A	1.7	A	2.0	A	1.9	A	2.0	A	2.0
		PM	A	1.2	A	2.2	A	1.8	A	1.8	A	2.1
10. 24th St / Donner Wy	Stop Sign	AM	A	1.7	A	2.9	A	2.8	A	2.8	A	2.8
		PM	A	1.0	A	2.7	A	2.4	A	2.4	A	2.4
11. Franklin Bl / 5th Av	Signal	AM	A	5.8	A	6.0	A	6.0	A	6.0	A	6.0
		PM	A	6.2	A	6.3	A	6.3	A	6.3	A	6.3
		Saturday	A	4.8	A	4.7	A	4.7	A	4.7	A	4.7
12. 24th St / 10th Av	Stop Sign	AM	A	1.0	A	2.4	A	2.3	A	2.3	A	2.4
		PM	A	0.7	A	3.9	A	3.7	A	3.7	A	3.8

Table 5.2-6 Intersection Levels of Service for Project Alternatives – Cumulative Conditions ⁶												
Intersection	Traffic Control	Peak Hour	Alternative 1: No Project		Alternative 2: Proposed Project		Alternative 3: Reduced Commercial A		Alternative 4: Reduced Commercial B		Alternative 7: Multi-Family C	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
13. 24th St / 11th Av	Stop Sign	AM	A	1.1	A	2.6	A	2.5	A	2.5	A	2.5
		PM	A	1.2	A	5.2	A	5.0	A	5.0	A	5.1
14. Sutterville / Freepport (North)	Signal	AM	E	68.8	E	68.8	E	68.7	E	68.7	E	68.7
		PM	C	34.3	D	38.8	D	36.6	D	36.2	D	37.5
		Saturday	B	17.7	B	18.5	B	18.1	B	18.1	B	18.3
15. Sutterville / 21st St	Signal	AM	B	11.2	B	11.7	B	11.5	B	11.5	B	11.6
		PM	A	6.6	A	7.3	A	6.9	A	6.9	A	7.1
		Saturday	A	4.8	A	4.8	A	4.8	A	4.8	A	4.8
16. Sutterville / City College Dr	Signal	AM	E	73.8	F	82.6	E	79.5	E	79.1	F	80.4
		PM	D	46.7	E	67.7	E	57.4	E	56.1	E	61.4
		Saturday	B	17.2	B	18.4	B	18.6	B	18.4	B	17.8
17. Sutterville / Road A	Yield or Signal ³	AM	C	0.5	C	22.2	C	21.0	C	34.8	C	23.4
		PM	C	0.3	D	42.4	D	46.5	E	79.9	E	65.6
		Saturday	B	0.5	C	27.8	B	17.3	B	18.4	C	25.2
18. Sutterville / 24th St	Signal or Stop Sign ⁴	AM	C	19.9	A	2.0	A	4.9	A	4.8	A	5.2
		PM	D	32.9	A	0.5	A	0.9	A	1.0	A	1.0
		Saturday	A	6.3	A	0.2	A	0.3	A	0.4	A	0.4
19. Sutterville / Curtis Dr West	Stop Sign	AM	A	0.7	A	0.8	A	0.8	A	0.8	A	0.8
		PM	C	21.0	F	54.6	E	37.1	D	35.0	E	43.2
		Saturday	A	7.6	D	34.2	C	20.1	C	17.9	D	25.4
20. Sutterville / Franklin Bl	Signal	AM	D	46.7	E	57.3	D	54.2	D	48.6	E	55.4
		PM	D	43.4	E	75.4	E	60.8	D	48.6	E	65.4
		Saturday	C	29.3	D	36.9	C	32.9	C	31.1	C	34.4
21. Sutterville / SR 99 SB Ramp	Signal	AM	D	41.1	C	26.0	C	25.4	C	25.4	C	25.6
		PM	D	51.6	C	30.8	C	26.4	CC	26.0	C	27.9
		Saturday	D	54.8	D	38.0	C	30.7	C	29.9	C	33.5
22. Sutterville / SR 99 NB Ramps	Signal	AM	C	20.4	C	23.4	C	22.9	C	22.9	C	23.1
		PM	C	26.4	D	37.2	C	31.1	C	30.5	C	33.0
		Saturday	C	23.5	D	38.7	C	29.9	C	28.8	C	33.2

**Table 5.2-6
Intersection Levels of Service for Project Alternatives – Cumulative Conditions⁶**

Intersection	Traffic Control	Peak Hour	Alternative 1: No Project		Alternative 2: Proposed Project		Alternative 3: Reduced Commercial A		Alternative 4: Reduced Commercial B		Alternative 7: Multi-Family C	
			LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²	LOS ¹	Delay ²
23. Sutterville / Freepport (South)	Signal	AM	D	44.9	D	48.2	D	46.7	D	46.5	D	47.1
		PM	E	64.2	E	69.1	E	66.8	E	66.3	E	67.7
		Saturday	D	45.9	D	48.4	D	47.2	D	47.0	D	47.7
24. Road A / DonnerWy / Road G	Signal	AM	na	na	A	8.7	A	8.7	A	8.7	A	8.7
		PM	na	na	A	5.7	A	5.5	A	5.5	A	5.6
		Saturday	na	na	A	4.5	A	4.8	A	4.9	A	4.6
25. Road A / Road E	Stop Sign	AM	na	na	A	0.3	A	0.4	A	0.5	A	0.3
		PM	na	na	A	0.1	A	0.3	A	0.4	A	0.2
		Saturday	na	na	A	0.3	A	0.4	A	0.7	A	0.3
26. Road A / Area 3	Stop Sign	AM	na	na	A	3.3	A	2.2	A	1.8	A	2.3
		PM	na	na	C	18.5	A	2.2	A	1.1	A	3.0
		Saturday	na	na	A	7.1	A	2.8	A	1.5	A	3.4
27. Road A / Road C	Round- about	AM	na	na	A	5.2	A	4.8	A	4.7	A	4.8
		PM	na	na	B	11.6	A	7.8	A	7.4	A	8.6
		Saturday	na	na	A	5.1	A	4.1	A	4.0	A	4.3
28. Road A / Area 1	Signal or Stop Sign ⁵	AM	na	na	A	4.1	A	1.6	A	1.7	A	1.9
		PM	na	na	F	62.4	A	7.5	A	6.8	E	42.8
		Saturday	na	na	B	14.1	A	5.7	A	5.6	B	14.0
29. Road A / Area 2	Stop Sign	AM	na	na	A	0.8	A	0.9	A	0.6	A	1.0
		PM	na	na	B	14.4	A	3.9	A	1.9	A	7.8
		Saturday	na	na	A	4.9	A	3.1	A	1.9	A	4.1
30. Franklin Bl / 5 th Av (South)	Stop Sign	AM	A	0.9	A	1.0	A	1.2	A	1.2	A	1.2
		PM	A	1.1	A	2.5	A	2.0	A	1.9	A	2.4
		Saturday	A	1.8	A	2.6	A	2.3	A	2.3	A	2.5

¹ LOS = Level of Service

² Weighted average control delay in seconds

³ Existing Ramp is controlled by a yield sign; New Road A will be signalized.

⁴ Existing intersection is signalized; the Project would convert the intersection to stop sign control.

⁵ Intersection is signalized under the Proposed Project Alternative.

Mitigation measures for baseline conditions are assumed to be in place under cumulative conditions analysis.

Shaded values indicate a potential significant impact.

Source: Dowling Associates, Inc., 2008.

The Single Family Alternative would generate 22 percent of the p.m. peak hour external trips generated by the Proposed Project and 20 percent of the Saturday peak hour external trips. It is likely that this alternative would cause significant cumulative impacts at the following intersections:

- (c) 24th Street / Portola Way
- (d) Sutterville Road / Freeport Boulevard (north)
- (f) Sutterville Road / Road A
- (h) Sutterville Road / Franklin Boulevard

It is also possible that the Single Family Alternative could cause cumulative significant impacts at other intersections.

The Existing General Plan and Zoning Alternative would generate 89 percent of the a.m. peak hour trips generated by the Proposed Project, 37 percent of the p.m. peak hour external trips, and 13 percent of the Saturday peak hour external trips. It is likely that this alternative would cause significant cumulative impacts at the same intersections listed above for the Single Family Alternative, plus potentially the Sutterville Road / Curtis Drive West intersection. It is also possible that the Existing General Plan and Zoning Alternative could cause significant impacts at other intersections.

Mitigation Measures

- 5.2-8(a) *Mitigation Measure 4.2-1(a), described in Section 4.2, would reduce the impact at the Freeport Boulevard / 2nd Avenue intersection for the Reduced Commercial Alternative A, Reduced Commercial Alternative B, Multi-Family Alternative C, and Existing General Plan and Zoning Alternative to a **less-than-significant** level. No mitigation would likely be required for the Single Family Alternative at this intersection.*
- 5.2-8(b) *Mitigation Measure 4.2-8(a), described in Section 4.2, would reduce the impact at the 24th Street / 2nd Avenue intersection for all the project alternatives to a **less-than-significant** level.*
- 5.2-8(c) *Mitigation Measure 4.2-8(b), described in Section 4.2, would reduce the impact at the 24th Street / Portola Way intersection for all the project alternatives to a **less-than-significant** level.*
- 5.2-8(d) *Mitigation Measure 4.2-8(c), described in Section 4.2, would reduce the impact at the Sutterville Road / Freeport Boulevard (north) intersection for all the project alternatives to a **less-than-significant** level.*
- 5.2-8(e) *Mitigation Measure 4.2-8(d), described in Section 4.2, would reduce the impact at the Sutterville Road / City College Dr intersection for all the project alternatives to a **less-than-significant** level.*

- 5.2-8(f) *Mitigation Measure 4.2-8(e), described in Section 4.2, would reduce the impact at the Sutterville Road / Road A intersection for all the project alternatives to a **less-than-significant** level.*
- 5.2-8(g) *No feasible mitigation measure was identified for the Sutterville Road / Curtis Drive West intersection. Adding a southbound right turn lane to the intersection would mitigate the impact but was not considered to be feasible because of the need for additional right-of-way. The cumulative impact for the Reduced Commercial Alternative A, Reduced Commercial Alternative B, Multi-Family Alternative C and Existing General Plan and Zoning Alternative would remain **significant and unavoidable**. No mitigation would likely be required for the Single Family Alternative at this intersection.*
- 5.2-8(h) *Add one eastbound right-turn lane would reduce the impact at the Sutterville Road / Franklin Boulevard intersection for all the project alternatives except for Reduced Commercial Alternative A and Multi-Family Alternative C during the p.m. peak hour which would require the cycle length to also be increase to 80 seconds and 85 seconds, respectively. Implementation of these measures would reduce the impacts for all the project alternatives to a **less-than-significant** level.*
- 5.2-8(i) *Mitigation Measure 4.2-8(i), described in Section 4.2, would reduce the impact at the Road A / Area 1 intersection for the Multi-Family Alternative C to a **less-than-significant** level.*

A summary of cumulative traffic operations on roadway segments for the project alternatives is provided in 5.2-7.

5.2-9 Cumulative impacts to study roadway segments.

Project Alternatives

As with the Proposed Project, the Reduced Commercial Alternative A, Reduced Commercial Alternative B, and the Multi-Family Alternative C would add traffic to roadway segments in 2027 and cause significant impacts for cumulative conditions on the following roadway segments:

- (a) Sutterville Railroad Overcrossing
- (b) Sutterville Road between E. Curtis Drive and W. Curtis Drive
- (c) 24th Street between Portola Way and Marshall Way

Further, Multi-Family Alternative C along with the Proposed Project would also result in significant impacts for cumulative conditions on two additional roadway segments:

- (d) Road A north of Road G
- (e) Road A north of Area 1

In addition, as discussed in Section 4.2, the Proposed Project would also result in significant impacts at Freeport Boulevard north of 21st Street, Road A north of Road C, and Road A north of Area 2.

The Reduced Commercial Alternative A, Reduced Commercial Alternative B, and Multi-Family Alternative C would cause traffic operations at all of the roadway segments listed to drop from LOS C or better to LOS D or worse, or would increase the v/c ratio by 0.02 or more for roadway segments that would operate below LOS C without the project. This is considered a *significant impact*.

Although no quantitative assessment of traffic impacts was performed for the Single Family Alternative and the Existing General Plan and Zoning Alternative (Industrial), some conclusions were drawn regarding the potential cumulative impacts to study roadway segments based on the trip generation estimates shown in Section 4.2.

The Single Family Alternative would generate 36 percent of the daily trips generated by the Proposed Project and the Existing General Plan and Zoning Alternative would generate 31 percent of the Proposed Project daily trips. It is likely that these alternatives would cause significant cumulative impacts at the following roadway segments:

- (b) Sutterville Road between E. Curtis Drive and W. Curtis Drive
- (c) 24th Street between Portola Way and Marshall Way

Mitigation Measures

No mitigation was identified to reduce the significant impact for cumulative conditions on roadway segments to less than significant. To reduce the impact to less than significant for all project alternatives, Sutterville Road and 24th Streets would need to be widened. No roadway widening is considered to be feasible.

Mitigation Measure 4.2-2(a), described in Section 4.2, requires the developer to provide a transit or pedestrian connection between the commercial areas of the project site and the City College light rail station. This mitigation measure would reduce the impact on roadway segments; however, the impact after mitigation would remain *significant and unavoidable*.

**Table 5.2-7
Roadway Levels of Service for Project Alternatives – Cumulative Conditions**

RoadWY Segment	Lanes	Alternative 1: No Project			Alternative 2: Proposed Project			Alternative 3: Reduced Commercial A			Alternative 4: Reduced Commercial B			Alternative 7: Multi-Family C		
		ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³
Weekday																
Sutterville Rd Railroad Overcrossing	4	40,337	F	1.12	43,165	F	1.20	41,969	F	1.17	41,807	F	1.16	42,427	F	1.18
Sutterville Rd btw E. & W. Curtis Dr	4	37,709	F	1.05	43,330	F	1.20	41,224	F	1.15	40,911	F	1.14	42,048	F	1.17
24th St north of 10th Av	2	6,029	B	0.69	1,301	A	0.15	1,355	A	0.15	1,355	A	0.15	1,347	A	0.15
24th St btw Portola Wy & Marshall Wy	2	6,085	B	0.70	7,687	D	0.88	7,337	D	0.84	7,289	D	0.83	7,492	D	0.86
Donner Wy btw 24th St & 25th St	2	1,197	A	0.24	1,863	A	0.37	1,788	A	0.36	1,778	A	0.36	1,763	A	0.35
Freeport Blvd north of 21st St	2	14,375	E	0.96	14,691	E	0.98	14,563	E	0.97	14,568	E	0.97	14,601	E	0.97
21st St north of 4th Avnue	3	16,024	C	0.71	16,516	C	0.73	16,378	C	0.73	16,334	C	0.73	16,462	C	0.73
Portola Wy btw 21st St & 24th St	2	1,897	A	0.38	1,901	A	0.38	1,901	A	0.38	1,897	A	0.38	1,901	A	0.38
Marshall Wy btw 21st St & 24th St	2	3,068	B	0.61	1,005	A	0.20	586	A	0.12	508	A	0.10	772	A	0.15
4th Av btw 21st St & 24th St	2	632	A	0.13	632	A	0.13	632	A	0.13	632	A	0.13	632	A	0.13
3rd Av btw 21st St & 24th St	2	360	A	0.07	360	A	0.07	360	A	0.07	360	A	0.07	360	A	0.07
24th St just south of Donner Wy	2	5,232	A	0.60	1,126	A	0.13	1,173	A	0.13	1,173	A	0.13	1,167	A	0.13
10th Av just east of 24th St	2	686	A	0.14	686	A	0.14	686	A	0.14	686	A	0.14	686	A	0.14
11th Av just east of 24th St	2	658	A	0.13	658	A	0.13	658	A	0.13	658	A	0.13	658	A	0.13
5th Av just east of 24th St	2	1,858	A	0.37	2,714	A	0.54	2,560	A	0.51	2,553	A	0.51	2,745	A	0.55
W. Pacific Av north of Wilmington Av	2	1,311	A	0.26	3,034	B	0.61	2,134	A	0.43	2,081	A	0.42	2,447	A	0.49
E. Pacific Av just north of Wilmington Av	2	931	A	0.19	931	A	0.19	931	A	0.19	931	A	0.19	931	A	0.19
Road A north of Road G	2				7,239	D	0.83	6,728	C	0.77	6,671	C	0.76	6,990	C	0.80
Road A north of Road E	2				6,089	B	0.70	5,568	B	0.64	5,521	B	0.63	5,824	B	0.67
Road A north of Area 3	2				6,140	C	0.70	5,642	B	0.64	5,635	B	0.64	5,881	B	0.67
Road A north of Road C	2				7,105	D	0.81	5,649	B	0.65	5,555	B	0.63	5,995	B	0.69
Road A north of Area 2	2				7,643	D	0.87	6,291	C	0.72	6,217	C	0.71	6,647	C	0.76
Road A north of Area 1	2				7,821	D	0.89	6,644	C	0.76	6,140	C	0.70	7,014	D	0.80
Road A north of Sutterville Road	4				9,979	A	0.57	8,107	A	0.46	7,713	A	0.44	8,944	A	0.51

**Table 5.2-7
Roadway Levels of Service for Project Alternatives – Cumulative Conditions**

RoadWy Segment	Lanes	Alternative 1: No Project			Alternative 2: Proposed Project			Alternative 3: Reduced Commercial A			Alternative 4: Reduced Commercial B			Alternative 7: Multi-Family C		
		ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³	ADT ¹	LOS ²	V/C ³
Saturday																
Suterville Rd Railroad Overcrossing	4	37,472	F	1.04	44,112	F	1.23	40,999	F	1.14	40,419	F	1.12	42,323	F	1.18
Suterville Rd btw E. & W. Curtis Dr	4	28,023	C	0.78	37,259	F	1.03	33,201	E	0.92	32,382	D	0.90	34,928	E	0.97
Freeport Boulevard north of 21st St	2	11,052	C	0.74	11,664	C	0.78	11,387	C	0.76	11,376	C	0.76	11,480	C	0.77
21st St north of 4th Avnue	3	11,357	A	0.50	12,378	A	0.55	12,017	A	0.53	11,880	A	0.53	12,203	A	0.54
<p>Source: Dowling Associates, Inc., 2008</p> <p>¹ADT = Avraged daily traffic</p> <p>²LOS = Level of service</p> <p>³V/C = Volume/Capacity</p>																

A summary of freeway ramp operations for the project alternatives is provided in Table 5.2-8 and a summary of vehicle queues at the SR 99 interchange ramps is provided in Table 5.2-9 for cumulative conditions.

5.2-10 Cumulative Impacts to freeway ramps.

All project alternatives would add traffic to the Sutterville Road 99 freeway ramps. The southbound 12th Avenue off-ramp would operate below standard during the p.m. and Saturday peak hours without the project. The project would increase the density in the area where the ramp diverges from the freeway. The freeway operates at LOS F in the southbound direction during the p.m. peak hour and LOS E during the Saturday peak hour. The project would cause the diverge area to be worse than the freeway level of service during the Saturday peak hour and would add significant traffic to the freeway mainline. This is considered a *significant impact*.

Mitigation Measure

No feasible mitigation measure was identified that would reduce the impact of the project on SR 99. Widening the freeway would reduce the impact but was not considered feasible. Although implementation of Mitigation Measure 4.2-2(a) and Mitigation Measure 5.2-10(a) would reduce the impact of the project on SR 99, the impact after mitigation would remain *significant and unavoidable*.

**Table 5.2-8
State Route 99 Interchange Operations - Cumulative**

Ramp	Peak Hour	Alternative 1: No Project			Alternative 2: Proposed Project			Alternative 3: Reduced Commercial A			Alternative 4: Reduced Commercial B			Alternative 7: Multi-Family C		
		LOS ¹	Density	Volume	LOS ¹	Density	Volume	LOS ¹	Density	Volume	LOS ¹	Density	Volume	LOS ¹	Density	Volume
Northbound SR 99																
12th Ave. Off-Ramp	AM	E	35.46	516	F	35.99	577	E	35.76	551	E	35.74	548	F	35.84	560
	PM	D	29.18	764	D	30.51	916	D	29.92	849	D	29.85	841	D	30.14	874
	Saturday	D	30.2	536	D	31.7	707	D	30.99	626	D	30.88	613	D	31.28	659
12th Ave. On-Ramp	AM	D	30.23	1,015	D	30.19	1,078	D	30.19	1,081	D	30.18	1,083	D	30.18	1,082
	PM	C	24.03	1,005	C	24.25	1,136	C	24.16	1,083	C	24.15	1,075	C	24.2	1,105
	Saturday	C	25.72	1,031	C	25.87	1,176	C	25.81	1,119	C	25.79	1,109	C	25.84	1,145
Southbound SR 99																
12th Ave. Off-Ramp	AM	C	27.5	1,143	D	28.07	1,209	C	27.85	1,184	C	27.83	1,181	C	27.92	1,192
	PM	F	49.57	1,349	F	50.97	1,510	F	50.45	1,450	F	50.41	1,445	F	50.66	1,474
	Saturday	F	41.43	1,193	F	43	1,372	F	42.32	1,295	F	42.22	1,284	F	42.6	1,327
12th Ave. On-Ramp	AM	B	19.26	322	B	19.42	376	B	19.4	369	B	19.4	369	B	19.4	371
	PM	F	38.33	449	F	37.92	577	F	38.1	519	F	38.13	509	F	38.03	542
	Saturday	D	30.58	592	D	30.47	730	D	30.52	670	D	30.53	658	D	30.5	697
NOTES:																
¹ LOS = Level of Service																
Source: Dowling Associates, Inc. 2008																

**Table 5.2-9
 SR 99 Ramp Queues - Cumulative**

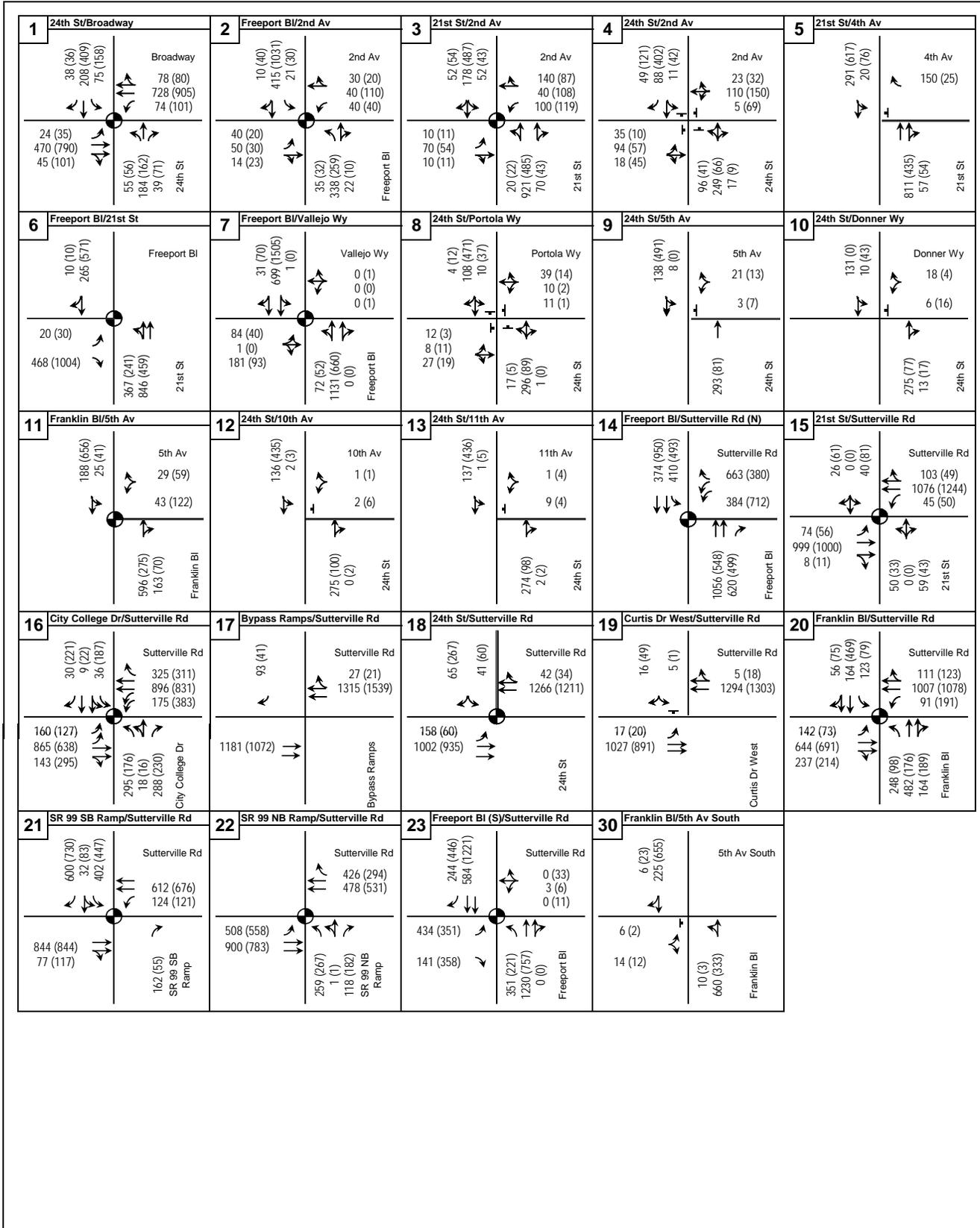
Location	Peak Hour	Storage Capacity (ft)	Alternative 1: No Project		Alternative 2: Proposed Project ²		Alternative 3: Reduced Commercial A ²		Alternative 4: Reduced Commercial B ²		Alternative 7: Multi-Family C ²	
			Queue ¹ (ft)	Adequate Capacity	Queue ¹ (ft)	Adequate Capacity	Queue ¹ (ft)	Adequate Capacity	Queue ¹ (ft)	Adequate Capacity	Queue ¹ (ft)	Adequate Capacity
SR 99 SB Off-ramp to Sutterville Rd.	AM	765	975	No	300	Yes	300	Yes	300	Yes	300	Yes
	PM		1175	No	750	Yes	375	Yes	375	Yes	400	Yes
	Saturday		1075	No	775	No	375	Yes	350	Yes	400	Yes
SR 99 NB Off-ramp to Sutterville Rd.	AM	510	325	Yes	375	Yes	350	Yes	350	Yes	375	Yes
	PM		450	Yes	525	No	500	Yes	500	Yes	500	Yes
	Saturday		325	Yes	500	Yes	425	Yes	400	Yes	450	Yes

¹Queue represents 95th percentile queue.

²Baseline mitigations are assumed to be in place for Proposed Project and all alternatives under cumulative conditions.

Source: Dowling Associates, Inc., 2008.

APPENDIX L

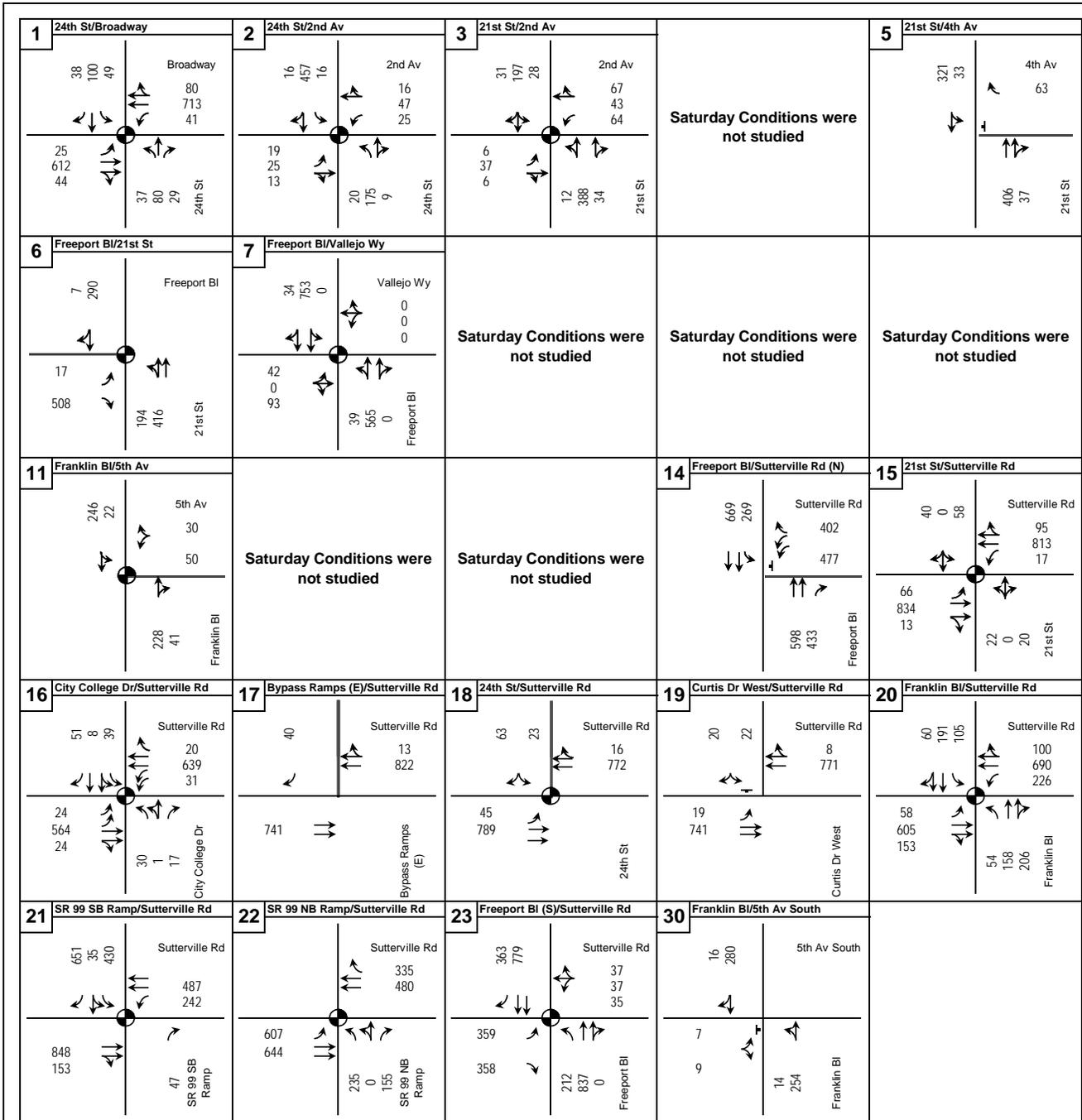


KEY

31 (27) = AM (PM) peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



Baseline No Project - AM & PM Peak Hour Traffic Volumes, Lane & Traffic Controls



KEY



31 = Saturday peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane

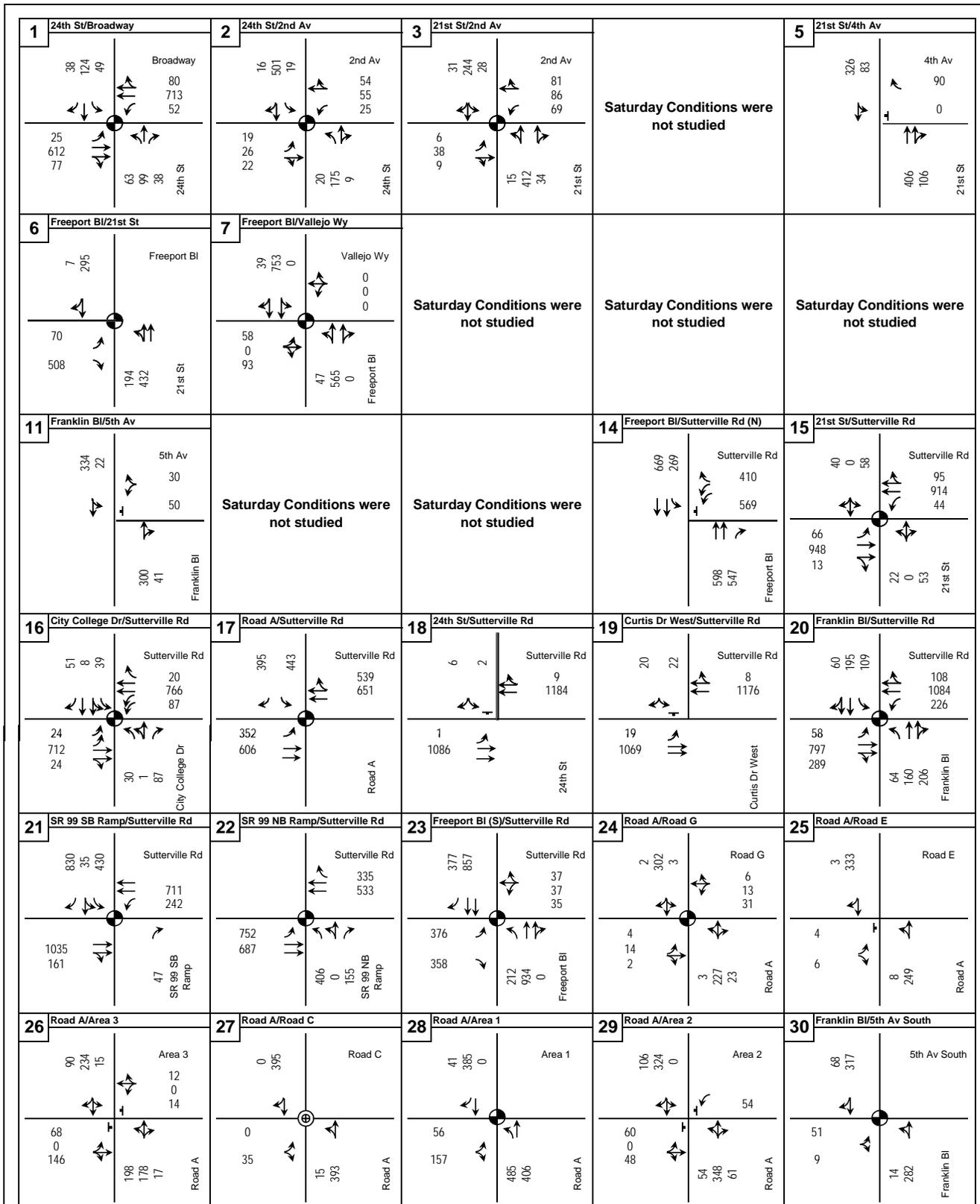


Baseline No Project - Saturday Peak Hour Traffic Volumes, Lane & Traffic Controls

1 24th St/Broadway 	2 24th St/2nd Av 	3 21st St/2nd Av 	4 24th St/2nd Av 	5 24th St/5th Av
6 Freepoint Bl/21st St 	7 Freepoint Bl/Vallejo Wy 	8 24th St/Portola Wy 	9 24th St/5th Av 	10 24th St/Donner Wy
11 Franklin Bl/5th Av 	12 24th St/10th Av 	13 24th St/11th Av 	14 Freepoint Bl/Sutterville Rd (N) 	15 21st St/Sutterville Rd
16 City College Dr/Sutterville Rd 	17 Road A/Sutterville Rd 	18 24th St/Sutterville Rd 	19 Curtis Dr West/Sutterville Rd 	20 Franklin Bl/Sutterville Rd
21 SR 99 SB Ramp/Sutterville Rd 	22 SR 99 NB Ramp/Sutterville Rd 	23 Freepoint Bl (S)/Sutterville Rd 	24 Road A/Road G 	25 Road A/Road E
26 Road A/Area 3 	27 Road A/Road C 	28 Road A/Area 1 	29 Road A/Area 2 	30 Franklin Bl/5th Av South

KEY
 31 (27) = AM (PM) peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane





KEY
 31 = Saturday peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



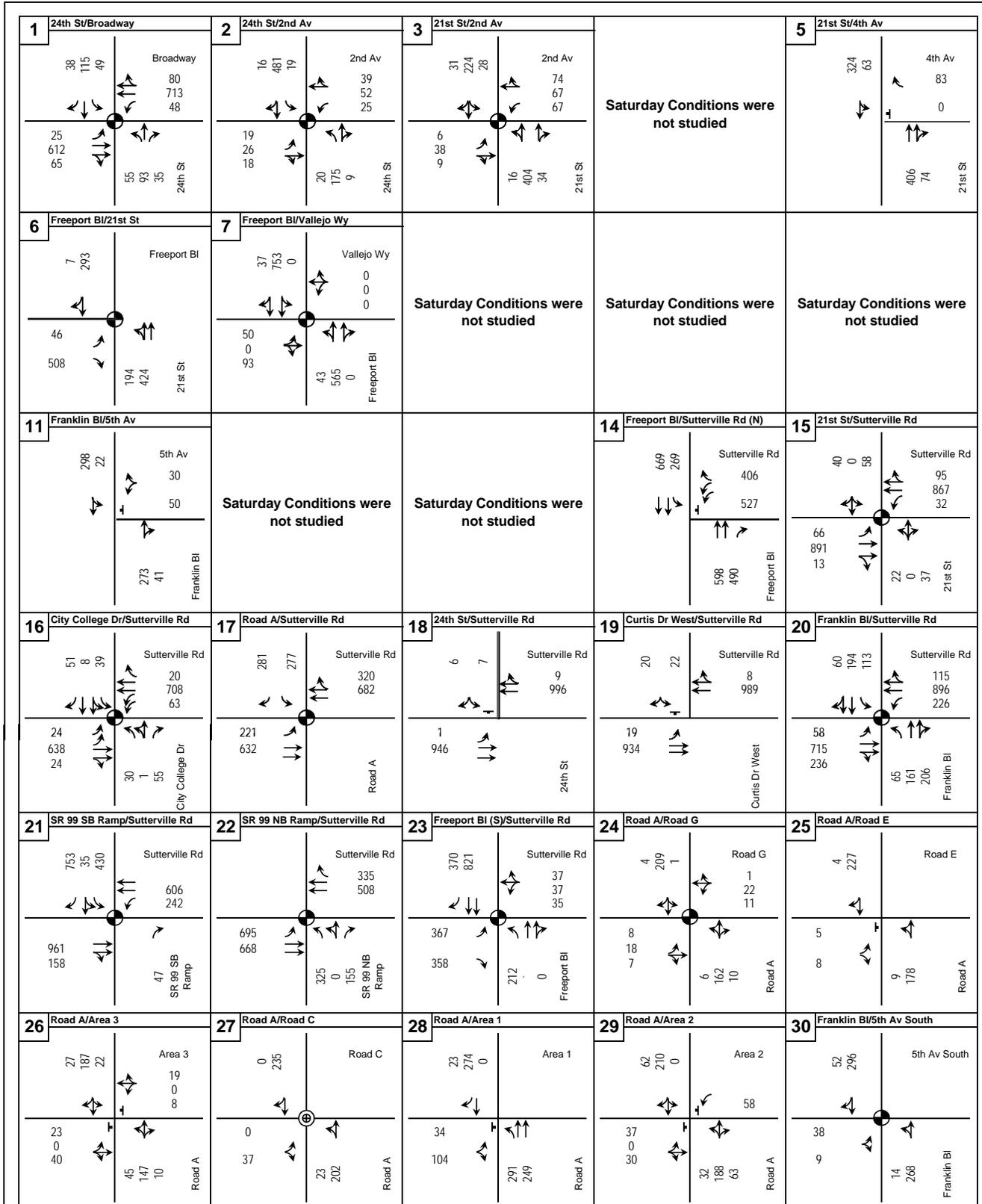
Baseline Project - Saturday Peak Hour Traffic Volumes, Lane & Traffic Controls

1 24th St/Broadway 	2 24th St/2nd Av 	3 21st St/2nd Av 	4 24th St/2nd Av 	5 24th St/5th Av
6 Freeport Bl/21st St 	7 Freeport Bl/Vallejo Wy 	8 24th St/Portola Wy 	9 24th St/5th Av 	10 24th St/Donner Wy
11 Franklin Bl/5th Av 	12 24th St/10th Av 	13 24th St/11th Av 	14 Freeport Bl/Sutterville Rd (N) 	15 21st St/Sutterville Rd
16 City College Dr/Sutterville Rd 	17 Road A/Sutterville Rd 	18 24th St/Sutterville Rd 	19 Curtis Dr West/Sutterville Rd 	20 Franklin Bl/Sutterville Rd
21 SR 99 SB Ramp/Sutterville Rd 	22 SR 99 NB Ramp/Sutterville Rd 	23 Freeport Bl (S)/Sutterville Rd 	24 Road A/Road G 	25 Road A/Road E
26 Road A/Area 3 	27 Road A/Road C 	28 Road A/Area 1 	29 Road A/Area 2 	30 Franklin Bl/5th Av South

KEY
 31 (27) = AM (PM) peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



Baseline Reduced Comm. A - AM & PM Peak Hour Traffic Volumes, Lane & Traffic Controls



KEY
 31 = Saturday peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



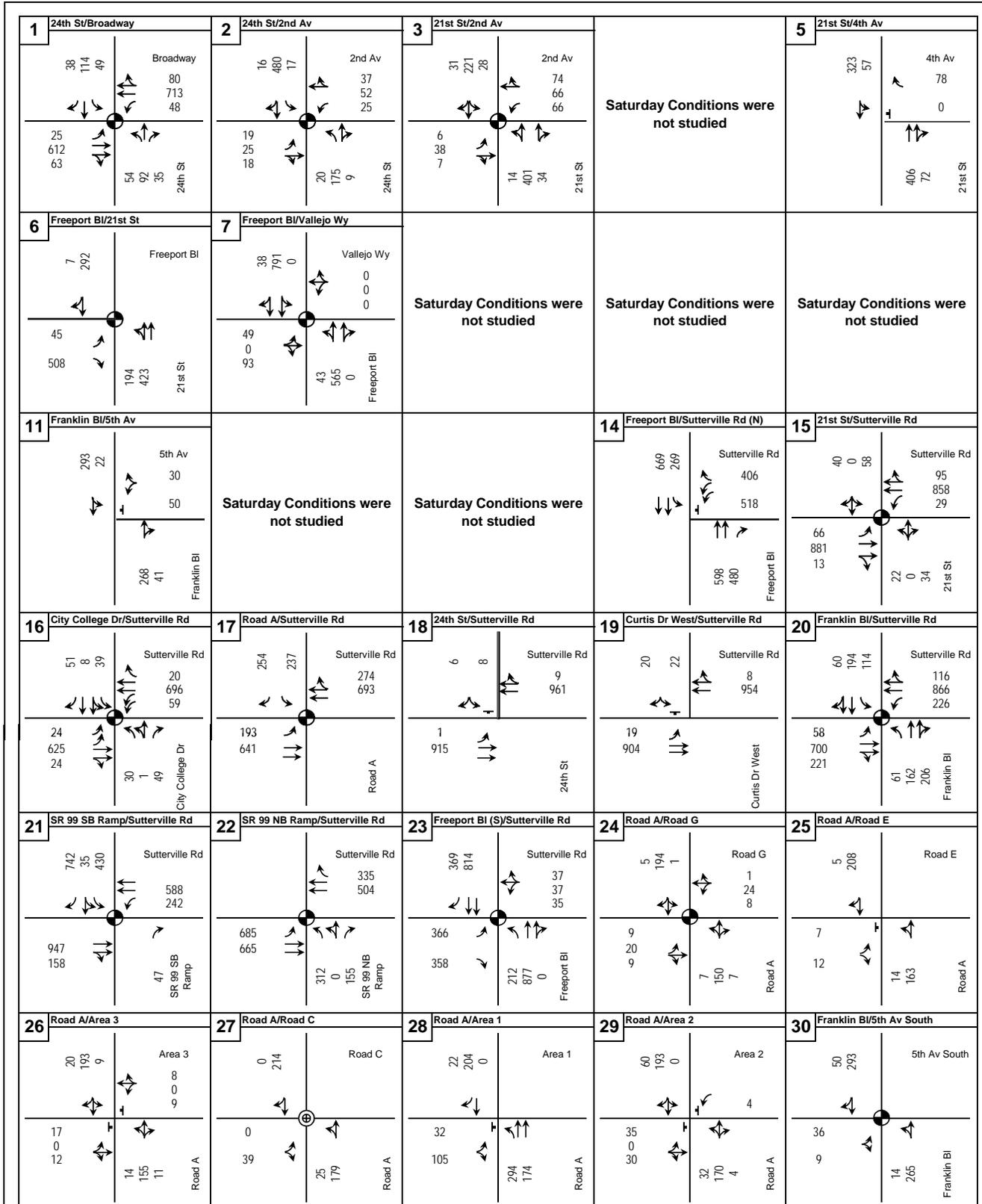
Baseline Reduced Comm. A - Saturday Peak Hour Traffic Volumes, Lane & Traffic Controls

1 24th St/Broadway Broadway 38 (36) 214 (424) 75 (158) 78 (80) 728 (905) 77 (108) 24 (35) 470 (790) 53 (123) 72 (71) 196 (172) 45 (76) 24th St	2 24th St/2nd Av 2nd Av 10 (40) 425 (1055) 21 (31) 48 (38) 44 (114) 40 (40) 40 (20) 50 (30) 16 (28) 35 (32) 338 (259) 22 (10) 24th St	3 21st St/2nd Av 2nd Av 52 (54) 188 (512) 52 (43) 153 (93) 59 (129) 104 (121) 10 (11) 70 (55) 10 (12) 25 (23) 926 (497) 70 (43) 21st St	4 24th St/2nd Av 2nd Av 49 (121) 105 (446) 11 (42) 23 (32) 110 (150) 5 (69) 35 (10) 94 (57) 18 (46) 132 (70) 285 (96) 17 (9) 24th St	5 24th St/5th Av 5th Av 295 (619) 30 (102) 157 (38) 0 (0) 811 (435) 72 (90) 24th St
6 Freeport Bl/21st St Freeport Bl 10 (10) 269 (573) 32 (59) 468 (1004) 367 (241) 849 (466) 21st St	7 Freeport Bl/Vallejo Wy Vallejo Wy 35 (72) 699 (1505) 1 (0) 0 (1) 0 (0) 0 (1) 87 (47) 1 (0) 181 (93) 73 (56) 1131 (660) 0 (0) Freeport Bl	8 24th St/Portola Wy Portola Wy 4 (12) 145 (563) 10 (37) 39 (14) 10 (2) 11 (1) 12 (3) 8 (11) 27 (19) 17 (5) 373 (160) 1 (0) 24th St	9 24th St/5th Av 5th Av 175 (583) 8 (0) 21 (13) 17 (40) 370 (152) 17 (26) 24th St	10 24th St/Donner Wy Donner Wy 0 (0) 13 (45) 10 (43) 23 (18) 14 (43) 1 (2) 0 (0) 39 (19) 8 (5) 1 (1) 112 (6) 14 (17) 24th St
11 Franklin Bl/5th Av 5th Av 208 (706) 25 (41) 29 (59) 43 (122) 633 (311) 163 (70) Franklin Bl	12 24th St/10th Av 10th Av 21 (18) 2 (3) 1 (1) 2 (6) 114 (30) 0 (2) 24th St	13 24th St/11th Av 11th Av 25 (863) 1 (5) 1 (4) 9 (4) 112 (30) 2 (2) 24th St	14 Freeport Bl/Sutterville Rd (N) Sutterville Rd 374 (950) 410 (493) 664 (384) 408 (749) 1056 (548) 640 (545) Freeport Bl	15 21st St/Sutterville Rd Sutterville Rd 26 (61) 0 (0) 40 (81) 103 (49) 1101 (1285) 53 (61) 74 (56) 1019 (1046) 8 (11) 50 (33) 0 (0) 65 (57) 21st St
16 City College Dr/Sutterville Rd Sutterville Rd 30 (221) 9 (22) 36 (187) 325 (311) 929 (883) 196 (408) 160 (127) 891 (698) 143 (295) 295 (176) 18 (16) 301 (263) City College Dr	17 Road A/Sutterville Rd Sutterville Rd 248 (527) 185 (268) 151 (285) 1214 (1130) 203 (198) 1017 (963) Road A	18 24th St/Sutterville Rd Sutterville Rd 0 (0) 3 (0) 21 (19) 1363 (1412) 16 (7) 1165 (1151) 24th St	19 Curtis Dr West/Sutterville Rd Sutterville Rd 16 (49) 5 (1) 5 (18) 1370 (1489) 17 (20) 1152 (1036) Curtis Dr West	20 Franklin Bl/Sutterville Rd Sutterville Rd 56 (75) 169 (472) 138 (86) 118 (144) 1080 (1255) 91 (191) 142 (73) 714 (776) 293 (274) 251 (107) 484 (181) 164 (189) Franklin Bl
21 SR 99 SB Ramp/Sutterville Rd Sutterville Rd 638 (826) 32 (83) 402 (447) 654 (778) 124 (121) 927 (932) 78 (121) 162 (55) SR 99 SB Ramp	22 SR 99 NB Ramp/Sutterville Rd Sutterville Rd 426 (294) 488 (556) 576 (628) 915 (802) 291 (344) 1 (1) 118 (182) SR 99 NB Ramp	23 Freeport Bl (S)/Sutterville Rd Sutterville Rd 247 (451) 605 (1253) 0 (33) 3 (6) 0 (11) 437 (358) 141 (358) 351 (221) 1247 (796) 0 (0) Freeport Bl	24 Road A/Road G Road G 2 (6) 166 (525) 23 (57) 131 (1) 11 (32) 8 (25) 14 (7) 34 (17) 10 (9) 4 (8) 242 (161) 12 (6) Road A	25 Road A/Road E Road E 2 (6) 199 (552) 10 (5) 18 (9) 6 (16) 242 (182) Road A
26 Road A/Area 3 Area 3 9 (30) 210 (519) 4 (12) 13 (6) 0 (0) 15 (8) 36 (15) 0 (0) 24 (10) 6 (20) 196 (182) 5 (14) Road A	27 Road A/Road C Road C 0 (0) 249 (536) 0 (0) 87 (32) 20 (44) 207 (216) Road A	28 Road A/Area 1 Area 1 9 (19) 319 (628) 0 (0) 8 (30) 69 (95) 120 (259) 225 (232) Road A	29 Road A/Area 2 Area 2 25 (52) 312 (517) 0 (0) 8 (24) 9 (32) 0 (0) 9 (27) 13 (28) 218 (228) 2 (6) Road A	30 Franklin Bl/5th Av South 5th Av South 20 (66) 231 (672) 23 (28) 14 (12) 10 (3) 680 (342) Franklin Bl

KEY
 31 (27) = AM (PM) peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



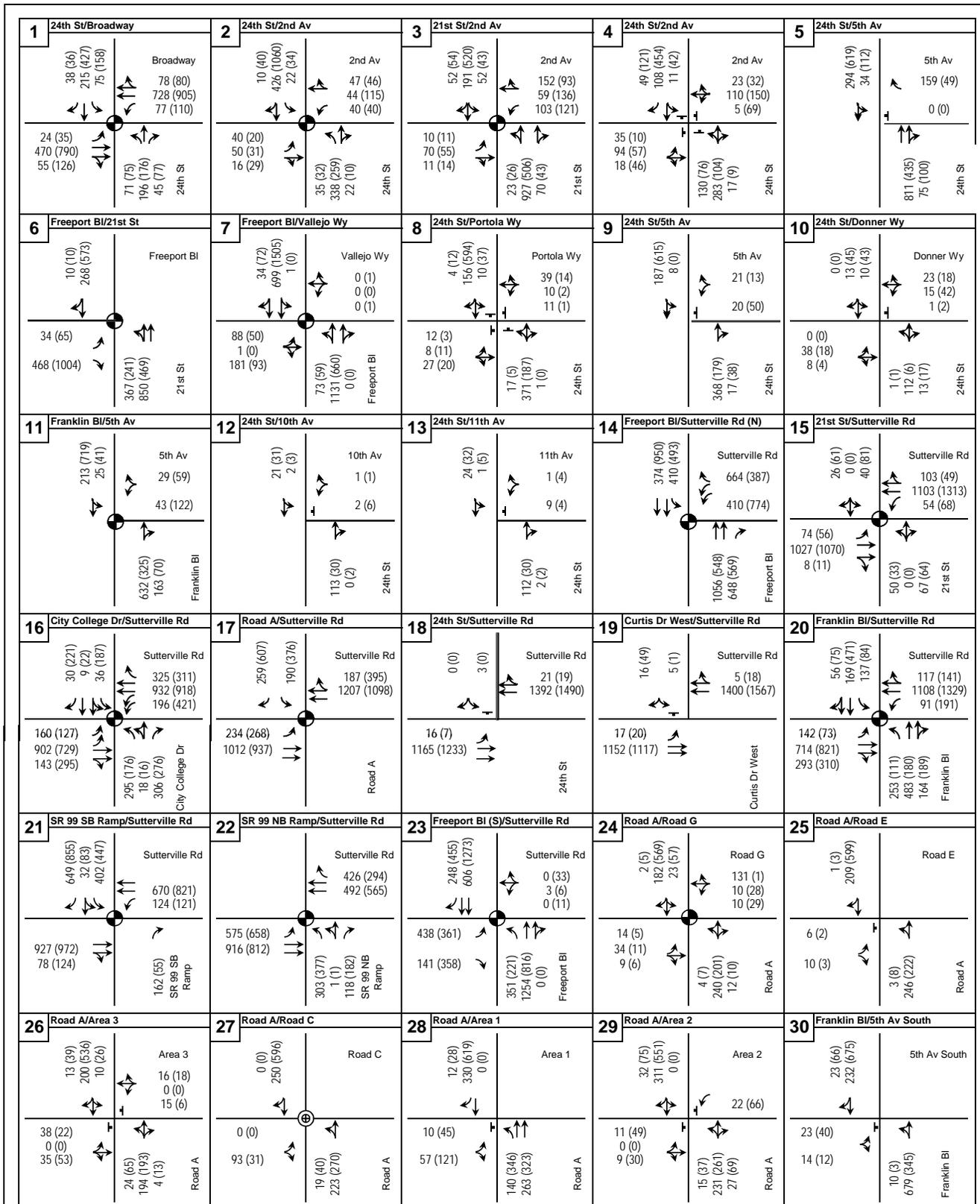
Baseline Reduced Comm. B - AM & PM Peak Hour Traffic Volumes, Lane & Traffic Controls



KEY
 31 = Saturday peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



Baseline Reduced Comm. B - Saturday Peak Hour Traffic Volumes, Lane & Traffic Controls



KEY

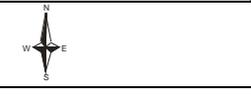
 31 (27) = AM (PM) peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



Baseline Reduced Comm. B - AM & PM Peak Hour Traffic Volumes, Lane & Traffic Controls

1 24th St/Broadway 	2 24th St/2nd Av 	3 21st St/2nd Av 	Saturday Conditions were not studied	5 21st St/4th Av
6 Freeport Bl/21st St 	7 Freeport Bl/Vallejo Wy 	Saturday Conditions were not studied	Saturday Conditions were not studied	Saturday Conditions were not studied
11 Franklin Bl/5th Av 	Saturday Conditions were not studied	Saturday Conditions were not studied	14 Freeport Bl/Sutterville Rd (N) 	15 21st St/Sutterville Rd
16 City College Dr/Sutterville Rd 	17 Road A/Sutterville Rd 	18 24th St/Sutterville Rd 	19 Curtis Dr West/Sutterville Rd 	20 Franklin Bl/Sutterville Rd
21 SR 99 SB Ramp/Sutterville Rd 	22 SR 99 NB Ramp/Sutterville Rd 	23 Freeport Bl (S)/Sutterville Rd 	24 Road A/Road G 	25 Road A/Road E
26 Road A/Area 3 	27 Road A/Road C 	28 Road A/Area 1 	29 Road A/Area 2 	30 Franklin Bl/5th Av South

KEY
 31 = Saturday peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



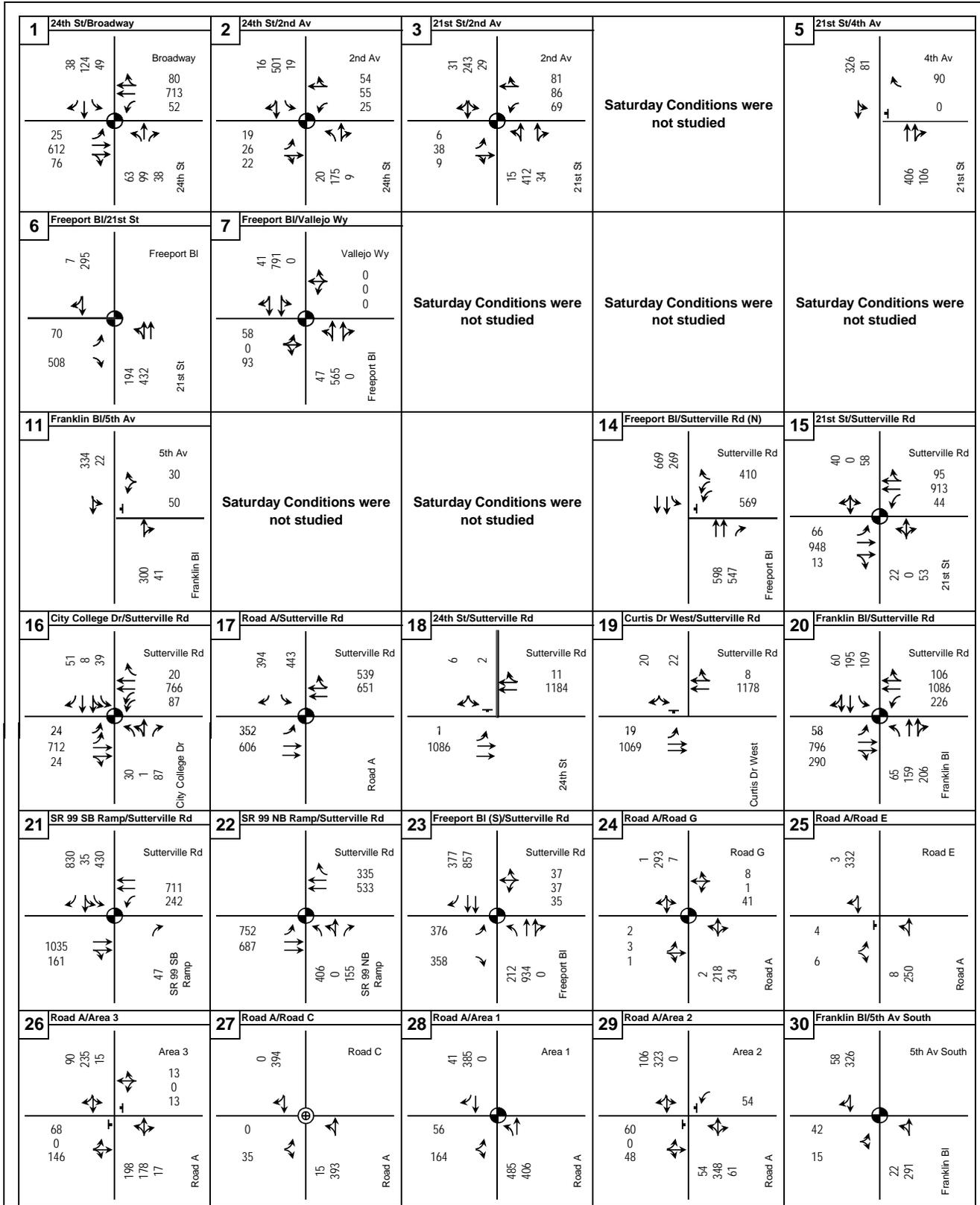
Baseline Reduced Comm. B - Saturday Peak Hour Traffic Volumes, Lane & Traffic Controls

1 24th St/Broadway 	2 24th St/2nd Av 	3 21st St/2nd Av 	4 24th St/2nd Av 	5 24th St/5th Av
6 Freepoint Bl/21st St 	7 Freepoint Bl/Vallejo Wy 	8 24th St/Portola Wy 	9 24th St/5th Av 	10 24th St/Donner Wy
11 Franklin Bl/5th Av 	12 24th St/10th Av 	13 24th St/11th Av 	14 Freepoint Bl/Sutterville Rd (N) 	15 21st St/Sutterville Rd
16 City College Dr/Sutterville Rd 	17 Road A/Sutterville Rd 	18 24th St/Sutterville Rd 	19 Curtis Dr West/Sutterville Rd 	20 Franklin Bl/Sutterville Rd
21 SR 99 SB Ramp/Sutterville Rd 	22 SR 99 NB Ramp/Sutterville Rd 	23 Freepoint Bl (S)/Sutterville Rd 	24 Road A/Road G 	25 Road A/Road E
26 Road A/Area 3 	27 Road A/Road C 	28 Road A/Area 1 	29 Road A/Area 2 	30 Franklin Bl/5th Av South

KEY
 31 (27) = AM (PM) peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



Baseline Access Scenario 2 - AM & PM Peak Hour Traffic Volumes, Lane & Traffic Controls



KEY
 31 = Saturday peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



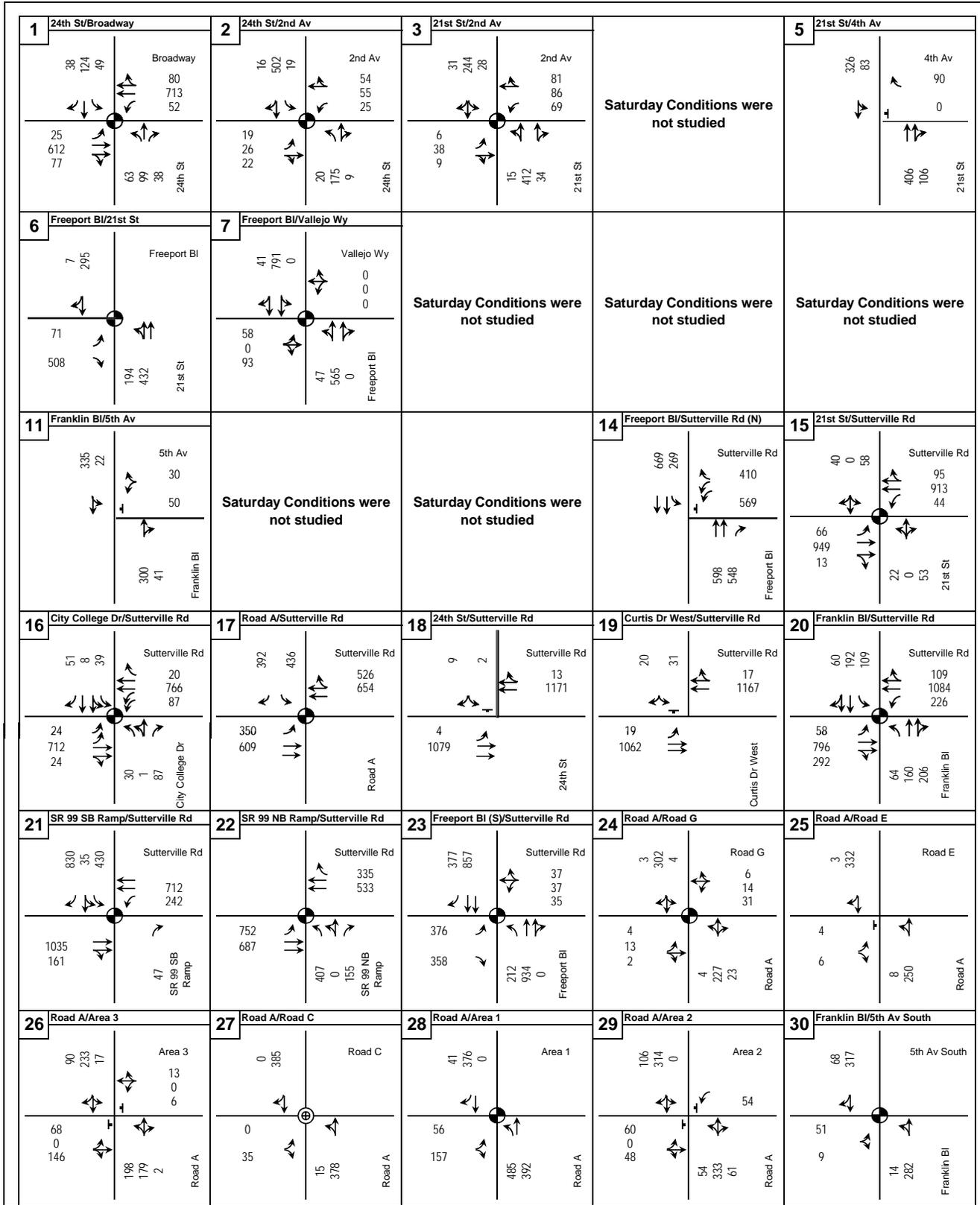
Baseline Access Scenario 2 - Saturday Peak Hour Traffic Volumes, Lane & Traffic Controls

1 24th St/Broadway Broadway 38 (36) 217 (431) 75 (158) 78 (80) 728 (905) 78 (111) 24 (35) 470 (790) 57 (131) 68 (79) 194 (179) 44 (79) 24th St	2 24th St/2nd Av 2nd Av 10 (40) 431 (1071) 22 (32) 46 (55) 44 (117) 40 (40) 40 (20) 50 (30) 17 (31) 35 (32) 338 (259) 22 (10) 24th St	3 21st St/2nd Av 2nd Av 52 (54) 195 (529) 52 (43) 152 (99) 59 (147) 104 (124) 10 (11) 70 (55) 11 (13) 21 (25) 926 (507) 70 (43) 21st St	4 24th St/2nd Av 2nd Av 49 (121) 114 (463) 11 (42) 23 (32) 110 (150) 5 (69) 35 (10) 94 (57) 18 (46) 131 (97) 276 (114) 17 (9) 24th St	5 24th St/5th Av 5th Av 295 (622) 38 (121) 156 (50) 0 (0) 811 (435) 82 (116) 24th St
6 Freepoint Bl/21st St Freepoint Bl 10 (10) 269 (576) 40 (78) 468 (1004) 367 (241) 852 (473) 21st St	7 Freepoint Bl/Vallejo Wy Vallejo Wy 35 (75) 699 (1505) 1 (0) 0 (1) 0 (0) 0 (1) 90 (54) 1 (0) 181 (93) 73 (59) 1131 (660) 0 (0) Freepoint Bl	8 24th St/Portola Wy Portola Wy 4 (12) 174 (630) 10 (37) 39 (14) 10 (2) 11 (1) 12 (3) 8 (11) 27 (20) 17 (5) 364 (219) 1 (0) 24th St	9 24th St/5th Av 5th Av 204 (650) 8 (0) 21 (13) 21 (50) 361 (211) 10 (40) 24th St	10 24th St/Donner Wy Donner Wy 0 (0) 13 (45) 10 (43) 23 (18) 19 (48) 1 (2) 0 (0) 34 (27) 0 (1) 1 (0) 112 (6) 13 (17) 24th St
11 Franklin Bl/5th Av 5th Av 221 (736) 25 (41) 29 (59) 43 (122) 628 (340) 163 (70) Franklin Bl	12 24th St/10th Av 10th Av 13 (28) 2 (3) 1 (1) 2 (6) 113 (29) 0 (2) 24th St	13 24th St/11th Av 11th Av 21 (30) 1 (5) 1 (4) 9 (4) 115 (66) 2 (2) 24th St	14 Freepoint Bl/Sutterville Rd (N) Sutterville Rd 374 (950) 410 (493) 664 (387) 417 (798) 1056 (548) 660 (600) Freepoint Bl	15 21st St/Sutterville Rd Sutterville Rd 26 (61) 0 (0) 40 (81) 103 (49) 1110 (1337) 55 (75) 74 (56) 1039 (1101) 8 (11) 50 (33) 0 (0) 71 (73) 21st St
16 City College Dr/Sutterville Rd Sutterville Rd 30 (221) 9 (22) 36 (187) 325 (311) 941 (949) 197 (435) 160 (127) 917 (769) 143 (295) 295 (176) 18 (16) 313 (292) City College Dr	17 Road A/Sutterville Rd Sutterville Rd 268 (651) 183 (452) 215 (477) 1217 (1099) 240 (322) 1017 (939) Road A	18 24th St/Sutterville Rd Sutterville Rd 0 (0) 0 (0) 23 (23) 1426 (1572) 17 (9) 1162 (1309) 24th St	19 Curtis Dr West/Sutterville Rd Sutterville Rd 16 (49) 23 (5) 9 (29) 1435 (1653) 17 (20) 1141 (1190) Curtis Dr West	20 Franklin Bl/Sutterville Rd Sutterville Rd 56 (75) 167 (470) 132 (81) 115 (133) 1149 (1428) 91 (191) 142 (73) 717 (867) 296 (341) 252 (108) 483 (778) 164 (189) Franklin Bl
21 SR 99 SB Ramp/Sutterville Rd Sutterville Rd 665 (891) 32 (83) 402 (447) 692 (875) 124 (121) 924 (1015) 79 (125) 162 (55) SR 99 SB Ramp	22 SR 99 NB Ramp/Sutterville Rd Sutterville Rd 426 (294) 497 (578) 571 (689) 917 (822) 320 (419) 1 (1) 118 (182) SR 99 NB Ramp	23 Freepoint Bl (S)/Sutterville Rd Sutterville Rd 249 (459) 612 (1294) 0 (33) 3 (6) 0 (11) 440 (366) 141 (358) 351 (221) 1264 (843) 0 (0) Freepoint Bl	24 Road A/Road G Road G 1 (3) 199 (604) 25 (60) 142 (3) 5 (15) 17 (44) 9 (2) 22 (9) 5 (1) 1 (4) 221 (236) 13 (22) Road A	25 Road A/Road E Road E 1 (3) 220 (646) 6 (1) 10 (3) 3 (8) 229 (260) Road A
26 Road A/Area 3 Area 3 41 (89) 185 (546) 8 (13) 2 (12) 0 (0) 12 (3) 39 (65) 0 (0) 78 (143) 77 (191) 189 (194) 1 (2) Road A	27 Road A/Road C Road C 0 (0) 275 (692) 0 (0) 72 (27) 22 (28) 267 (387) Road A	28 Road A/Area 1 Area 1 13 (34) 321 (691) 0 (0) 10 (52) 58 (139) 145 (404) 300 (401) Road A	29 Road A/Area 2 Area 2 34 (87) 313 (632) 0 (0) 12 (49) 11 (56) 0 (0) 10 (43) 16 (44) 278 (359) 18 (51) Road A	30 Franklin Bl/5th Av South 5th Av South 24 (66) 240 (692) 16 (42) 14 (12) 10 (3) 682 (357) Franklin Bl

KEY
 31 (27) = AM (PM) peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



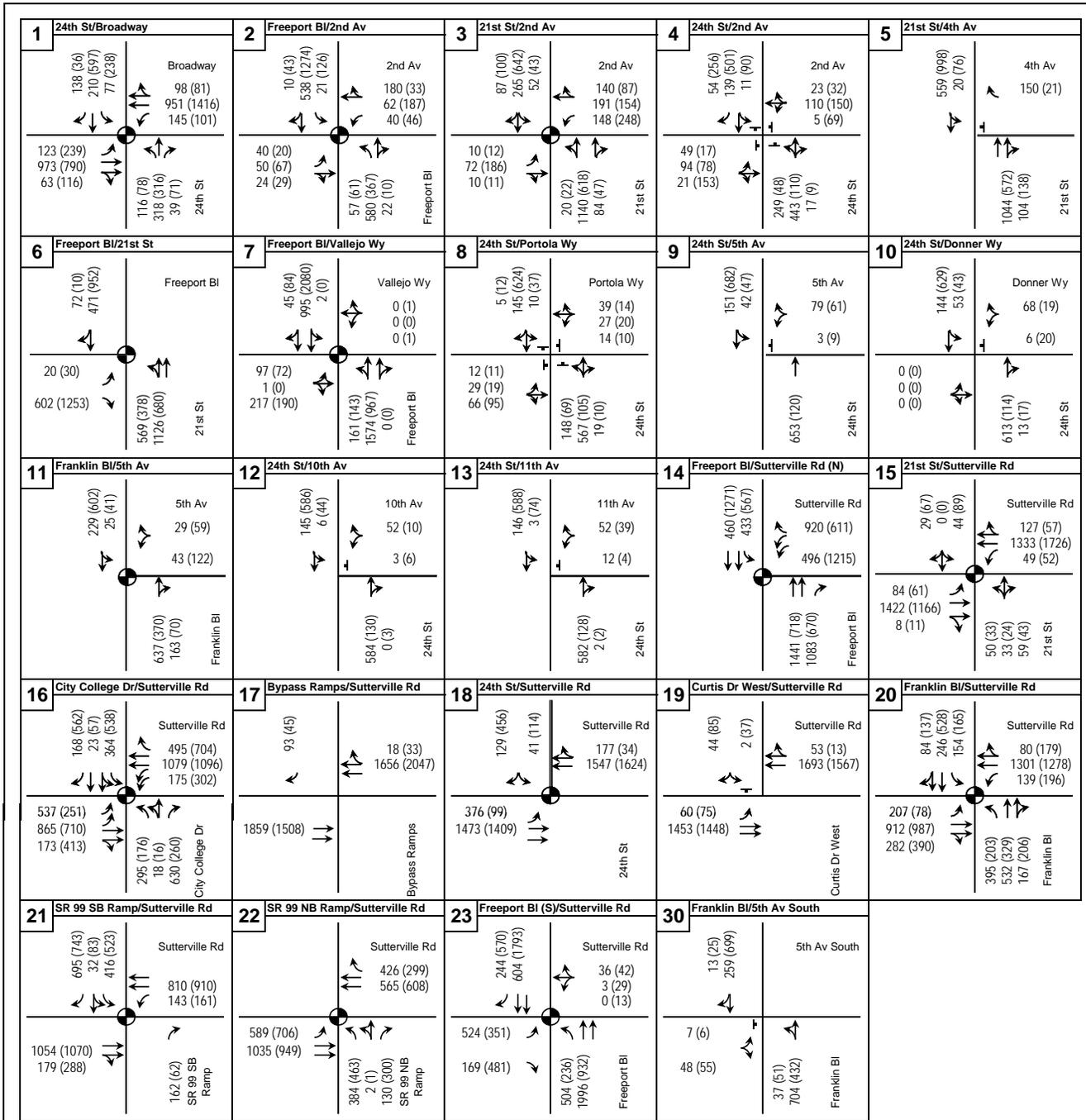
Baseline Access Scenario 3 - AM & PM Peak Hour Traffic Volumes, Lane & Traffic Controls



KEY
 31 = Saturday peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



Baseline Access Scenario 3 - Saturday Peak Hour Traffic Volumes, Lane & Traffic Controls



KEY

- 31 (27) = AM (PM) peak hour traffic volume
- = Signalized intersection
- ↔ = Intersection approach lane



**Cumulative No Project - AM & PM Peak Hour
Traffic Volumes, Lane & Traffic Controls**

1 24th St/Broadway 	2 24th St/2nd Av 	3 21st St/2nd Av 	Saturday Conditions were not studied	5 21st St/4th Av
6 Freeport Bl/21st St 	7 Freeport Bl/Vallejo Wy 	Saturday Conditions were not studied	Saturday Conditions were not studied	Saturday Conditions were not studied
11 Franklin Bl/5th Av 	Saturday Conditions were not studied	Saturday Conditions were not studied	14 Freeport Bl/Sutterville Rd (N) 	15 21st St/Sutterville Rd
16 City College Dr/Sutterville Rd 	17 Bypass Ramps (E)/Sutterville Rd 	18 24th St/Sutterville Rd 	19 Curtis Dr West/Sutterville Rd 	20 Franklin Bl/Sutterville Rd
21 SR 99 SB Ramp/Sutterville Rd 	22 SR 99 NB Ramp/Sutterville Rd 	23 Freeport Bl (S)/Sutterville Rd 	30 Franklin Bl/5th Av South 	

KEY

- 31 = Saturday peak hour traffic volume
- = Signalized intersection
- ↔ = Intersection approach lane



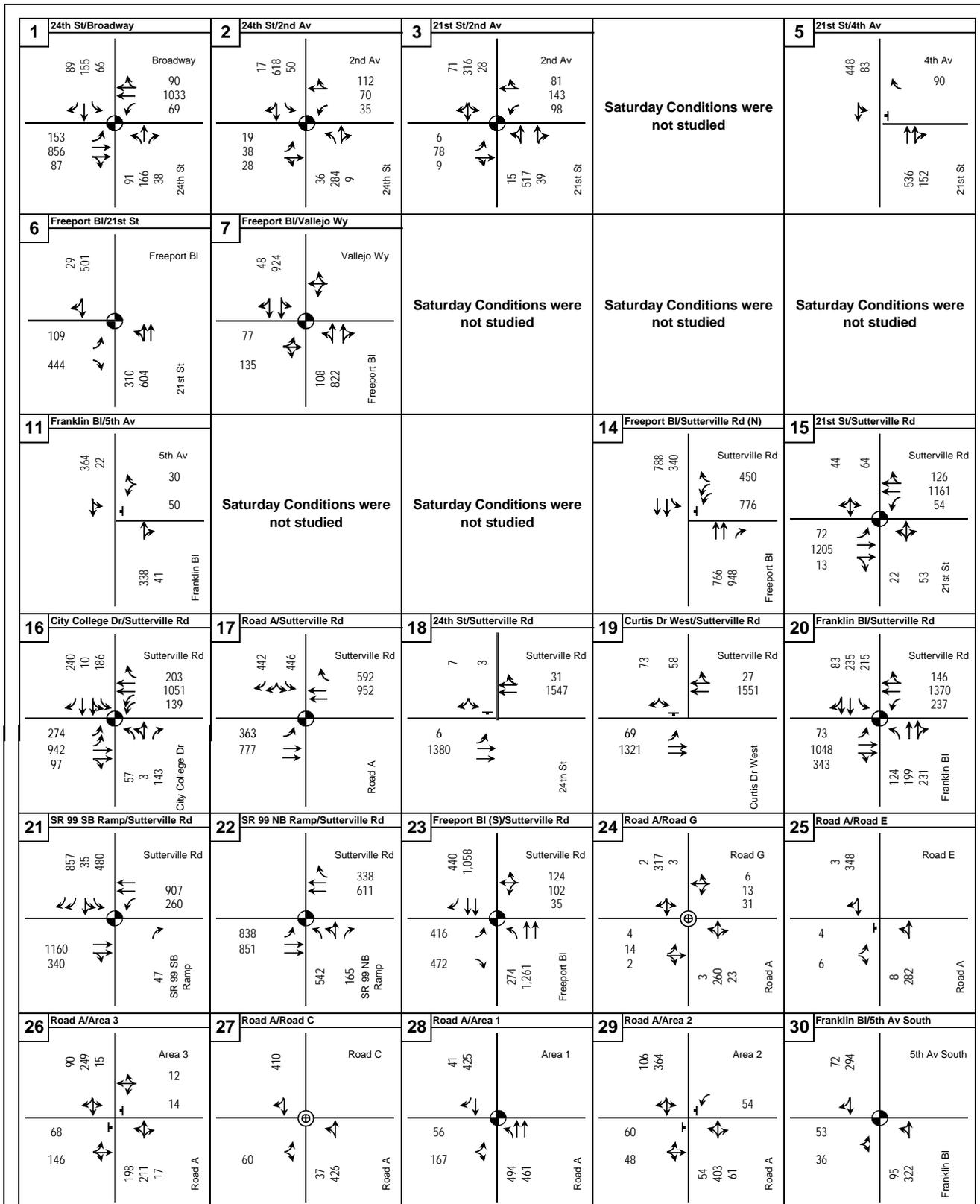
Cumulative No Project - Saturday Peak Hour Traffic Volumes, Lane & Traffic Controls

<p>1 24th St/Broadway</p>	<p>2 24th St/2nd Av</p>	<p>3 21st St/2nd Av</p>	<p>4 24th St/2nd Av</p>	<p>5 24th St/5th Av</p>
<p>6 Freepoint Bl/21st St</p>	<p>7 Freepoint Bl/Vallejo Wy</p>	<p>8 24th St/Portola Wy</p>	<p>9 24th St/5th Av</p>	<p>10 24th St/Donner Wy</p>
<p>11 Franklin Bl/5th Av</p>	<p>12 24th St/10th Av</p>	<p>13 24th St/11th Av</p>	<p>14 Freepoint Bl/Sutterville Rd (N)</p>	<p>15 21st St/Sutterville Rd</p>
<p>16 City College Dr/Sutterville Rd</p>	<p>17 Road A/Sutterville Rd</p>	<p>18 24th St/Sutterville Rd</p>	<p>19 Curtis Dr West/Sutterville Rd</p>	<p>20 Franklin Bl/Sutterville Rd</p>
<p>21 SR 99 SB Ramp/Sutterville Rd</p>	<p>22 SR 99 NB Ramp/Sutterville Rd</p>	<p>23 Freepoint Bl (S)/Sutterville Rd</p>	<p>24 Road A/Road G</p>	<p>25 Road A/Road E</p>
<p>26 Road A/Area 3</p>	<p>27 Road A/Road C</p>	<p>28 Road A/Area 1</p>	<p>29 Road A/Area 2</p>	<p>30 Franklin Bl/5th Av South</p>

KEY
 31 (27) = AM (PM) peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



Cumulative Project - AM & PM Peak Hour Traffic Volumes, Lane & Traffic Controls



KEY
 31 = Saturday peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



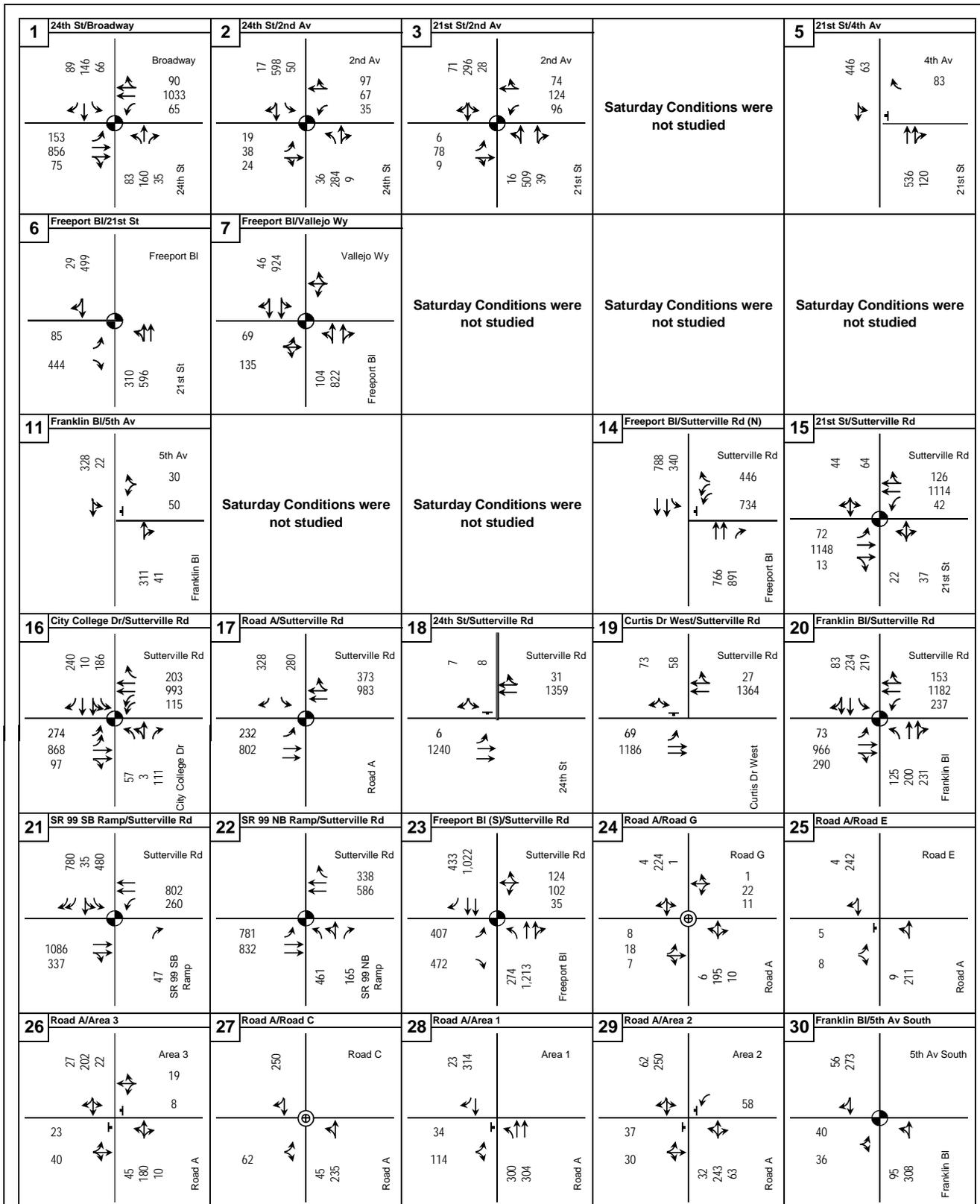
**Cumulative Project - Saturday Peak Hour
 Traffic Volumes, Lane & Traffic Controls**

<p>1 24th St/Broadway</p>	<p>2 24th St/2nd Av</p>	<p>3 21st St/2nd Av</p>	<p>4 24th St/2nd Av</p>	<p>5 24th St/5th Av</p>
<p>6 Freepoint Bl/21st St</p>	<p>7 Freepoint Bl/Vallejo Wy</p>	<p>8 24th St/Portola Wy</p>	<p>9 24th St/5th Av</p>	<p>10 24th St/Donner Wy</p>
<p>11 Franklin Bl/5th Av</p>	<p>12 24th St/10th Av</p>	<p>13 24th St/11th Av</p>	<p>14 Freepoint Bl/Sutterville Rd (N)</p>	<p>15 21st St/Sutterville Rd</p>
<p>16 City College Dr/Sutterville Rd</p>	<p>17 Road A/Sutterville Rd</p>	<p>18 24th St/Sutterville Rd</p>	<p>19 Curtis Dr West/Sutterville Rd</p>	<p>20 Franklin Bl/Sutterville Rd</p>
<p>21 SR 99 SB Ramp/Sutterville Rd</p>	<p>22 SR 99 NB Ramp/Sutterville Rd</p>	<p>23 Freepoint Bl (S)/Sutterville Rd</p>	<p>24 Road A/Road G</p>	<p>25 Road A/Road E</p>
<p>26 Road A/Area 3</p>	<p>27 Road A/Road C</p>	<p>28 Road A/Area 1</p>	<p>29 Road A/Area 2</p>	<p>30 Franklin Bl/5th Av South</p>

KEY
 31 (27) = AM (PM) peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



Cumulative Reduced Comm. A - AM & PM Peak Hour Traffic Volumes, Lane & Traffic Controls



KEY
 31 = Saturday peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



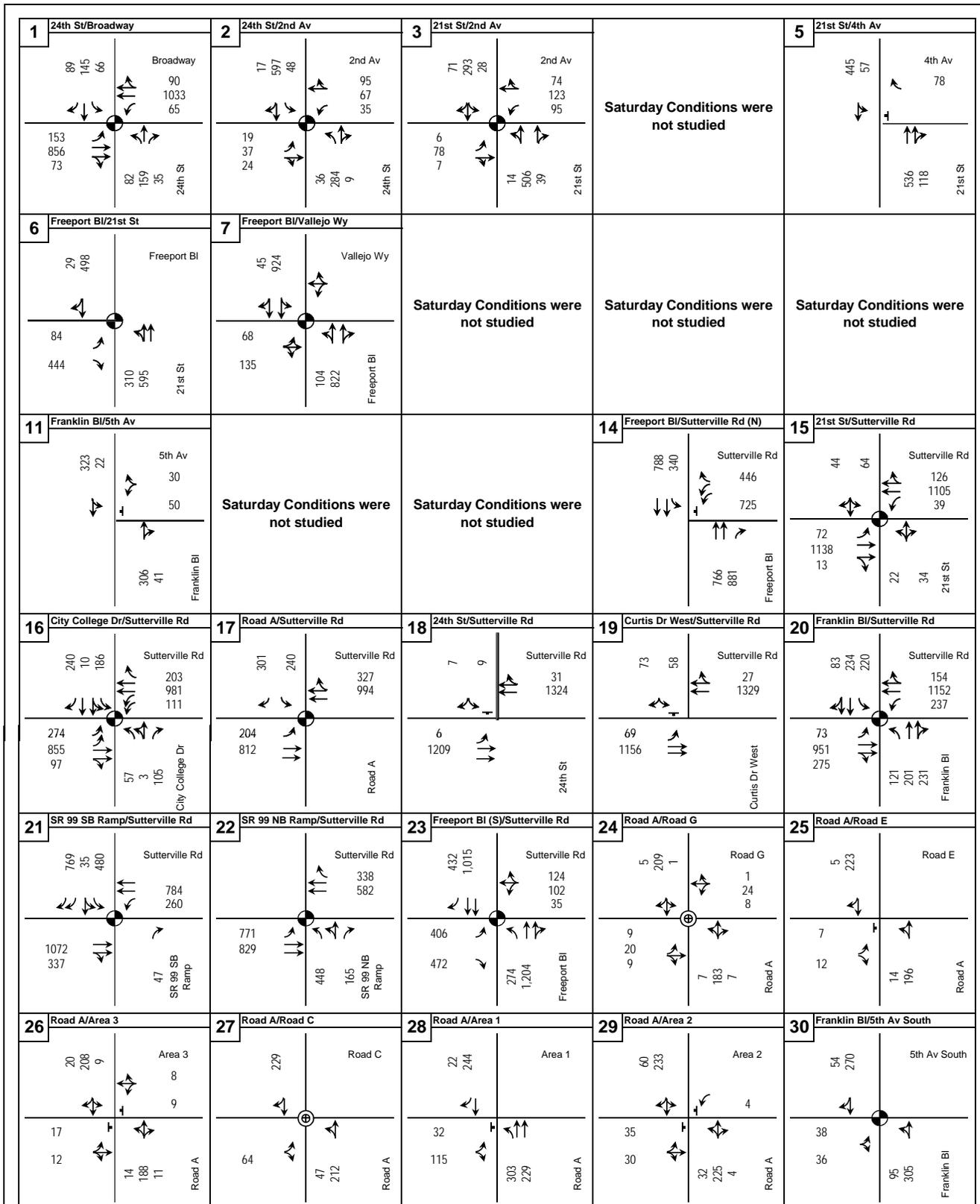
**Cumulative Reduced Comm. A - Saturday Peak Hour
 Traffic Volumes, Lane & Traffic Controls**

<p>1 24th St/Broadway</p>	<p>2 24th St/2nd Av</p>	<p>3 21st St/2nd Av</p>	<p>4 24th St/2nd Av</p>	<p>5 24th St/5th Av</p>
<p>6 Freepoint Bl/21st St</p>	<p>7 Freepoint Bl/Vallejo Wy</p>	<p>8 24th St/Portola Wy</p>	<p>9 24th St/5th Av</p>	<p>10 24th St/Donner Wy</p>
<p>11 Franklin Bl/5th Av</p>	<p>12 24th St/10th Av</p>	<p>13 24th St/11th Av</p>	<p>14 Freepoint Bl/Sutterville Rd (N)</p>	<p>15 21st St/Sutterville Rd</p>
<p>16 City College Dr/Sutterville Rd</p>	<p>17 Road A/Sutterville Rd</p>	<p>18 24th St/Sutterville Rd</p>	<p>19 Curtis Dr West/Sutterville Rd</p>	<p>20 Franklin Bl/Sutterville Rd</p>
<p>21 SR 99 SB Ramp/Sutterville Rd</p>	<p>22 SR 99 NB Ramp/Sutterville Rd</p>	<p>23 Freepoint Bl (S)/Sutterville Rd</p>	<p>24 Road A/Road G</p>	<p>25 Road A/Road E</p>
<p>26 Road A/Area 3</p>	<p>27 Road A/Road C</p>	<p>28 Road A/Area 1</p>	<p>29 Road A/Area 2</p>	<p>30 Franklin Bl/5th Av South</p>

KEY
 31 (27) = AM (PM) peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



Cumulative Reduced Comm. B - AM & PM Peak Hour Traffic Volumes, Lane & Traffic Controls



KEY
 31 = Saturday peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



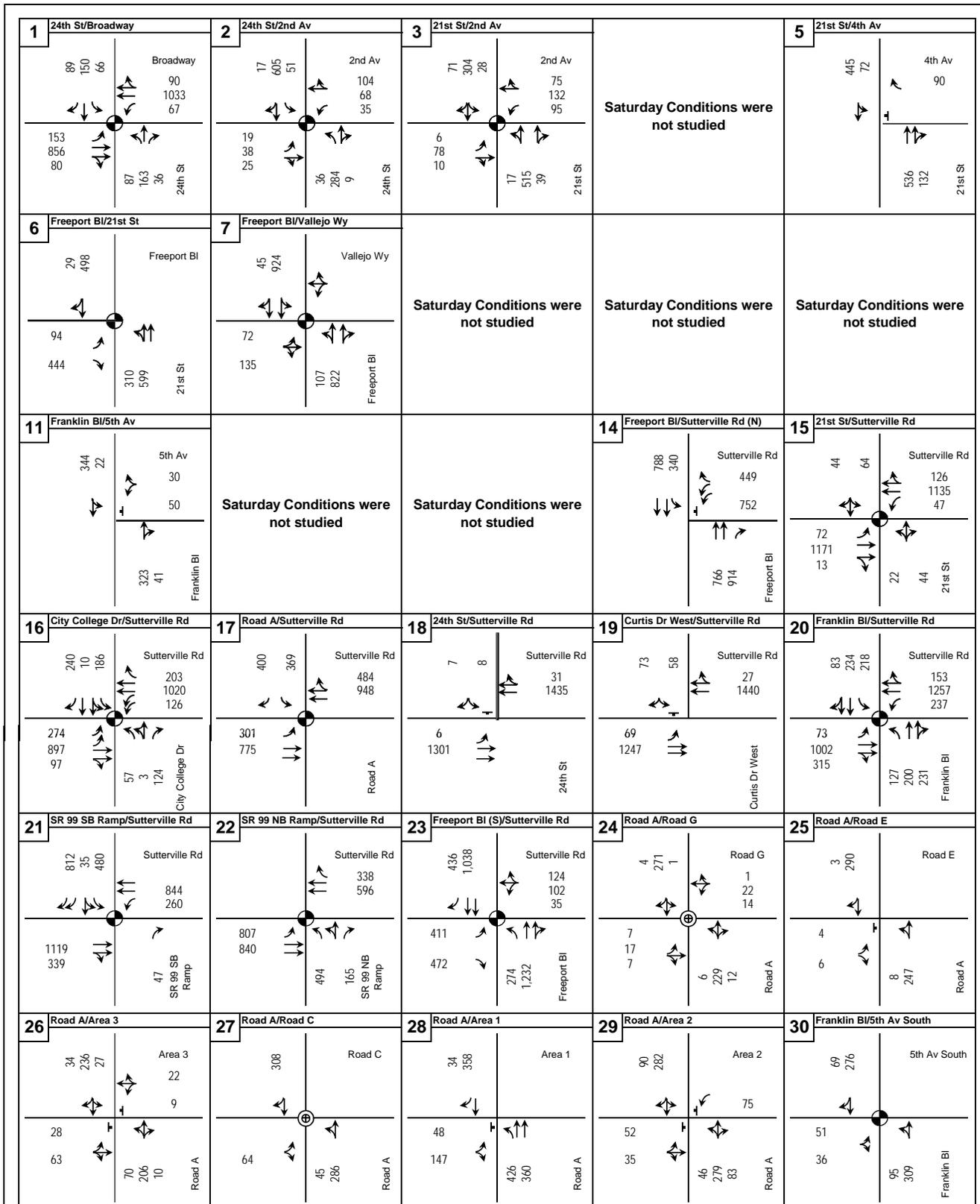
**Cumulative Reduced Comm. B - Saturday Peak Hour
 Traffic Volumes, Lane & Traffic Controls**

<p>1 24th St/Broadway</p>	<p>2 24th St/2nd Av</p>	<p>3 21st St/2nd Av</p>	<p>4 24th St/2nd Av</p>	<p>5 24th St/5th Av</p>
<p>6 Freepoint Bl/21st St</p>	<p>7 Freepoint Bl/Vallejo Wy</p>	<p>8 24th St/Portola Wy</p>	<p>9 24th St/5th Av</p>	<p>10 24th St/Donner Wy</p>
<p>11 Franklin Bl/5th Av</p>	<p>12 24th St/10th Av</p>	<p>13 24th St/11th Av</p>	<p>14 Freepoint Bl/Sutterville Rd (N)</p>	<p>15 21st St/Sutterville Rd</p>
<p>16 City College Dr/Sutterville Rd</p>	<p>17 Road A/Sutterville Rd</p>	<p>18 24th St/Sutterville Rd</p>	<p>19 Curtis Dr West/Sutterville Rd</p>	<p>20 Franklin Bl/Sutterville Rd</p>
<p>21 SR 99 SB Ramp/Sutterville Rd</p>	<p>22 SR 99 NB Ramp/Sutterville Rd</p>	<p>23 Freepoint Bl (S)/Sutterville Rd</p>	<p>24 Road A/Road G</p>	<p>25 Road A/Road E</p>
<p>26 Road A/Area 3</p>	<p>27 Road A/Road C</p>	<p>28 Road A/Area 1</p>	<p>29 Road A/Area 2</p>	<p>30 Franklin Bl/5th Av South</p>

KEY
 31 (27) = AM (PM) peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



Cumulative Multi-Family C - AM & PM Peak Hour Traffic Volumes, Lane & Traffic Controls



KEY
 31 = Saturday peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



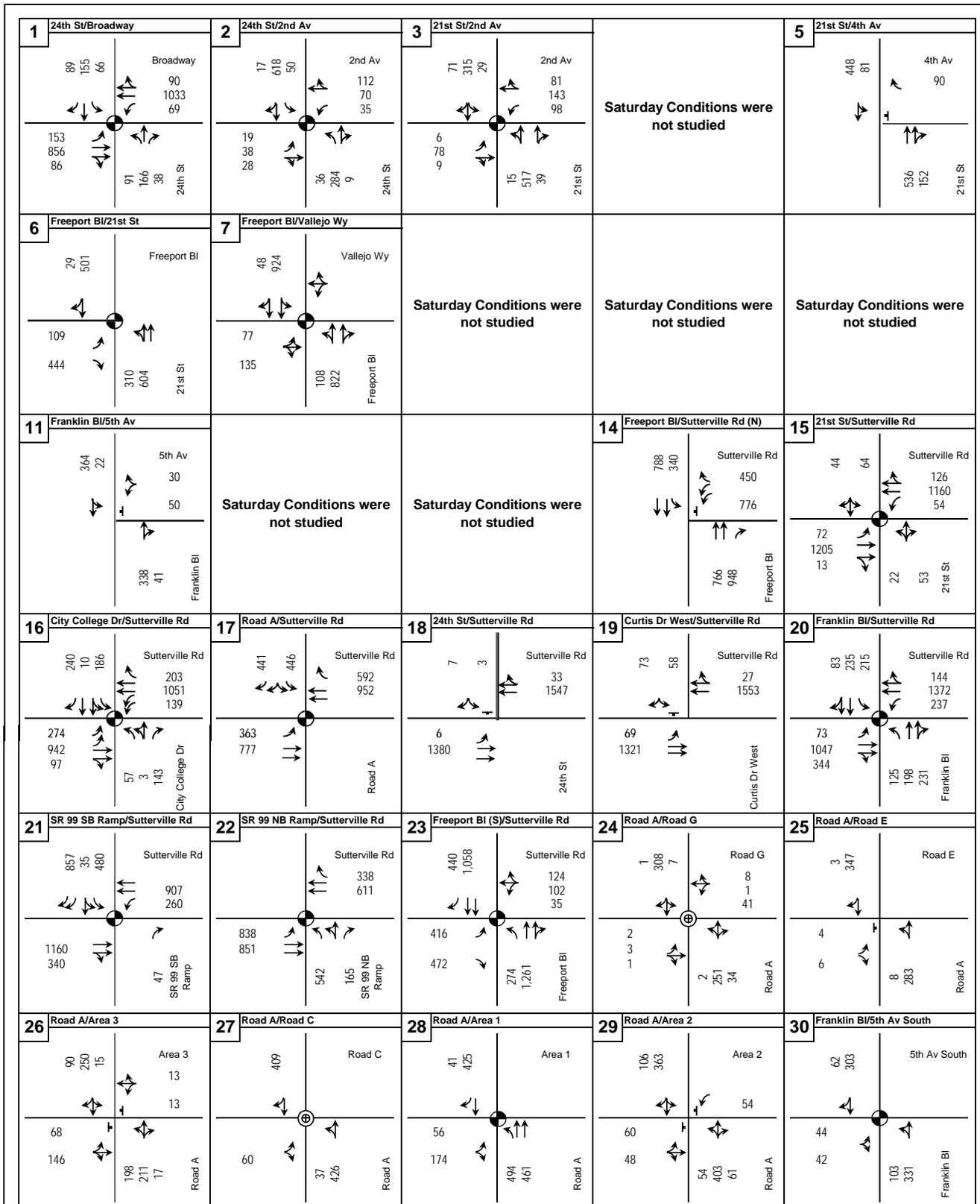
**Cumulative Multi-Family C - Saturday Peak Hour
 Traffic Volumes, Lane & Traffic Controls**

<p>1 24th St/Broadway</p>	<p>2 24th St/2nd Av</p>	<p>3 21st St/2nd Av</p>	<p>4 24th St/2nd Av</p>	<p>5 24th St/5th Av</p>
<p>6 Freepoint Bl/21st St</p>	<p>7 Freepoint Bl/Vallejo Wy</p>	<p>8 24th St/Portola Wy</p>	<p>9 24th St/5th Av</p>	<p>10 24th St/Donner Wy</p>
<p>11 Franklin Bl/5th Av</p>	<p>12 24th St/10th Av</p>	<p>13 24th St/11th Av</p>	<p>14 Freepoint Bl/Sutterville Rd (N)</p>	<p>15 21st St/Sutterville Rd</p>
<p>16 City College Dr/Sutterville Rd</p>	<p>17 Road A/Sutterville Rd</p>	<p>18 24th St/Sutterville Rd</p>	<p>19 Curtis Dr West/Sutterville Rd</p>	<p>20 Franklin Bl/Sutterville Rd</p>
<p>21 SR 99 SB Ramp/Sutterville Rd</p>	<p>22 SR 99 NB Ramp/Sutterville Rd</p>	<p>23 Freepoint Bl (S)/Sutterville Rd</p>	<p>24 Road A/Road G</p>	<p>25 Road A/Road E</p>
<p>26 Road A/Area 3</p>	<p>27 Road A/Road C</p>	<p>28 Road A/Area 1</p>	<p>29 Road A/Area 2</p>	<p>30 Franklin Bl/5th Av South</p>

KEY
 31 (27) = AM (PM) peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



Cumulative Access Scenario 2 - AM & PM Peak Hour Traffic Volumes, Lane & Traffic Controls



KEY
 31 = Saturday peak hour traffic volume
 ● = Signalized intersection
 ↕ = Intersection approach lane



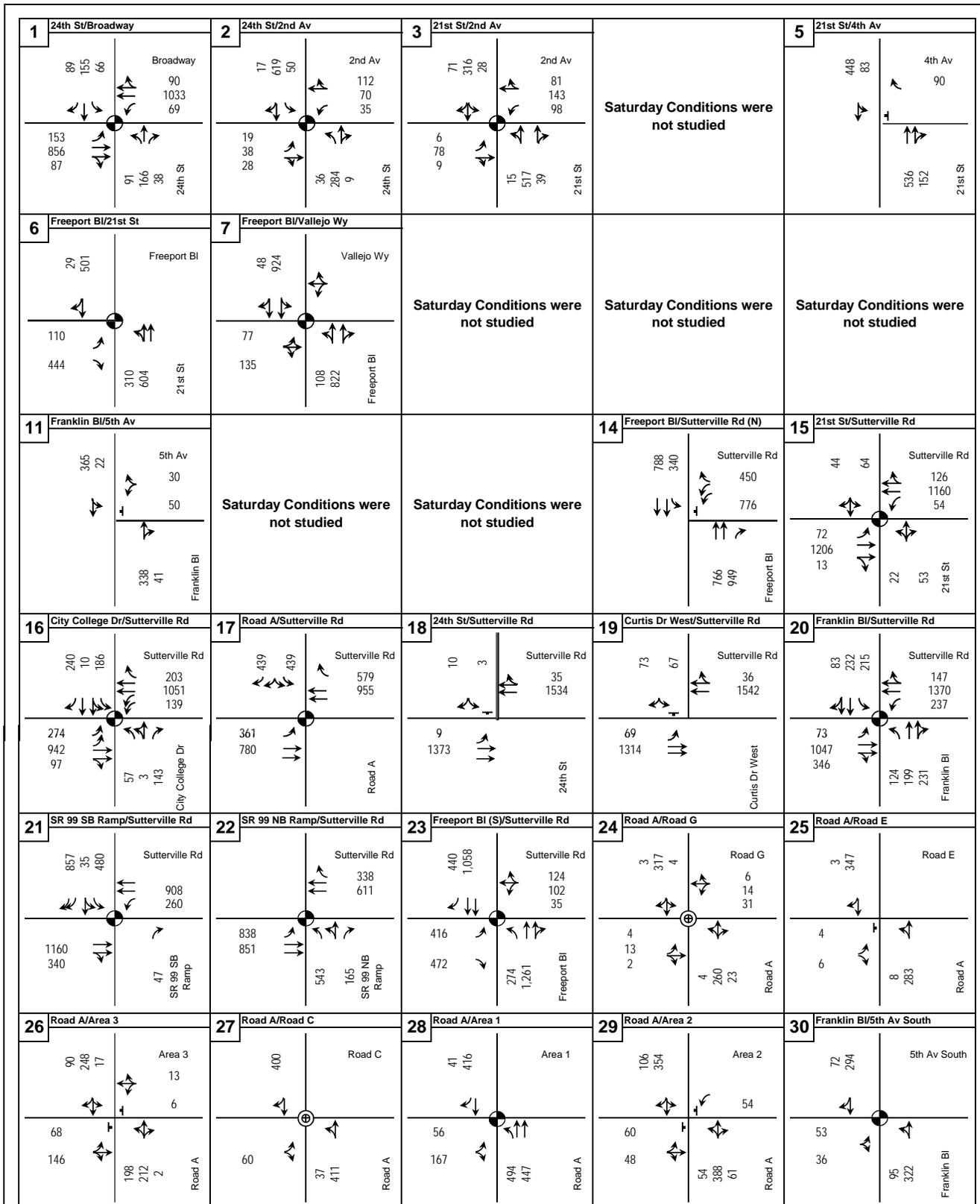
Cumulative Access Scenario 2 - Saturday Peak Hour Traffic Volumes, Lane & Traffic Controls

<p>1 24th St/Broadway</p>	<p>2 24th St/2nd Av</p>	<p>3 21st St/2nd Av</p>	<p>4 24th St/2nd Av</p>	<p>5 24th St/5th Av</p>
<p>6 Freeport Bl/21st St</p>	<p>7 Freeport Bl/Vallejo Wy</p>	<p>8 24th St/Portola Wy</p>	<p>9 24th St/5th Av</p>	<p>10 24th St/Donner Wy</p>
<p>11 Franklin Bl/5th Av</p>	<p>12 24th St/10th Av</p>	<p>13 24th St/11th Av</p>	<p>14 Freeport Bl/Sutterville Rd (N)</p>	<p>15 21st St/Sutterville Rd</p>
<p>16 City College Dr/Sutterville Rd</p>	<p>17 Road A/Sutterville Rd</p>	<p>18 24th St/Sutterville Rd</p>	<p>19 Curtis Dr West/Sutterville Rd</p>	<p>20 Franklin Bl/Sutterville Rd</p>
<p>21 SR 99 SB Ramp/Sutterville Rd</p>	<p>22 SR 99 NB Ramp/Sutterville Rd</p>	<p>23 Freeport Bl (S)/Sutterville Rd</p>	<p>24 Road A/Road G</p>	<p>25 Road A/Road E</p>
<p>26 Road A/Area 3</p>	<p>27 Road A/Road C</p>	<p>28 Road A/Area 1</p>	<p>29 Road A/Area 2</p>	<p>30 Franklin Bl/5th Av South</p>

KEY
 31 (27) = AM (PM) peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



Cumulative Access Scenario 3 - AM & PM Peak Hour Traffic Volumes, Lane & Traffic Controls



KEY
 31 = Saturday peak hour traffic volume
 = Signalized intersection
 = Intersection approach lane



Cumulative Access Scenario 3 - Saturday Peak Hour Traffic Volumes, Lane & Traffic Controls

Date: March 3, 2009

Memorandum

To: Samar Hajeer, City of Sacramento
From: Mark Bowman and Debbie Yueh
Subject: Curtis Park Village – Shared Parking

This memorandum summarizes the results of a shared parking analysis performed for the Curtis Park Village project.

Project Land Use

The project is consisted of a mix of land uses including grocery store, bookstore, dinner theater, restaurants, a variety of housing types and park/open space area. For the purpose of this parking demand analysis, the bookstore is classified as Retail. It is further assumed that the park/open space area would not in itself generate any parking demand and the single family residential units, which have their own attached garages, are self-contained and would not generate additional parking demand or be sharing their parking spaces with other land uses. In short, this parking analysis is based on the following land uses located in the southern retail/commercial portion of the project site:

- 161,000 square feet of retail commercial space
- 53,500 square foot grocery store
- 13,000 square-feet of restaurant space
- A 502-seat dinner theater (38,000 square feet)
- 212 apartment units
- 80 senior independent living apartment

Parking Demand Estimation

Curtis Park Village is designed to create a pedestrian-friendly environment. Therefore, it is assumed that the parking spaces provided in the southern portion of the site would be shared among patrons of the businesses and services as well as residents in the area and patrons would be willing to park and walk within the southern portion of the site.

A model was developed by Dowling Associates to estimate project parking demand. The methods used in the model were developed by the Institute of Transportation Engineers (ITE) and the Urban Land Institute (ULI). The ITE procedures, detailed in *Parking*

Curtis Park Village – Shared Parking Technical Memo

March 3, 3009

Generation,¹ estimate peak parking demand based on equations developed from parking surveys across the United States. The estimated peak parking demand is based on the type and intensity of each land use. The parking demand of the proposed project based on ITE guidance in Table 1. Because “dinner theater” is an atypical land use for which data are not available from ITE, the parking data for the “Quality Restaurant” category in ITE were used for this land use.

Table 1 ITE Parking Demand

Project Land Use	ITE Land Use Code	Proposed Land Use	Peak Parking Rates		Peak Parking Demand	
			Weekday	Saturday	Weekday	Saturday
Multi-Family Home	221	212 units	1.20	1.22	254	259
Dinner Theater	931	502 seats	0.5	0.43	251	216
Restaurant	932	13 ksf	10.10	13.50	131	176
Retail	820	160.5 ksf	2.65	2.97	425	477
Senior Apartment	252	80 units	0.50	0.50	40	40
Grocery Store	850	53.5 ksf	4.36	4.75	233	254
Total Parking Demand					1,335	1,421

Ksf = 1000 square feet

Source: Parking Generation, 3rd edition, Institute of Transportation Engineers, 2004

The ULI procedures estimate parking demand for various times of day, day of week, and month of year for different land use types. The ULI procedures, detailed in *Shared Parking*,² provide a means of determining the shared parking demand for a mix of different land uses, which individually may have peak demand periods at different times. Details on monthly adjustment and time-of-day factors are presented in Table 2 and Table 3. Again, data for “dinner theater” are not available from ULI; therefore, the monthly adjustments were based on the “Restaurant” category and the time-of-day factors were based on the “Fine/Casual Dining” category with adjustments to reflect the anticipated operating hours of the dinner theater.

The model employed the ITE and ULI procedures to estimate the shared parking demand for typical weekday and weekend conditions. Figure 1 and Figure 2 show the estimated shared parking demand for the proposed land uses in Curtis Park Village with variations in hour of day and month of year for a typical weekday and weekend, respectively. The same information is also shown in Table 4 and Table 5. All months share similar trends in parking demand throughout the day.

¹ *Parking Generation 3rd Edition*, Institute of Transportation Engineers (ITE), 2004

² *Shared Parking, 2nd Edition*, Urban Land Institute (ULI), 2005

Table 2 ULI Monthly Adjustment Factors

Monthly Adjustments for Customer/Visitor Parking													
Land Use	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	LATE DEC
Shopping Ctr	56%	57%	64%	63%	66%	67%	64%	69%	64%	66%	72%	100%	80%
Restaurant	85%	86%	95%	92%	96%	95%	98%	99%	91%	96%	93%	100%	95%
Residential	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Monthly Adjustments for Employee/Resident Parking													
Land Use	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	LATE DEC
Shopping Ctr	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	90%	100%	90%
Restaurant	95%	95%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Residential	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
<i>Source: Shared Parking, 2nd Edition, Urban Land Institute, 2005, p 14 -15</i> <i>Shopping Center category was used for retail, grocery store and bookstore</i> <i>Residential category was used for multi-family homes and senior apartments</i> <i>Restaurant category was used for dinner theater and restaurants</i>													

For both weekdays and weekends, the typical peak parking demand period for Curtis Park Village is predicted to occur between 12 noon and 3 pm and between 5 pm and 10 pm with 7:00 pm being the peak hour. Parking demand is at the lowest during the month of January and highest during the month of December for both weekdays and weekends. Table 4 and Table 5 show the estimated demand by land use for a typical December weekday and weekend, respectively. During a typical December weekday, the peak parking demand at Curtis Park Village is 1,165 spaces and on a typical December weekend, the peak parking demand is 1,182 spaces.

Conclusion

The project proposed to provide 1,356 parking spaces for the retail/commercial portion of the project. Based on the analysis results, the parking supply is sufficient to meet the anticipated parking demand at Curtis Park Village.

Table 3 ULI Time-of-Day Factors

Time-of-Day Factors for Weekday Demand - Customer/Visitor																			
	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	12 AM
Shopping Center	1%	5%	15%	30%	55%	75%	90%	100%	100%	100%	95%	85%	80%	75%	65%	50%	30%	10%	0%
Fine/Casual Dining Rst	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	95%	100%	100%	100%	95%	75%	25%
Restaurant	25%	50%	60%	75%	85%	90%	100%	90%	50%	45%	45%	75%	80%	80%	80%	60%	55%	50%	25%
Residential	0%	10%	20%	20%	20%	20%	20%	20%	20%	20%	20%	40%	60%	100%	100%	100%	100%	80%	50%
Time-of-Day Factors for Weekday Demand - Employee/Resident																			
Shopping Center	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	95%	95%	90%	75%	40%	15%	0%
Fine/Casual Dining Rst	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	50%	100%	100%	100%	100%	100%	100%	85%	35%
Restaurant	50%	75%	90%	90%	100%	100%	100%	100%	100%	75%	75%	95%	95%	95%	95%	80%	65%	65%	35%
Residential	100%	90%	85%	80%	75%	70%	65%	70%	70%	70%	75%	85%	90%	97%	98%	99%	100%	100%	100%
Time-of-Day Factors for Weekend Demand - Customer/Visitor																			
Shopping Center	1%	5%	10%	35%	60%	70%	85%	95%	100%	100%	95%	90%	80%	75%	65%	50%	35%	15%	0%
Fine/Casual Dining Rst	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	90%	95%	100%	90%	90%	90%	50%
Restaurant	10%	25%	45%	70%	90%	90%	100%	85%	65%	40%	45%	60%	70%	70%	65%	30%	25%	15%	10%
Residential		20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	40%	60%	100%	100%	100%	100%	80%	50%
Time-of-Day Factors for Weekend Demand - Employee/Resident																			
Shopping Center	10%	15%	40%	75%	85%	95%	100%	100%	100%	100%	100%	95%	85%	80%	75%	65%	45%	15%	0%
Fine/Casual Dining Rst	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	50%	100%	100%	100%	100%	100%	100%	85%	50%
Restaurant	50%	75%	90%	90%	100%	100%	100%	100%	100%	75%	75%	95%	95%	95%	95%	80%	65%	65%	35%
Residential	100%	90%	85%	80%	75%	70%	65%	70%	70%	70%	75%	85%	90%	97%	98%	99%	100%	100%	100%

Source: Shared Parking, 2nd Edition, Urban Land Institute, 2005, p 16-19
Shopping Center category was used for retail, grocery store and bookstore
Residential category was used for multi-family homes and senior apartments
Fine/Casual Dining Restaurant category was used for dinner theater; the factors shown have been adjusted to reflect the anticipated operations at dinner theaters.

Figure 1 Weekday Total Estimated Shared Parking Demand

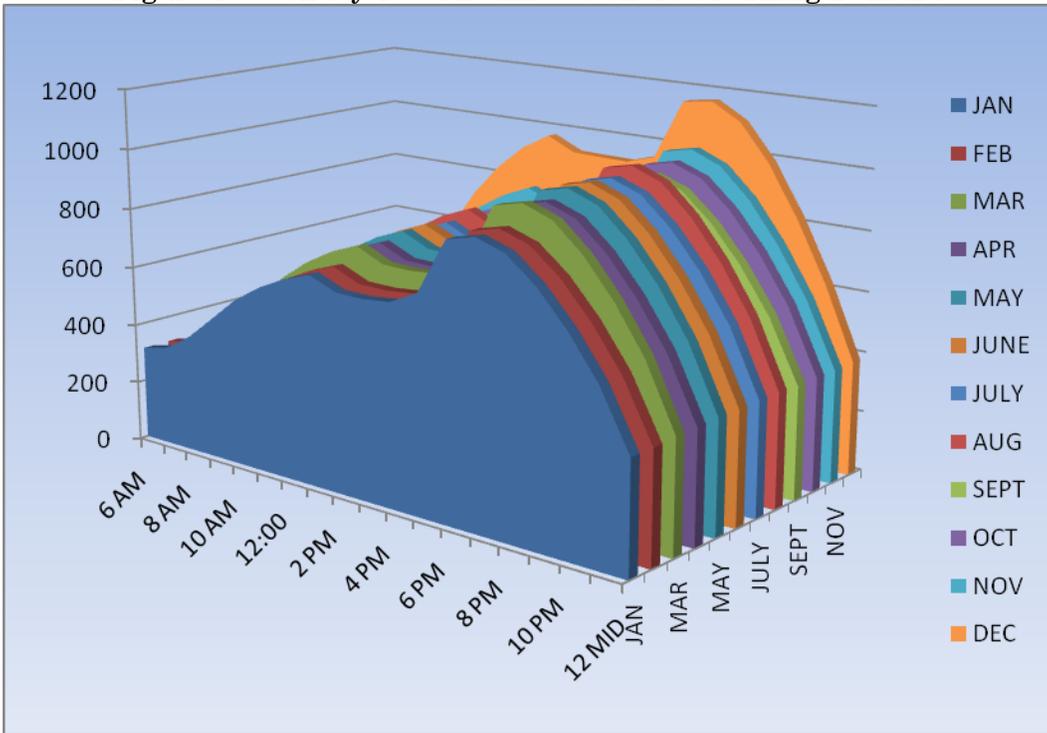


Figure 2 Weekend Total Estimated Shared Parking Demand

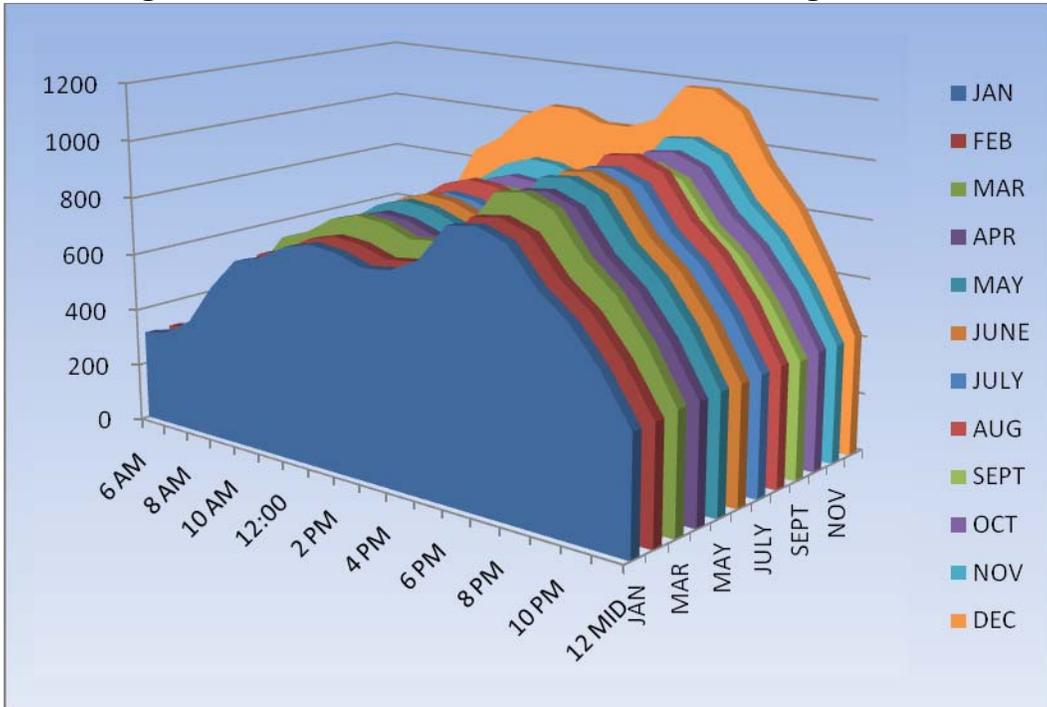


Table 4 Estimated Weekday Shared Parking Demand for Curtis Park Village

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
6 AM	314	314	317	316	318	318	318	319	316	318	319	323
7 AM	335	336	343	341	345	344	345	347	341	345	346	360
8 AM	392	393	406	403	408	408	408	412	403	408	416	448
9 AM	473	476	495	491	499	500	498	507	492	499	516	576
10 AM	556	560	590	584	596	598	592	608	586	596	622	721
11 AM	617	622	660	653	669	672	663	684	656	669	702	832
12:00	663	669	713	705	724	727	716	741	709	724	762	916
1 PM	696	702	750	741	761	766	753	780	746	761	803	971
2 PM	658	664	707	700	718	723	709	736	705	718	761	926
3 PM	656	662	705	698	716	720	706	733	703	716	759	924
4 PM	665	671	712	706	723	728	714	740	710	723	765	922
5 PM	713	719	760	753	770	774	763	786	757	770	807	951
6 PM	894	901	960	946	971	972	968	992	948	971	1000	1151
7 PM	917	924	982	969	993	994	991	1014	970	993	1020	1165
8 PM	885	891	946	933	956	956	955	975	934	956	979	1108
9 PM	806	811	858	847	866	866	866	882	847	866	883	987
10 PM	697	701	739	729	744	743	746	757	728	744	751	819
11 PM	560	563	588	581	591	590	595	599	579	591	590	622
12 MID	369	370	378	376	379	378	381	381	375	379	377	382

Curtis Park Village – Shared Parking Technical Memo
 March 3, 3009

Table 5 Estimated Weekend Shared Parking Demand for Curtis Park Village

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
6 AM	312	312	314	314	315	314	315	315	314	315	316	320
7 AM	334	335	341	340	342	342	342	344	340	342	345	358
8 AM	395	397	408	405	410	410	410	413	405	410	417	444
9 AM	536	539	564	559	569	570	567	579	560	569	589	665
10 AM	644	649	687	679	695	697	691	710	681	695	725	845
11 AM	675	680	722	714	732	735	726	748	717	732	766	904
12:00	729	735	785	775	796	800	789	816	779	796	836	1001
1 PM	756	763	815	805	827	831	818	847	810	827	871	1050
2 PM	747	754	805	796	818	823	808	838	801	818	864	1050
3 PM	715	722	769	762	782	787	771	801	767	782	830	1012
4 PM	728	734	781	774	793	798	783	812	778	793	839	1014
5 PM	778	784	832	824	843	848	835	862	828	843	886	1054
6 PM	906	913	973	960	985	987	981	1007	962	985	1017	1180
7 PM	921	928	987	974	998	1000	995	1020	976	998	1028	1182
8 PM	887	893	948	936	958	959	956	978	937	958	984	1121
9 PM	765	770	812	803	820	821	818	835	803	820	841	947
10 PM	685	689	724	716	730	730	730	742	716	730	743	821
11 PM	562	564	590	583	593	592	595	602	582	593	595	635
12 MID	400	401	412	409	413	412	415	416	408	413	410	417

Table 6 Estimated December Weekday Parking Demand by Project Land Use

	Multi-Family Home	Senior Apartment	Retail	Grocery Store	Restaurant	Dinner Theater	Tot
6:00-7:00 am	231	36	12	6	38	0	323
7:00-8:00	210	33	30	16	70	0	360
8:00-9:00	201	32	84	46	84	0	448
9:00-10:00	190	30	165	90	101	0	576
10:00-11:00	178	28	259	142	114	0	721
11:00-12:00	167	26	336	184	120	0	832
12:00-1:00pm	155	24	391	214	131	0	916
1:00-2:00	167	26	425	233	120	0	971
2:00-3:00	167	26	425	233	75	0	926
3:00-4:00	167	26	425	233	65	8	924
4:00-5:00	178	28	408	224	65	19	922
5:00-6:00	206	32	370	203	102	38	951
6:00-7:00	222	35	353	193	108	240	1151
7:00-8:00	247	39	336	184	108	251	1165
8:00-9:00	250	39	297	163	108	251	1108
9:00-10:00	252	40	233	128	83	251	987
10:00-11:00	254	40	136	75	74	240	819
11:00-12:00	250	39	47	26	68	192	622
12:00-1:00 am	243	38	0	0	35	67	382

Table 7 Estimated December Weekend Parking Demand by Project Land Use

	Multi-Family Home	Senior Apartment	Retail	Grocery Store	Restaurant	Dinner Theater	Tot
6:00-7:00 am	235	36	13	7	28	0	320
7:00-8:00	216	33	33	18	57	0	358
8:00-9:00	205	32	76	41	91	0	444
9:00-10:00	193	30	205	109	128	0	665
10:00-11:00	181	28	310	165	161	0	845
11:00-12:00	169	26	358	191	161	0	904
12:00-1:00 pm	158	24	419	224	176	0	1001
1:00-2:00	169	26	458	244	153	0	1050
2:00-3:00	169	26	477	254	123	0	1050
3:00-4:00	169	26	477	254	79	6	1012
4:00-5:00	181	28	458	244	87	16	1014
5:00-6:00	209	32	434	231	115	32	1054
6:00-7:00	226	35	386	206	129	198	1180
7:00-8:00	252	39	362	193	129	207	1182
8:00-9:00	254	39	319	170	122	216	1121
9:00-10:00	256	40	253	135	66	198	947
10:00-11:00	259	40	176	94	54	198	821
11:00-12:00	254	39	72	38	39	193	635
12:00-1:00 am	247	38	0	0	24	108	417

Date: December 9, 2008

Memorandum

To: Samar Hajeer, City of Sacramento
From: Debbie Yueh
Subject: Curtis Park Village – Trip Generation Comparison of Different Land Uses

This purpose of the memorandum is to present the trip generation comparison performed for the Curtis Park Village project.

Background

Dowling Associates prepared a revised transportation and circulation analysis for the Curtis Park Village project in summer 2008. The analysis was incorporated in the Curtis Park Village Draft EIR (DEIR). The analysis assumed that the proposed project consists of the following land uses:

- A 53,500 square-foot grocery store
- A 25,000 square-foot bookstore
- 92,100 square feet of other retail commercial space
- Two 6,500 square-foot restaurants
- A 42,435 square-foot dinner theater
- A 85,000 square-foot health spa
- A 150-room hotel
- 216 single family residential units
- 7.2 acres of park/open space area

In November 2008, the applicant submitted a revised application with similar roadway network but slightly different land use mix. The hotel and health spa have been replaced by retail and residential components. Although not explicitly stated in the application, for the purpose of analysis, it is assumed that the grocery store and book store will remain part of the new land use mix as described below:

- A 53,500 square-foot grocery store
- A 25,000 square-foot bookstore
- 135,500 square feet of other retail commercial space
- Two 6,500 square-foot restaurants
- A 38,000 square-foot dinner theater
- 183 single family residential units
- An 80-unit senior independent living apartment
- 212 multi-family housing units
- 7.2 acres of park/open space area

Curtis Park Village – Trip Generation Comparison Memo

December 12, 2008

To determine if the revised land uses would generate significantly different amount of trips from those fully analyzed in the DEIR, a trip generation analysis was performed for the revised land uses using the same methodologies described in the transportation section of the DEIR.

Trip Generation Comparison

The trip generation estimates for both land use sets were derived from data published by the Institute of Transportation Engineers (ITE) in *Trip Generation*, 7th edition. A newer edition was published since the completion of the DEIR. However, the 7th edition was used for this comparison because it was the edition available when the Notice of Preparation for the Curtis Park Village EIR was published and because it would be consistent with the DEIR analysis.

The trips generated by the revised land uses and the land uses in the DEIR are presented in Table 1 and Table 2, respectively. The detailed worksheets for the revised land use analysis are attached.

The results indicate that the revised land uses would generate fewer trips than the DEIR land uses on a daily basis as well as during AM, PM and Saturday peak hours in both inbound and outbound directions. Specifically, the revised land uses would generate 923 fewer trips on a daily basis. A total of 51 fewer trips are projected in the AM peak hour and 156 fewer trips in the PM peak hour. During Saturday peak hour, the revised land use is estimated to produce 11 fewer trips.

Conclusion

The revised land uses would produce fewer trips than the land uses analyzed in the DEIR. Although the distribution of the trips might slightly differ between the original hotel and health spa components and the revised retail and residential components, the difference is not significant. Therefore, the DEIR presents a more conservative analysis. Consequently, it is not likely that the revised land uses would result in transportation related impacts not already identified in the DEIR.

Curtis Park Village – Trip Generation Comparison Memo

December 12, 2008

Table 1 – Trip Generation – Revised Land Uses

Land Use	Amount		Trips Generated									
			Weekday	AM Peak Hour			PM Peak Hour			Saturday		
				In	Out	Total	In	Out	Total	In	Out	Total
Retail	135.5	KSF	8,274	115	73	188	367	398	765	549	506	1,055
Retail / Grocery Store	53.5	KSF	4,973	128	82	210	290	279	569	312	299	611
Retail / Bookstore	25.0	KSF	5,278	73	47	120	254	234	488	282	251	533
Restaurants	13.0	KSF	1,653	78	72	150	87	55	142	164	96	260
Dinner Theater	502	Seats	1,436	8	7	15	88	43	131	112	77	189
Multi-Family Residential	212	Units	1,424	22	86	108	87	47	134	66	56	122
Sr Adult Housing	80	Units	278	3	3	6	5	4	9	12	12	24
Single-Family Residential	183	Units	1,813	34	101	134	117	68	185	93	79	172
Park/Open Space	7	Acres	11	0	0	0	0	0	0	1	1	2
Total Project Trips			25,140	461	471	931	1,295	1,128	2,423	1,591	1,377	2,968
Transit Adjustments ^{1,2}												
Retail (-1.8%)			-149	-2	-1	-3	-7	-7	-14	-10	-9	-19
Grocery Store (-1.8%)			-90	-2	-2	-4	-5	-5	-10	-6	-5	-11
Bookstore (-1.8%)			-95	-1	-1	-2	-5	-4	-9	-5	-5	-10
Restaurant (-1.8%)			-30	-2	-1	-3	-2	-1	-3	-3	-2	-5
Dinner Theater (-1.8%)			-26	0	0	0	-1	-1	-2	-2	-1	-3
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1%)			-109	-2	-7	-9	-8	-4	-12	-5	-5	-10
Total Transit Adjustments			-499	-9	-12	-21	-28	-22	-50	-31	-27	-58
Internal Trips			-5,589	-75	-75	-150	-233	-233	-466	-311	-311	-622
Pass-by Trips (31% of net retail trips)			-3,945	-56	-56	-112	-207	-207	-414	-241	-241	-481
New External Trips			15,107	321	328	648	827	666	1,493	1,008	798	1,807

¹ Transit adjustments and transit trips for restaurant and theater are assumed to be the same percentage as for retail use.
² Transit adjustments and transit trips for industrial use are assumed to be the same percentage as for retail use.
³ Pass-by adjustments are made for shopping center, grocery store and bookstore only
Sources: Dowling Associates, Inc. 2008

Curtis Park Village – Trip Generation Comparison Memo

December 9, 2008

Table 2 – Trip Generation – DEIR Land Uses												
Land Use	Amount		Trips Generated									
			Weekday	AM Peak Hour			PM Peak Hour			Saturday		
				In	Out	Total	In	Out	Total	In	Out	Total
Retail	92.1	KSF	6,439	91	58	149	285	308	593	427	394	821
Retail / Grocery Store	53.5	KSF	4,973	128	82	210	290	279	569	312	299	611
Retail / Bookstore	25.0	KSF	5,299	75	48	123	254	234	488	282	251	533
Restaurants	13.0	KSF	1,653	78	72	150	87	55	142	164	96	260
Dinner Theater	560	Seats	1,602	9	8	17	98	48	146	124	87	211
Hotel	150	Rooms	969	41	27	68	47	42	89	35	41	75
Health Spa	85	KSF	2,799	43	60	103	175	169	344	111	111	221
Single-Family Residential	216	Units	2,112	40	121	161	135	79	214	110	93	203
Park/Open Space	7	Acres	11	0	0	0	0	0	0	1	1	2
Total Project Trips			25,857	505	476	981	1,371	1,214	2,585	1,566	1,373	2,937
Transit Adjustments ²												
Retail (-1.8%)			-116	-2	-1	-3	-5	-6	-11	-8	-7	-15
Grocery Store (-1.8%)			-90	-2	-2	-4	-5	-5	-10	-6	-5	-11
Bookstore (-1.8%)			-95	-1	-1	-2	-5	-4	-9	-5	-5	-10
Restaurant (-1.8%)			-30	-2	-1	-3	-2	-1	-3	-3	-2	-5
Dinner Theater (-1.8%)			-29	0	0	0	-2	-1	-3	-2	-2	-4
Hotel			0	0	0	0	0	0	0	0	0	0
Health Spa (-1.8%)			-50	-1	-1	-2	-3	-3	-6	-2	-2	-4
Residential (Daily-3.1%,am,-3.7%,pm-3.6%,Sat-3.1%)			-65	-1	-4	-6	-5	-3	-8	-3	-3	-6
Total Transit Adjustments			-475	-9	-10	-20	-27	-23	-50	-29	-26	-55
Internal Trips			-5,807	-78	-78	-156	-259	-259	-518	-315	-315	-630
Pass-by Trips (33% of net retail trips)³			-3,545	-53	-53	-106	-184	-184	-368	-217	-217	-434
New External Trips			16,030	365	335	699	901	748	1,649	1,005	815	1,818

¹ Transit adjustments and transit trips for restaurant and theater are assumed to be the same percentage as for retail use.
² Transit adjustments and transit trips for industrial use are assumed to be the same percentage as for retail use.
³ Pass-by adjustments are made for shopping center, grocery store and bookstore only
Sources: Dowling Associates, Inc. 2008

Curtis Park Village
Trip Generation - Revised Land Use (December 2008) - DEIR Proposed Project

Trip Generation Land Use Category	Amount	Source	Trips Generated									Distribution						
			Weekday	AM Peak Hour			PM Peak Hour			Saturday			AM Peak		PM Peak		Saturday	
				In	Out	Total	In	Out	Total	In	Out	Total	In	Out	In	Out	In	Out
Retail (Shopping Center)	135.5 KSF	ITE (820)	8,274	115	73	188	367	398	765	549	506	1,055	61%	39%	48%	52%	52%	48%
Retail / Grocery Store	53.5 KSF	ITE (850)	4,973	128	82	210	290	279	569	312	299	611	61%	39%	51%	49%	51%	49%
Retail / Bookstore	25.0 KSF	ITE (868)	5,278	73	47	120	254	234	488	282	251	533	61%	39%	52%	48%	53%	47%
Restaurant	13.0 KSF	ITE (932)	1,653	78	72	150	87	55	142	164	96	260	52%	48%	61%	39%	63%	37%
Dinner Theater	502 Seats	ITE (931)	1,436	8	7	15	88	43	131	112	77	189	52%	48%	67%	33%	59%	41%
Multi-Family Residential	212 Units	ITE (220) ¹	1,424	22	86	108	87	47	134	66	56	122	20%	80%	65%	35%	54%	46%
Sr Adult Housing	80 Units	ITE (252) ¹	278	3	3	6	5	4	9	12	12	24	45%	55%	61%	39%	50%	50%
Single-Family Residential	183 Units	ITE (210)	1,813	34	101	134	117	68	185	93	79	172	25%	75%	63%	37%	54%	46%
Park/Open Space	7.2 Acres	ITE (411)	11	0	0	0	0	0	0	1	1	2	50%	50%	50%	50%	50%	50%
Total Project Trips			25,140	461	471	931	1,295	1,128	2,423	1,591	1,377	2,968						
Transit Adjustments																		
Retail (-1.8%)			-149	-2	-1	-3	-7	-7	-14	-10	-9	-19						
Grocery Store (-1.8%)			-90	-2	-2	-4	-5	-5	-10	-6	-5	-11						
Bookstore (-1.8%)			-95	-1	-1	-2	-5	-4	-9	-5	-5	-10						
Restaurant (-1.8%)			-30	-2	-1	-3	-2	-1	-3	-3	-2	-5						
Dinner Theater (-1.8%)			-26	0	0	0	-1	-1	-2	-2	-1	-3						
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1)			-109	-2	-7	-9	-8	-4	-12	-5	-5	-10						
Total Transit Adjustments			-499	-9	-12	-21	-28	-22	-50	-31	-27	-58						
Internal Trips			-5,589	-75	-75	-150	-233	-233	-466	-311	-311	-622						
Pass-by Trips (31% of net retail trips)			-3,945	-56	-56	-112	-207	-207	-414	-241	-241	-481						
New External Trips			15,107	321	328	648	827	666	1,493	1,008	798	1,807						
Transit Trips																		
Retail (2.2%)			476	9	6	15	22	24	46	30	28	58						
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)			134	3	9	11	9	5	15	6	6	12						
Total Transit Trips			610	12	15	26	31	29	61	36	34	70						

¹ Transit adjustments and transit trips for restaurant, theater and health spa are assumed to be the same percentage as for retail use.

² Pass-by adjustments are made for shopping center, grocery store and bookstore only

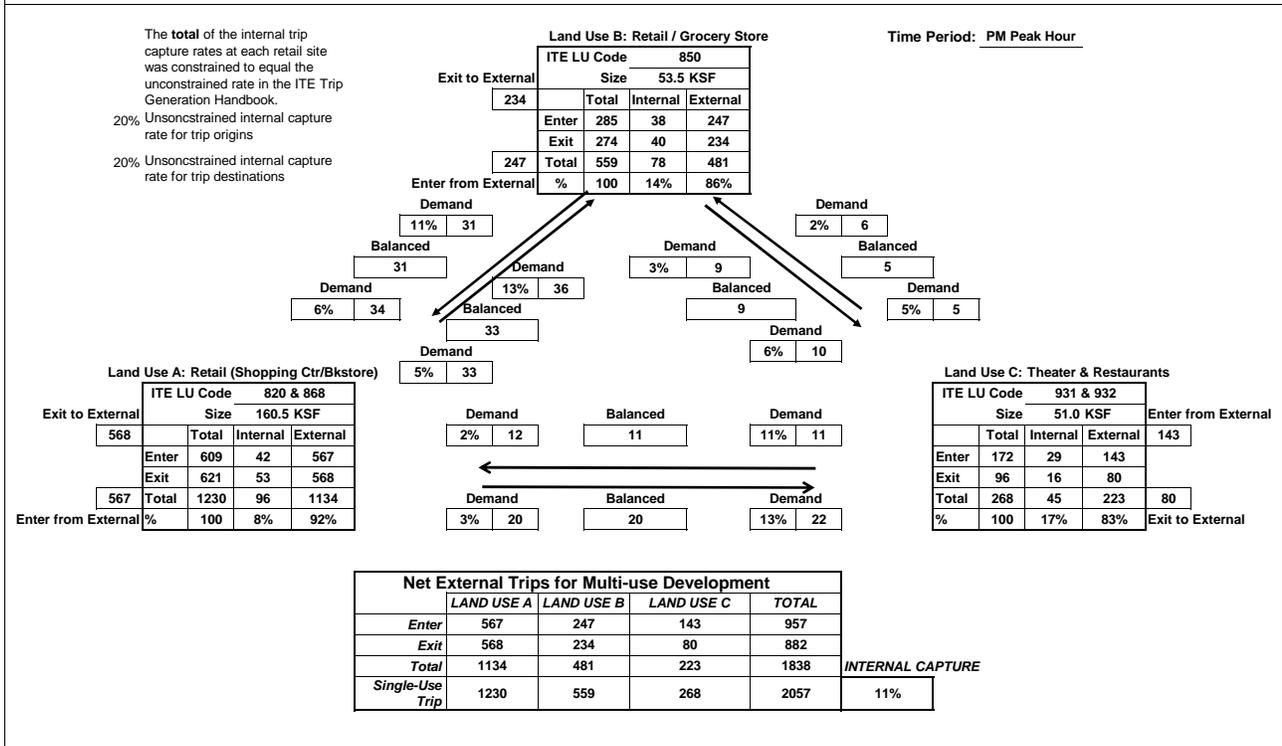
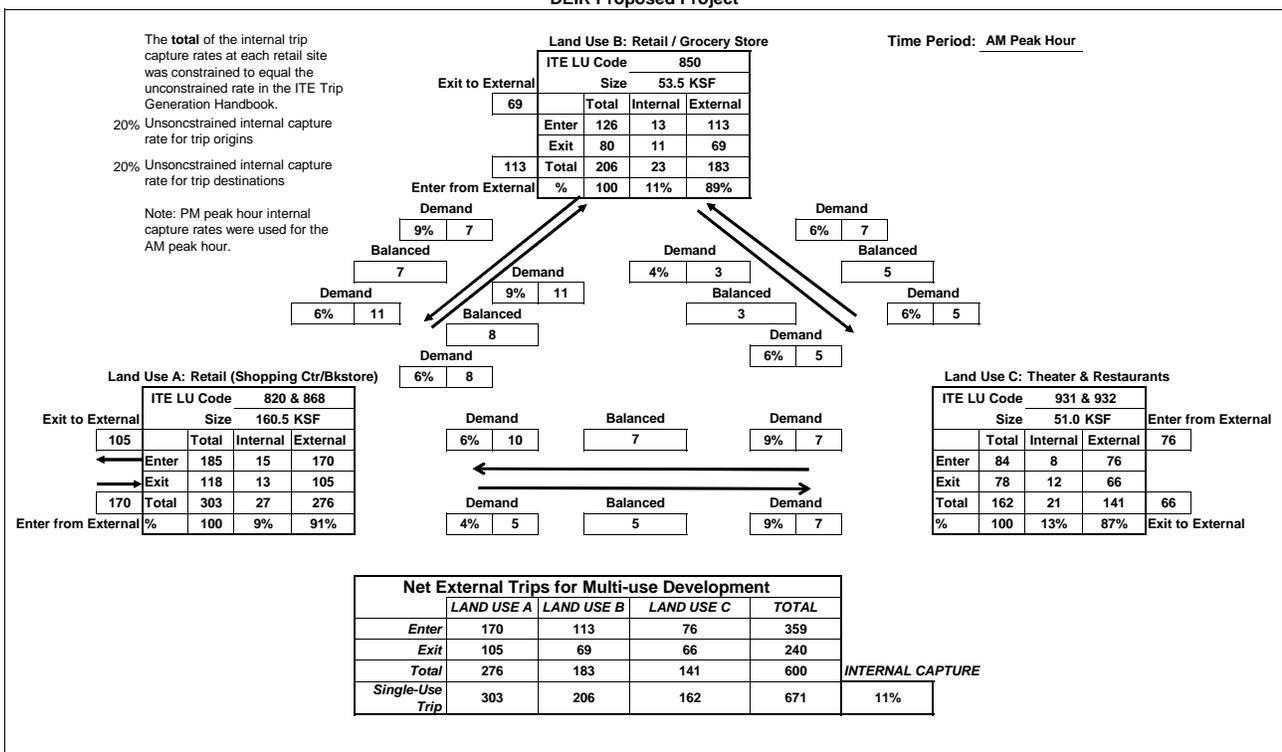
³ Weekday and AM peak hour trips of Bookstore derived from trip generation ratio of Retail/Shopping Center

Analyst: Dowling

Date: 12/8/2008

**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Revised Land Use (December 2008)
DEIR Proposed Project**

Name of Development: Curtis Park

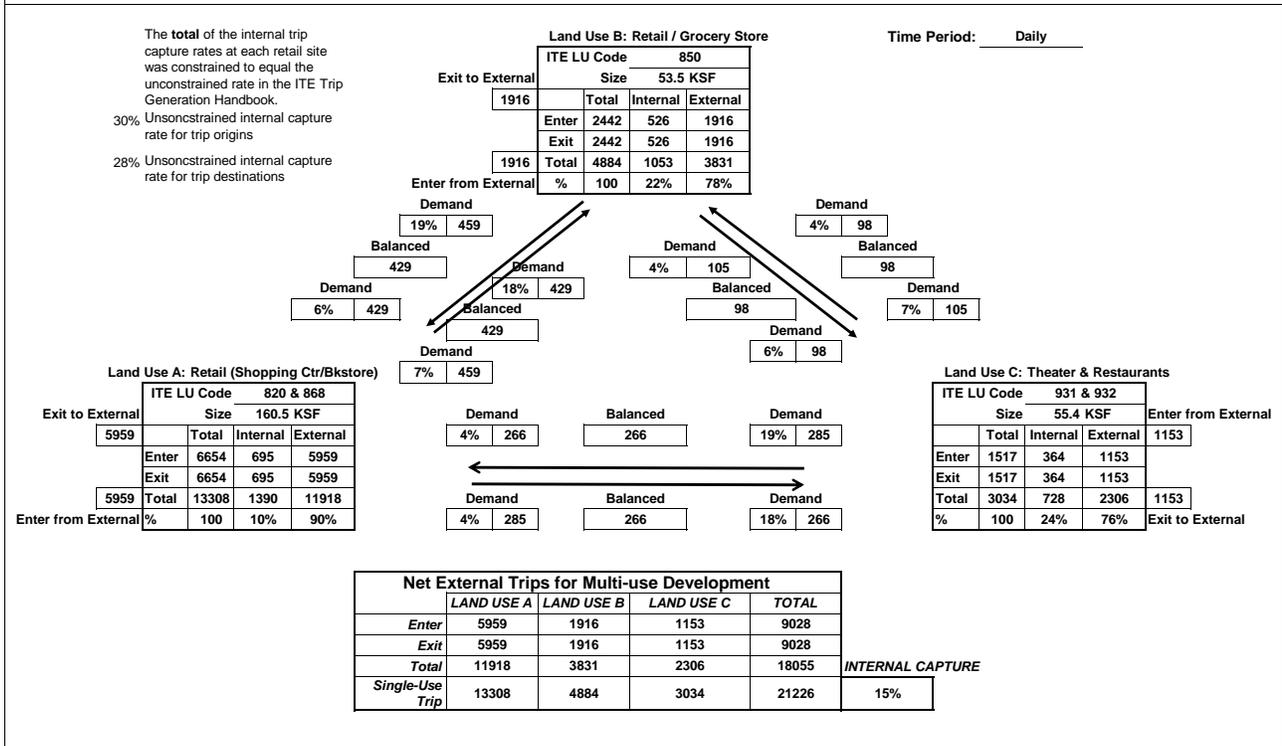
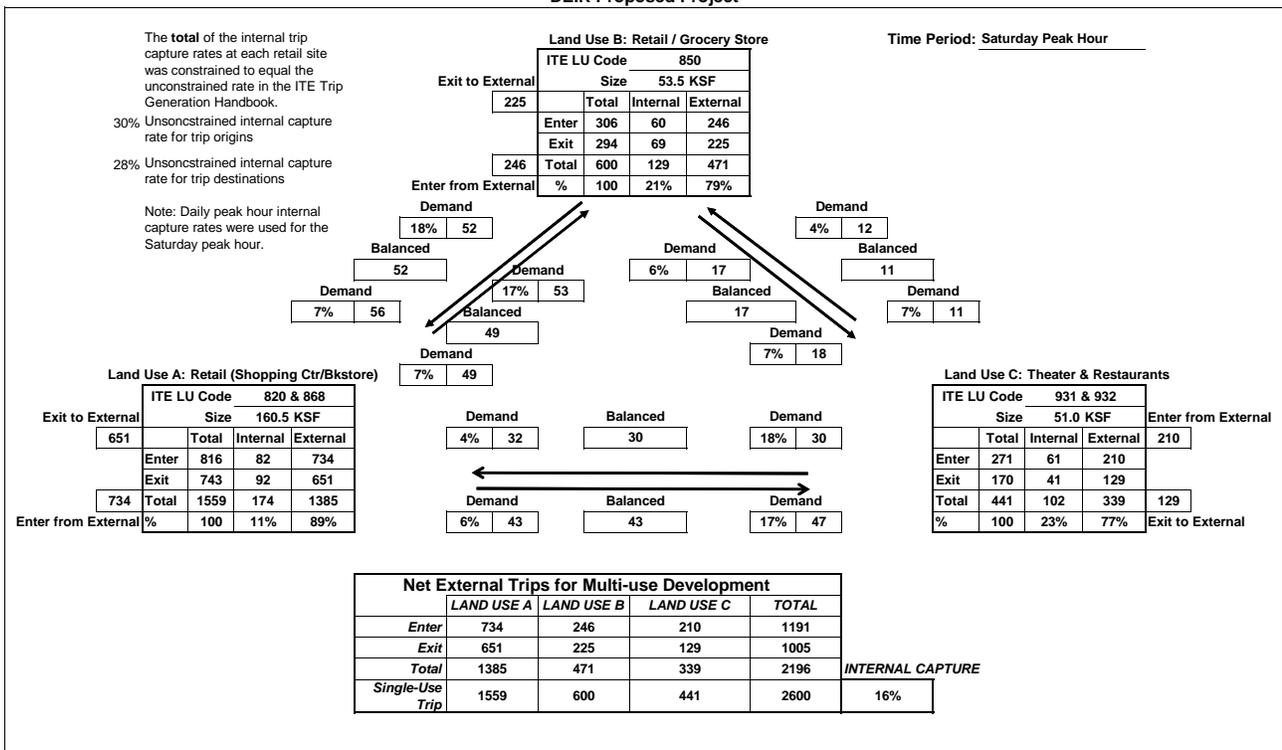


Analyst: Dowling

Date: 12/8/2008

**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Revised Land Use (December 2008)
DEIR Proposed Project**

Name of Development: Curtis Park



Trip Generation Worksheets

**Curtis Park Village
Trip Generation**

Trip Generation Land Use Category	Amount	Source	Trips Generated									Distribution						
			Weekday	AM Peak Hour			PM Peak Hour			Saturday			AM Peak		PM Peak		Saturday	
				In	Out	Total	In	Out	Total	In	Out	Total	In	Out	In	Out	In	Out
Alternative 1: No Project/No Build Alternative																		
New Trips				0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Alternative 2: Proposed Project																		
Retail (Shopping Center)	92.1 KSF	ITE (820)	6,439	91	58	149	285	308	593	427	394	821	61%	39%	48%	52%	52%	48%
Retail / Grocery Store	53.5 KSF	ITE (850)	4,973	128	82	210	290	279	569	312	299	611	61%	39%	51%	49%	51%	49%
Retail / Bookstore	25.0 KSF	ITE (868)	5,299	75	48	123	254	234	488	282	251	533	61%	39%	52%	48%	53%	47%
Restaurant	13.0 KSF	ITE (932)	1,653	78	72	150	87	55	142	164	96	260	52%	48%	61%	39%	63%	37%
Dinner Theater	560.0 Seats	ITE (931)	1,602	9	8	17	98	48	146	124	87	211	52%	48%	67%	33%	59%	41%
Hotel	150.0 Rooms	ITE (310)	969	41	27	68	47	42	89	35	41	75	61%	39%	53%	47%	46%	54%
Health Spa	85.0 KSF	ITE (492)	2,799	43	60	103	175	169	344	111	111	221	42%	58%	51%	49%	50%	50%
Single-Family Residential	216 Units	ITE (210)	2,112	40	121	161	135	79	214	110	93	203	25%	75%	63%	37%	54%	46%
Park/Open Space	7.2 Acres	ITE (411)	11	0	0	0	0	0	0	1	1	2	50%	50%	50%	50%	50%	50%
Total Project Trips			25,857	505	476	981	1,371	1,214	2,585	1,566	1,373	2,937						
Transit Adjustments																		
Retail (-1.8%)			-116	-2	-1	-3	-5	-6	-11	-8	-7	-15						
Grocery Store (-1.8%)			-90	-2	-2	-4	-5	-5	-10	-6	-5	-11						
Bookstore (-1.8%)			-95	-1	-1	-2	-5	-4	-9	-5	-5	-10						
Restaurant (-1.8%)			-30	-2	-1	-3	-2	-1	-3	-3	-2	-5						
Dinner Theater (-1.8%)			-29	0	0	0	-2	-1	-3	-2	-2	-4						
Hotel			0	0	0	0	0	0	0	0	0	0						
Health Spa (-1.8%)			-50	-1	-1	-2	-3	-3	-6	-2	-2	-4						
Residential (Daily -3.1%, a.m. -3.7% p.m. -3.6%, Sat -3.1%)			-65	-1	-4	-6	-5	-3	-8	-3	-3	-6						
Total Transit Adjustments			-475	-9	-10	-20	-27	-23	-50	-29	-26	-55						
Internal Trips			-5,807	-78	-78	-156	-259	-259	-518	-315	-315	-630						
Pass-by Trips (33% of net retail trips)			-3,545	-53	-53	-106	-184	-184	-368	-217	-217	-434						
New External Trips			16,030	365	335	699	901	748	1,649	1,005	815	1,818						
Transit Trips																		
Retail (2.2%)			501	10	7	17	24	26	50	30	28	58						
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)			80	2	5	7	6	4	10	4	4	8						
Total Transit Trips			581	12	12	24	30	30	60	34	32	66						

Trip Generation Land Use Category	Amount	Source	Trips Generated									Distribution						
			Weekday	AM Peak Hour			PM Peak Hour			Saturday			AM Peak		PM Peak		Saturday	
				In	Out	Total	In	Out	Total	In	Out	Total	In	Out	In	Out	In	Out
Alternative 3: Reduced Commercial Alternative A																		
Retail (Shopping Center)	93.5 KSF	ITE (820)	6,501	92	59	150	288	311	599	431	398	829	61%	39%	48%	52%	52%	48%
Retail / Grocery Store	56.5 KSF	ITE (850)	5,174	140	90	230	303	291	594	324	312	636	61%	39%	51%	49%	51%	49%
													61%	39%	52%	48%	53%	47%
Multi-Family Residential	316 Units	ITE (220) ¹	2,050	32	127	159	124	67	191	91	78	169	20%	80%	65%	35%	54%	46%
Single-Family Residential	270 Units	ITE (210)	2,593	50	149	198	165	97	262	136	115	251	25%	75%	63%	37%	54%	46%
Park/Open Space	7.2 Acres	ITE (411)	11	0	0	0	0	0	0	1	1	2	50%	50%	50%	50%	50%	50%
Total Project Trips			16,329	314	425	737	880	766	1,646	983	904	1,887						
Transit Adjustments																		
Retail (-1.8%)			-117	-2	-1	-3	-5	-6	-11	-8	-7	-15						
Grocery Store (-1.8%)			-93	-2	-1	-3	-5	-6	-11	-8	-7	-15						
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1%)			-144	-3	-10	-13	-10	-6	-16	-7	-6	-13						
Total Transit Adjustments			-354	-7	-12	-19	-20	-18	-38	-23	-20	-43						
Internal Trips			-3,878	-36	-36	-71	-181	-181	-362	-241	-241	-481						
Pass-by Trips (40% of net retail trips)			-2,633	-53	-53	-105	-141	-141	-281	-166	-166	-331						
New External Trips			9,464	218	324	542	538	426	965	553	477	1,032						
Transit Trips																		
Retail (2.2%)			143	2	1	3	6	7	13	9	9	18						
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)			176	4	12	16	13	7	20	9	7	16						
Total Transit Trips			319	6	13	19	19	14	33	18	16	34						
Alternative 4: Reduced Commercial Alternative B																		
Retail (Shopping Center)	43.5 KSF	ITE (820)	3,953	58	37	95	173	188	361	262	242	504	61%	39%	48%	52%	52%	48%
Retail / Grocery Store	56.5 KSF	ITE (850)	5,174	140	90	230	303	291	594	324	312	636	61%	39%	51%	49%	51%	49%
													61%	39%	52%	48%	53%	47%
Multi-Family Residential	316 Units	ITE (220) ¹	2,050	32	127	159	124	67	191	91	78	169	20%	80%	65%	35%	54%	46%
Single-Family Residential	308 Units	ITE (210)	2,927	56	169	225	186	109	295	154	131	285	25%	75%	63%	37%	54%	46%
Park/Open Space	7.2 Acres	ITE (411)	11	0	0	0	0	0	0	1	1	2	50%	50%	50%	50%	50%	50%
Total Project Trips			14,115	286	423	709	786	655	1,441	832	764	1,596						
Transit Adjustments																		
Retail (-1.8%)			-71	-1	-1	-2	-3	-3	-6	-5	-4	-9						
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1%)			-154	-3	-11	-14	-11	-6	-17	-8	-6	-14						
Total Transit Adjustments			-225	-4	-12	-16	-14	-9	-23	-13	-10	-23						
Internal Trips			-3,053	-29	-29	-58	-144	-144	-288	-193	-193	-386						
Pass-by Trips (50% of net retail trips)			-2,343	-52	-52	-103	-129	-129	-258	-146	-146	-291						
New External Trips			8,494	201	330	532	499	373	872	480	415	896						
Transit Trips																		
Retail (2.2%)			87	1	1	2	4	4	8	6	5	11						
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)			189	4	13	17	14	8	22	9	8	17						
Total Transit Trips			276	5	14	19	18	12	30	15	13	28						

Trip Generation Land Use Category	Amount	Source	Trips Generated									Distribution						
			Weekday	AM Peak Hour			PM Peak Hour			Saturday			AM Peak		PM Peak		Saturday	
				In	Out	Total	In	Out	Total	In	Out	Total	In	Out	In	Out	In	Out
Alternative 5: Single Family Alternative																		
Single-Family Residential	411 Units	ITE (210)	3,817	74	223	297	241	142	383	204	173	377	25%	75%	63%	37%	54%	46%
Park/Open Space	7.2 Acres	ITE (411)	11	0	0	0	0	0	0	1	1	2	50%	50%	50%	50%	50%	50%
Total Project Trips			3,828	74	223	297	241	142	383	205	174	379						
Transit Adjustments																		
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1%)			-118	-3	-8	-11	-9	-5	-14	-6	-5	-12						
New External Trips			3,710	71	215	286	232	137	369	199	169	367						
Transit Trips																		
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)			145	3	10	13	11	6	17	8	7	14						
Alternative 6: Existing General Plan and Zoning Alternative - Industrial																		
Heavy Industrial (Manufacturing)	779.9 KSF	ITE (140)	3,005	476	142	618	214	381	595	109	109	218	77%	23%	36%	64%	50%	50%
Single-Family Residential	18 Units	ITE (210)	215	3	10	13	14	9	23	9	8	17	25%	75%	63%	37%	54%	46%
Total Project Trips			3,220	479	152	631	228	390	618	118	117	235						
Transit Adjustments ²																		
Industrial (-1.8%)			-54	-8	-3	-11	-4	-7	-11	-2	-2	-4						
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1%)			-7	0	0	0	-1	0	-1	0	0	-1						
Total Transit Adjustments			-61	-8	-3	-11	-5	-7	-12	-2	-2	-5						
New External Trips			3,159	471	149	620	223	383	606	116	115	230						
Transit Trips ²																		
Industrial (2.2%)			66	11	3	14	5	8	13	3	3	5						
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)			8	0	0	1	1	0	1	0	0	1						
Total Transit Trips			74	11	3	15	6	8	14	3	3	6						
Alternative 7: Multi-Family Alternative C																		
Retail (Shopping Center)	118.5 KSF	ITE (820)	7,583	106	67	173	336	364	700	503	464	967	61%	39%	48%	52%	52%	48%
Retail / Grocery Store	56.5 KSF	ITE (850)	5,174	140	90	230	303	291	594	324	312	636	61%	39%	51%	49%	51%	49%
Retail / Bookstore	25.0 KSF	ITE (868)	5,286	74	47	121	254	234	488	282	251	533	61%	39%	52%	48%	53%	47%
Multi-Family Residential	316 Units	ITE (220) ¹	2,050	32	127	159	124	67	191	91	78	169	20%	80%	65%	35%	54%	46%
Single-Family Residential	250 Units	ITE (210)	2,416	46	138	184	154	91	245	126	107	233	25%	75%	63%	37%	54%	46%
Park/Open Space	7.2 Acres	ITE (411)	11	0	0	0	0	0	0	1	1	2	50%	50%	50%	50%	50%	50%
Total Project Trips			22,520	398	469	867	1,171	1,047	2,218	1,327	1,213	2,540						
Transit Adjustments																		
Retail (-1.8%)			-136	-2	-1	-3	-6	-7	-13	-9	-8	-17						
Grocery Store (-1.8%)			-93	-2	-2	-4	-6	-5	-11	-6	-5	-11						
Bookstore (-1.8%)			-95	-1	-1	-2	-5	-4	-9	-5	-5	-10						
Residential (Daily -3.1%, a.m. -3.7%, p.m. -3.6%, Sat. -3.1%)			-138	-3	-10	-13	-10	-6	-16	-7	-6	-12						
Total Transit Adjustments			-462	-8	-14	-22	-27	-22	-49	-27	-24	-50						
Internal Trips																		
Pass-by Trips (32% of net retail trips)			-6,275	-56	-56	-111	-277	-277	-554	-332	-332	-665						
New External Trips			12,129	269	334	605	676	557	1,233	739	628	1,367						
Transit Trips																		
Retail (2.2%)			397	7	5	12	19	20	39	24	23	47						
Residential (Daily 3.8%, a.m. 4.5%, p.m. 4.5%, Sat. 3.8%)			170	4	12	15	13	7	20	8	7	15						
Total Transit Trips			567	11	17	27	32	27	59	32	30	62						

**Curtis Park Village
Adjustments to ITE Trip Generation Rates for High Transit Ridership**

Walk Access to Transit	Work Trips^a	Non-Work Trips^b	Total		
Sacramento Downtown	7.4%	1.8%			
Sacramento Suburban	1.4%	0.3%			
Increase Above Suburban Conditions	6.0%	1.5%			
Adjustment for Retail¹	0.4%	1.4%	1.8%		
Adjustments for Residential^c	Home-Work	Home-Non-Work	Non Home-Based		
AM Peak Hour	2.9%	0.8%	0.0%	3.7%	
PM Peak Hour	2.8%	0.8%	0.0%	3.6%	
Daily	2.1%	1.0%	0.0%	3.1%	

Transit Trips

	Work Trips	Non-Work Trips			
Retail¹	0.5%	1.7%	2.2%		
Residential^c	Home-Work	Home-Non-Work	Non Home-Based		
AM Peak Hour	3.6%	0.9%	0.0%	4.5%	
PM Peak Hour	3.5%	0.9%	0.0%	4.5%	
Daily	2.6%	1.2%	0.0%	3.8%	

¹ Assumes 7 percent of retail trips are work trips.

Source: *Pre-Census Travel Behavior Report: Analysis of the 2000 SACOG Household Travel Survey*, DKS, 2001. Table references from the source are provided as follows:

^a Table A26

^a Table A27

^c The amount of transit use for each trip purpose is based on the following data from Table A33:

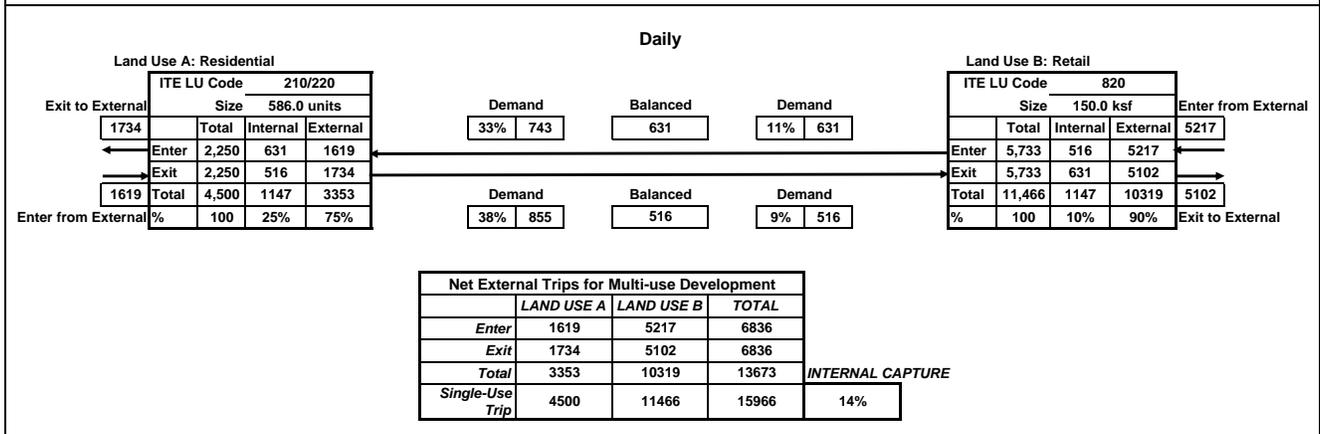
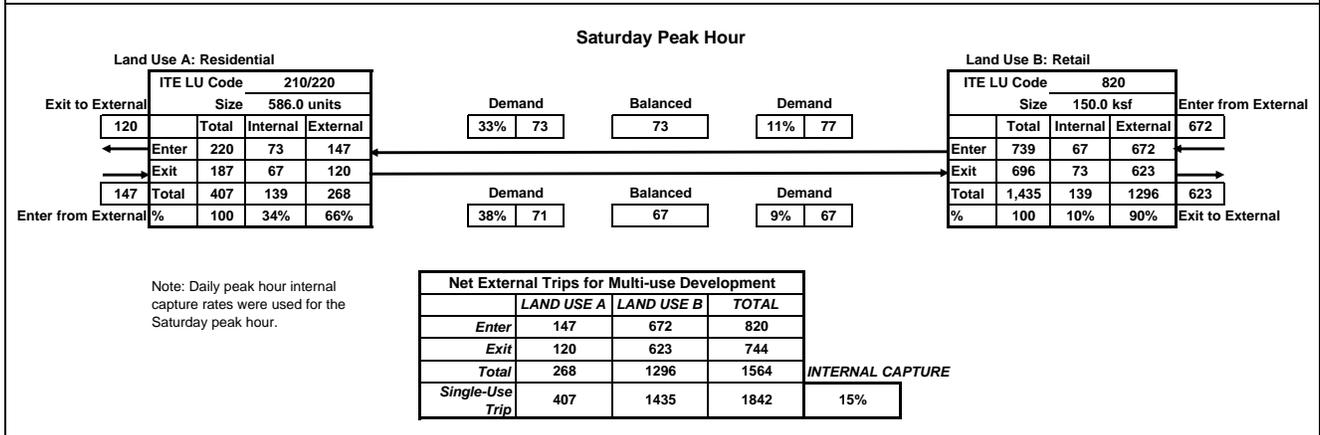
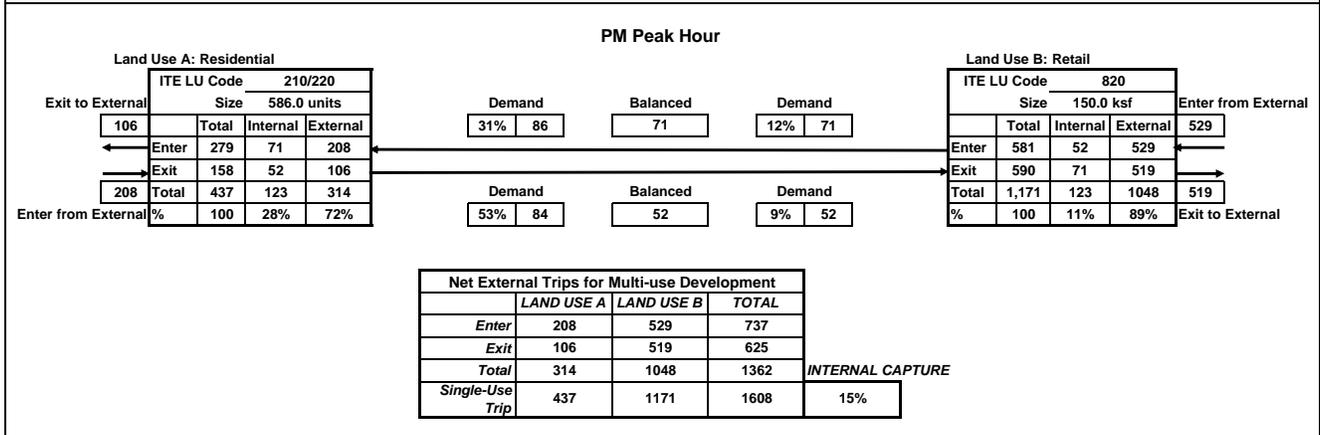
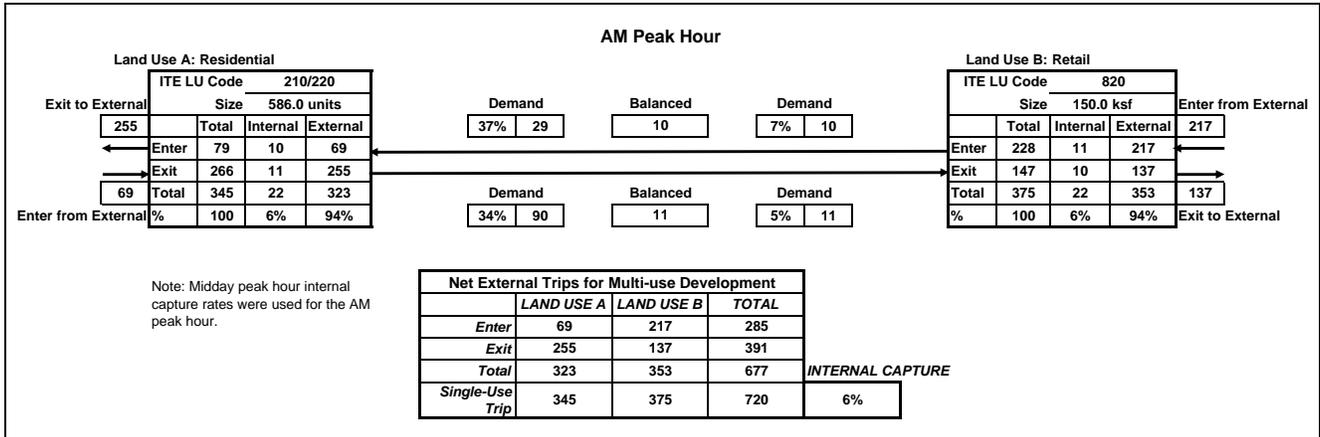
Travel Hours	Home-Work	Home-Non-Work	Non Home-Based	Total
AM Peak Hour	73,190	78,124	25,868	177,182
PM Peak Hour	60,563	67,068	47,784	175,415
Daily	473,704	861,535	557,764	1,893,003

**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Alternative 3: Reduced Commercial Alternative A**

Analyst: Dowling

Name of Development: Curtis Park

Date: 6/2/2008

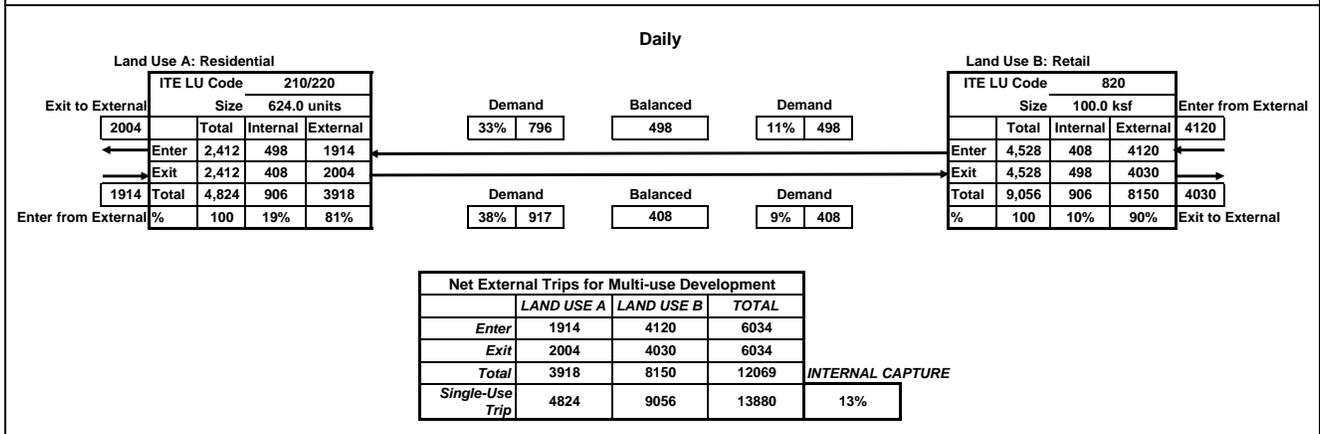
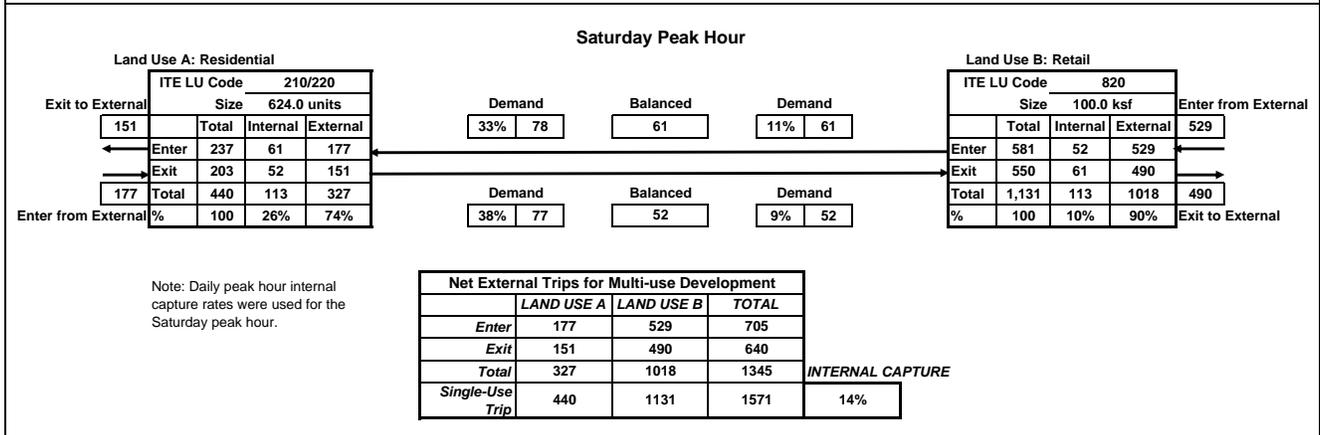
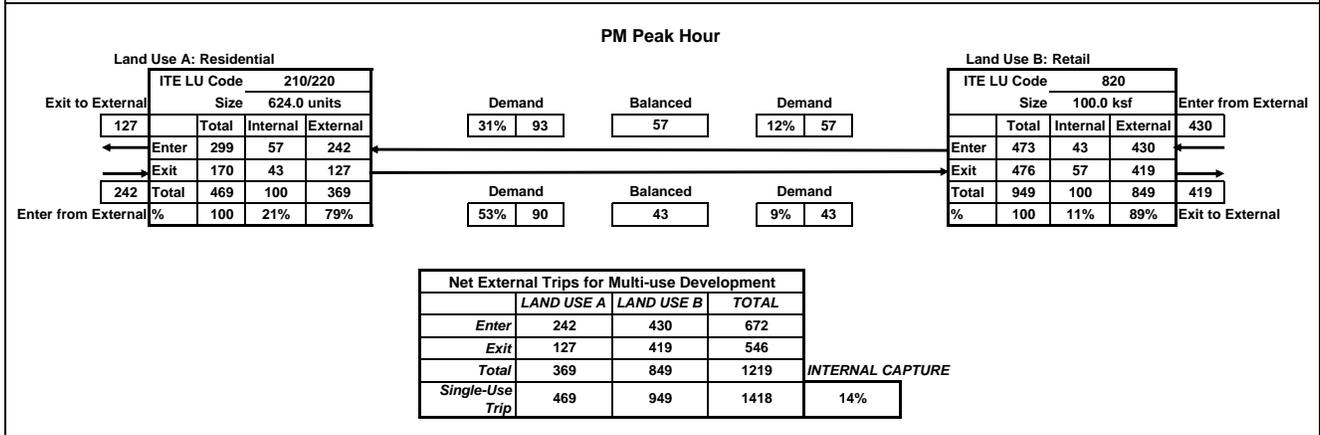
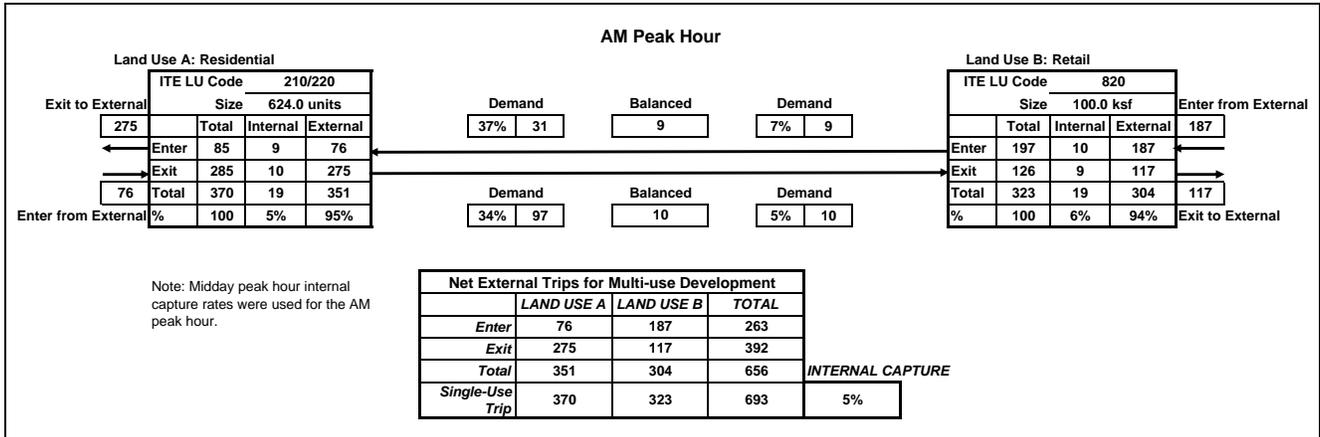


**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Alternative 4: Reduced Commercial Alternative B**

Analyst: Dowling

Name of Development: Curtis Park

Date: 6/2/2008

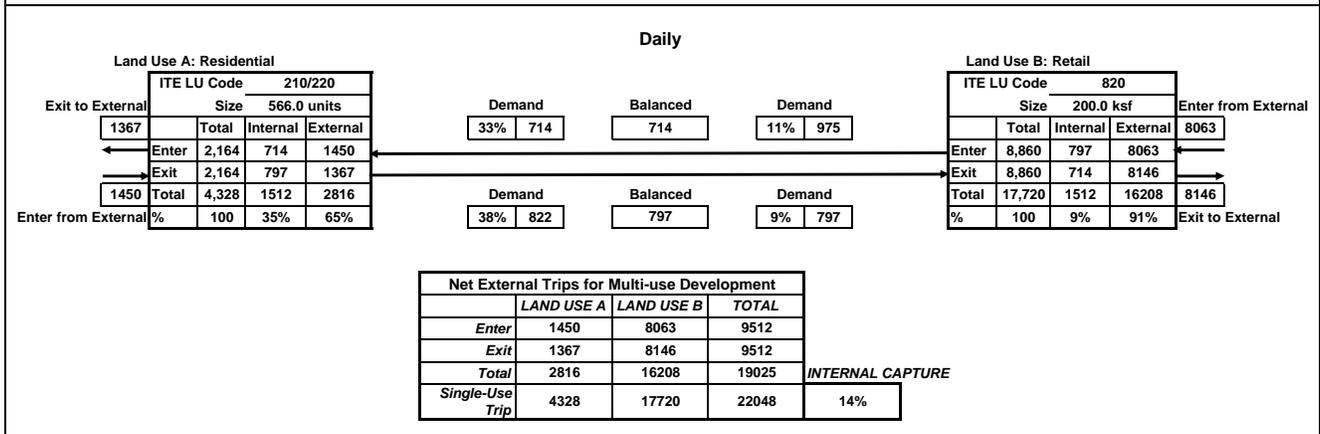
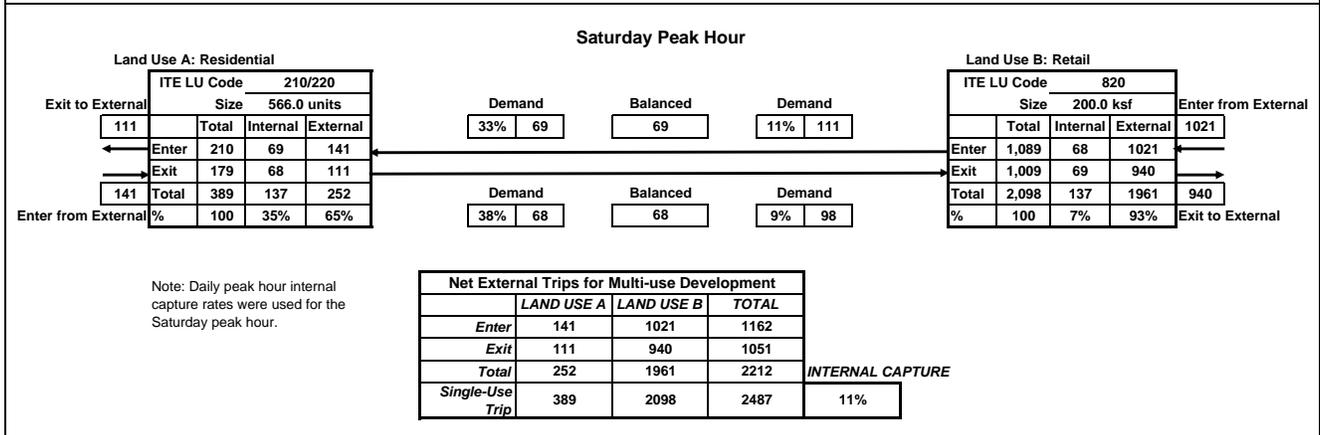
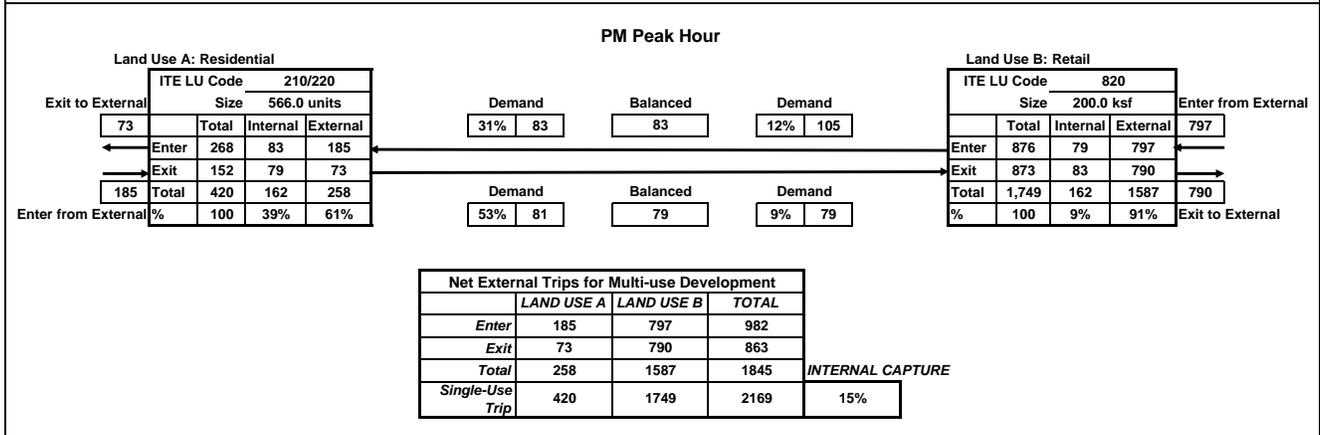
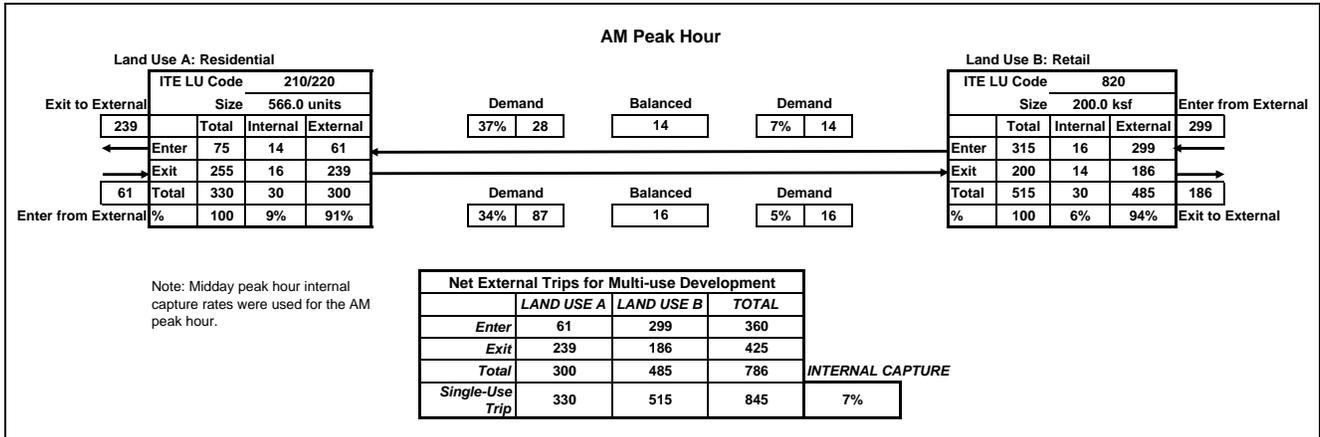


**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Alternative 7: Multi-Family Alternative C**

Analyst: Dowling

Name of Development: Curtis Park

Date: 6/2/2008

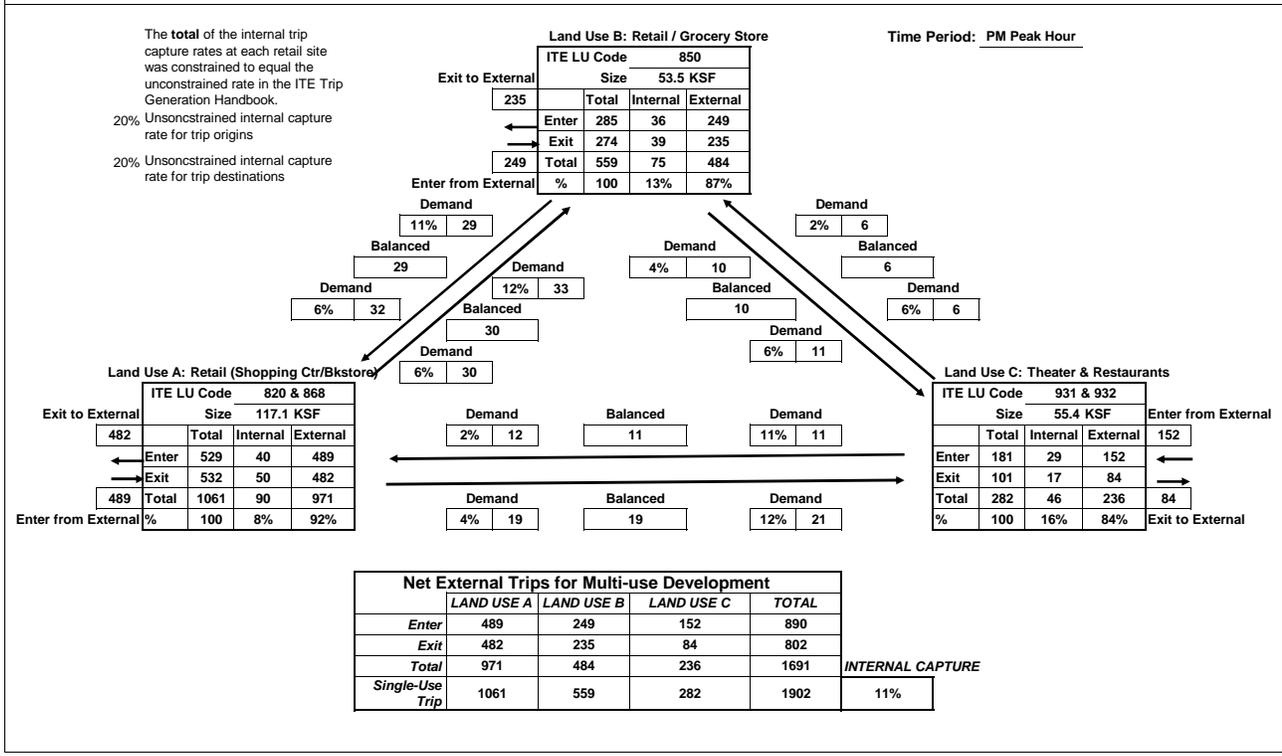
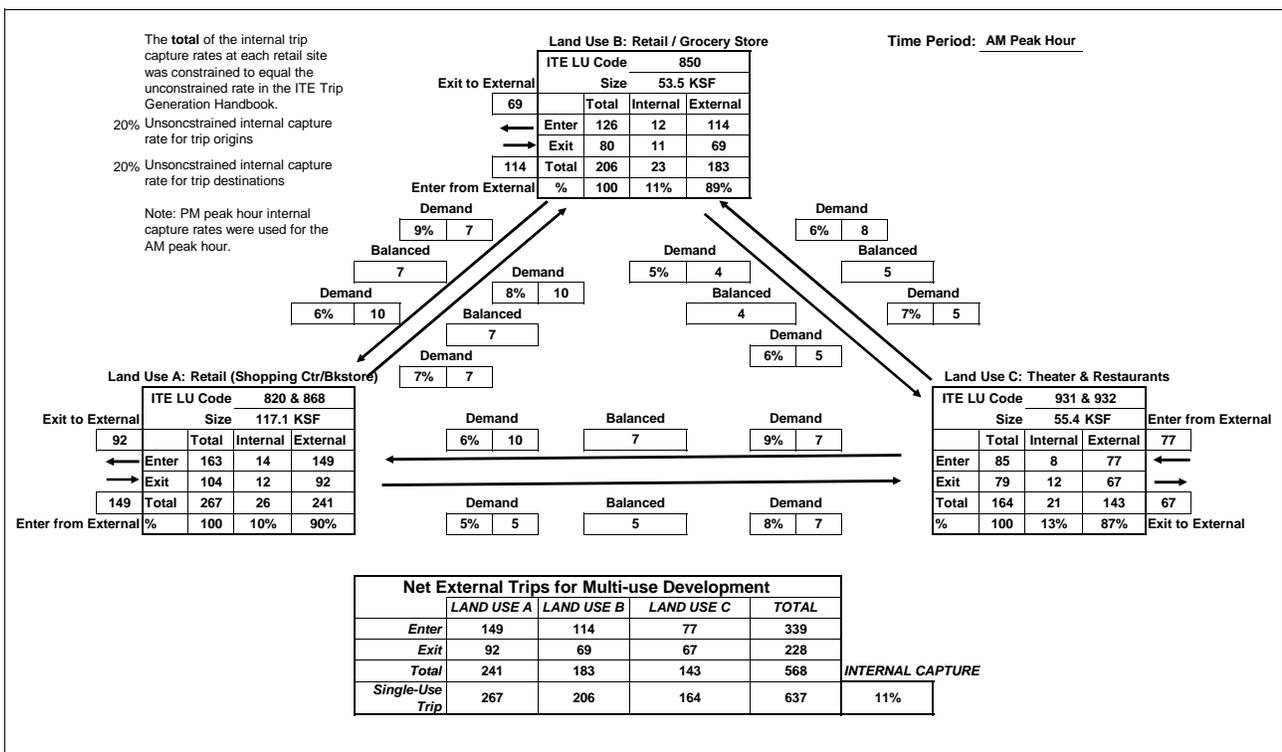


Analyst: Dowling

**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Alternative 2: Proposed Project**

Name of Development: Curtis Park

Date: 6/2/2008

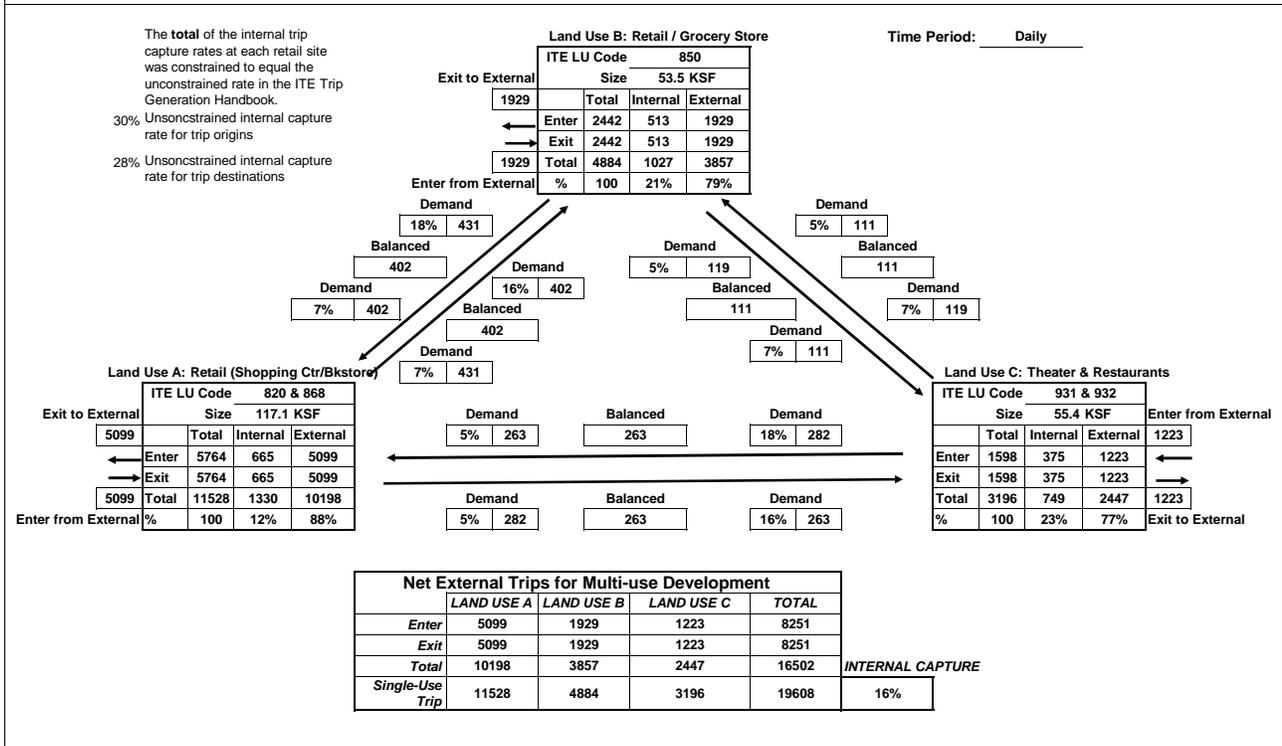
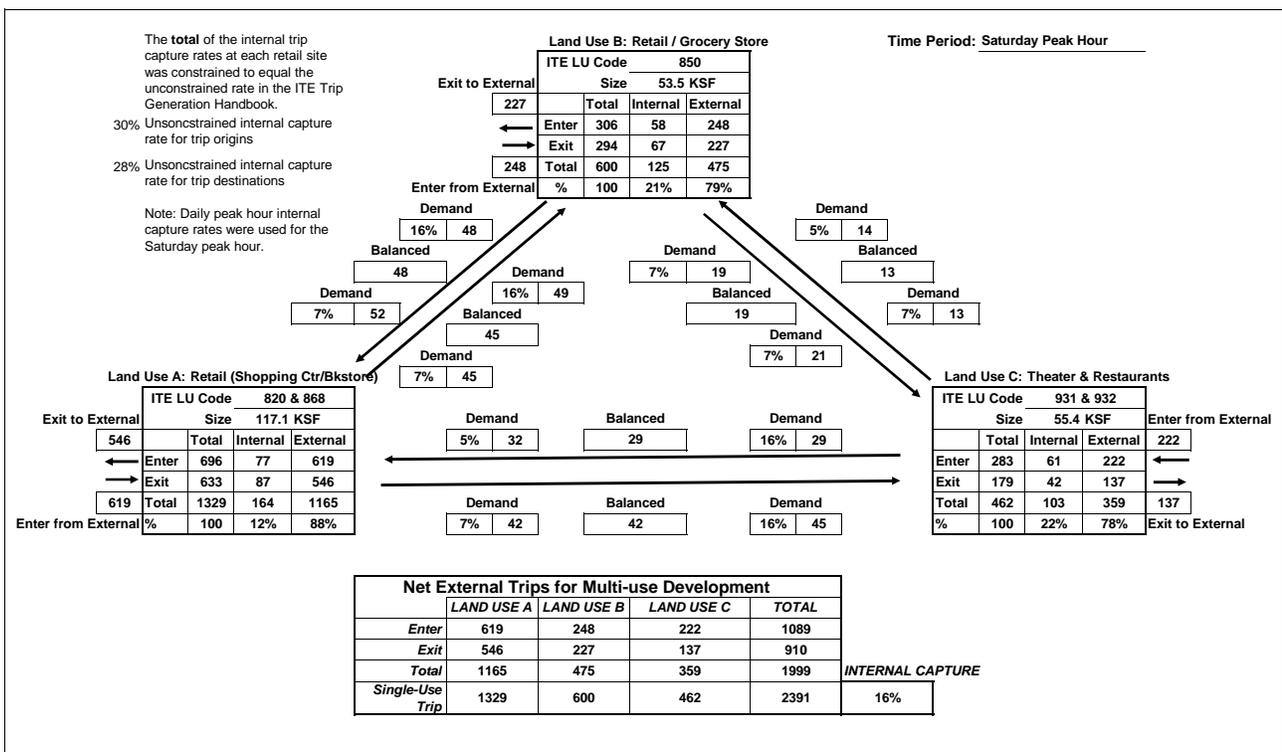


Analyst: Dowling

**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Alternative 2: Proposed Project**

Name of Development: Curtis Park

Date: 6/2/2008

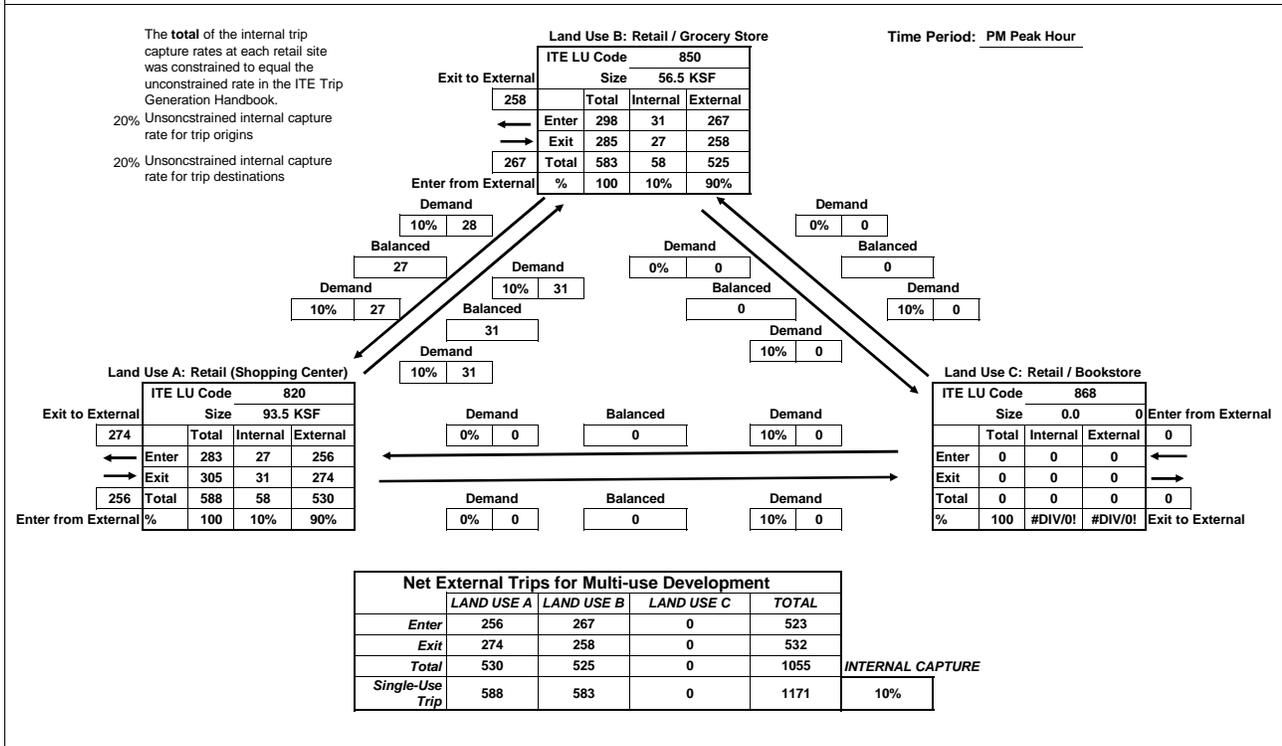
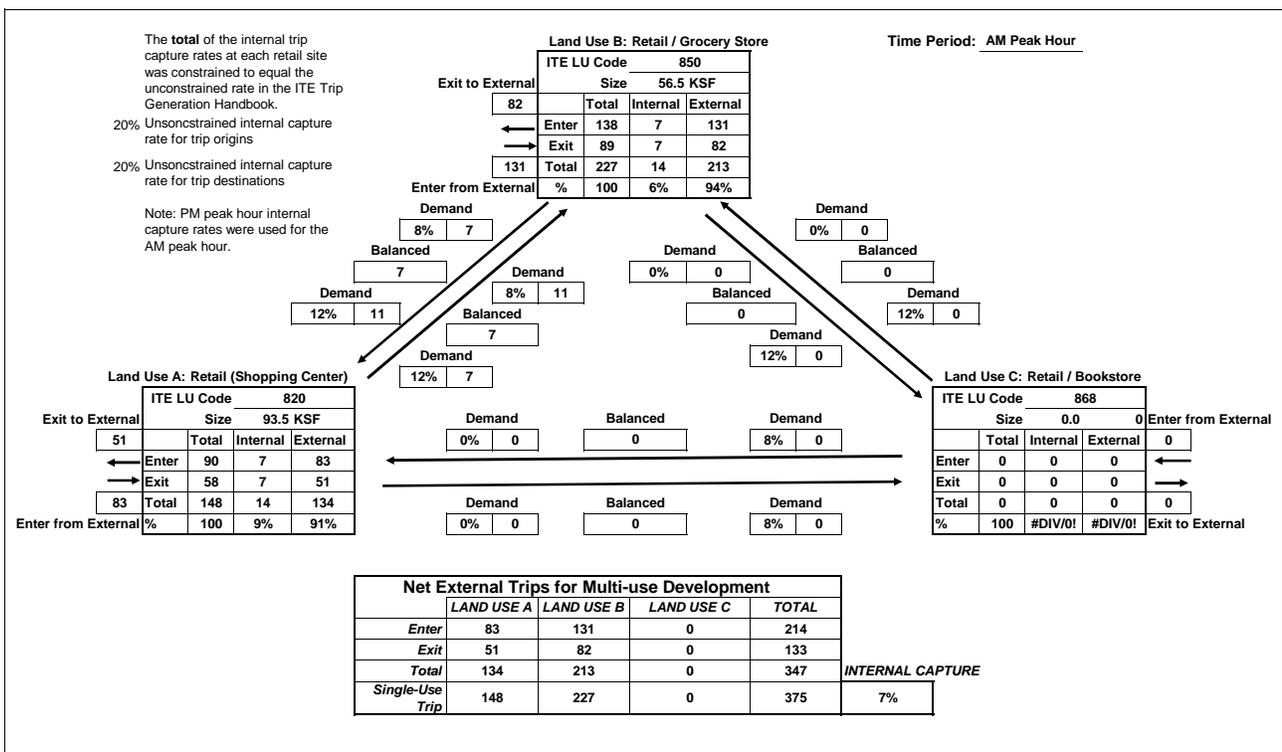


Analyst: Dowling

Date: 6/2/2008

**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Alternative 3: Reduced Commercial Alternative A**

Name of Development: Curtis Park

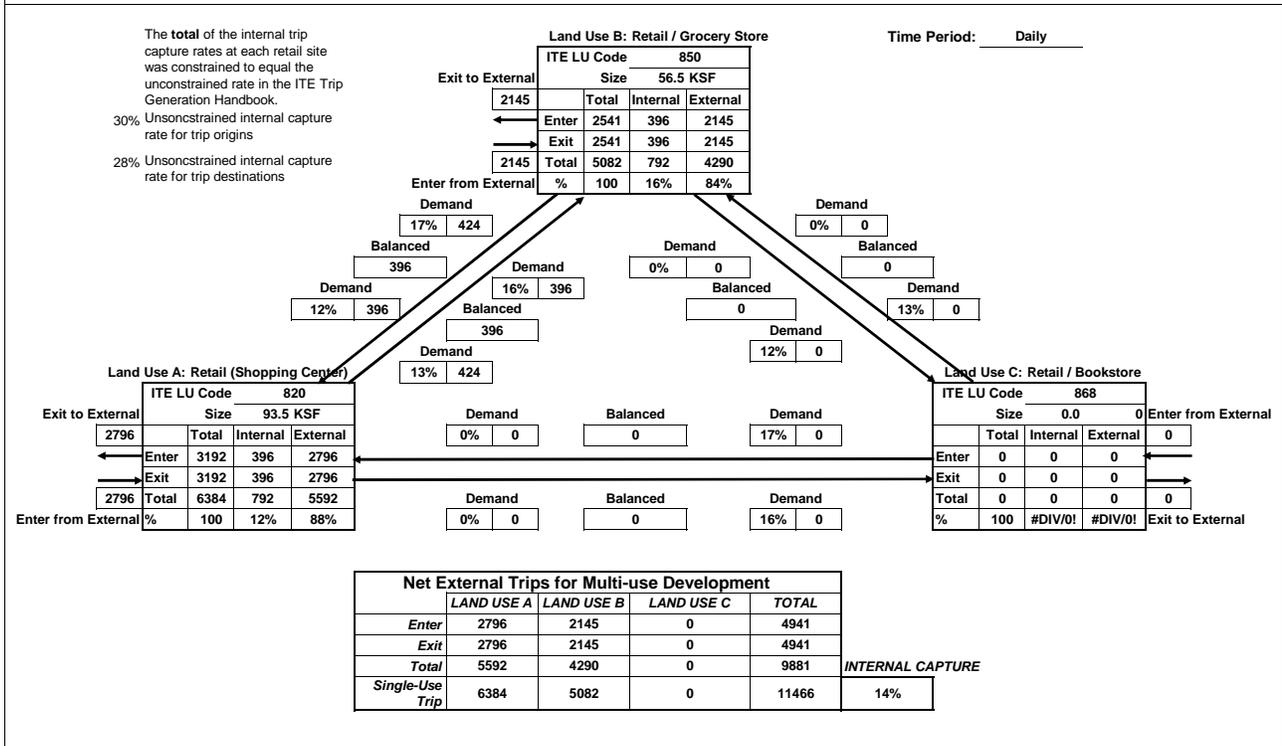
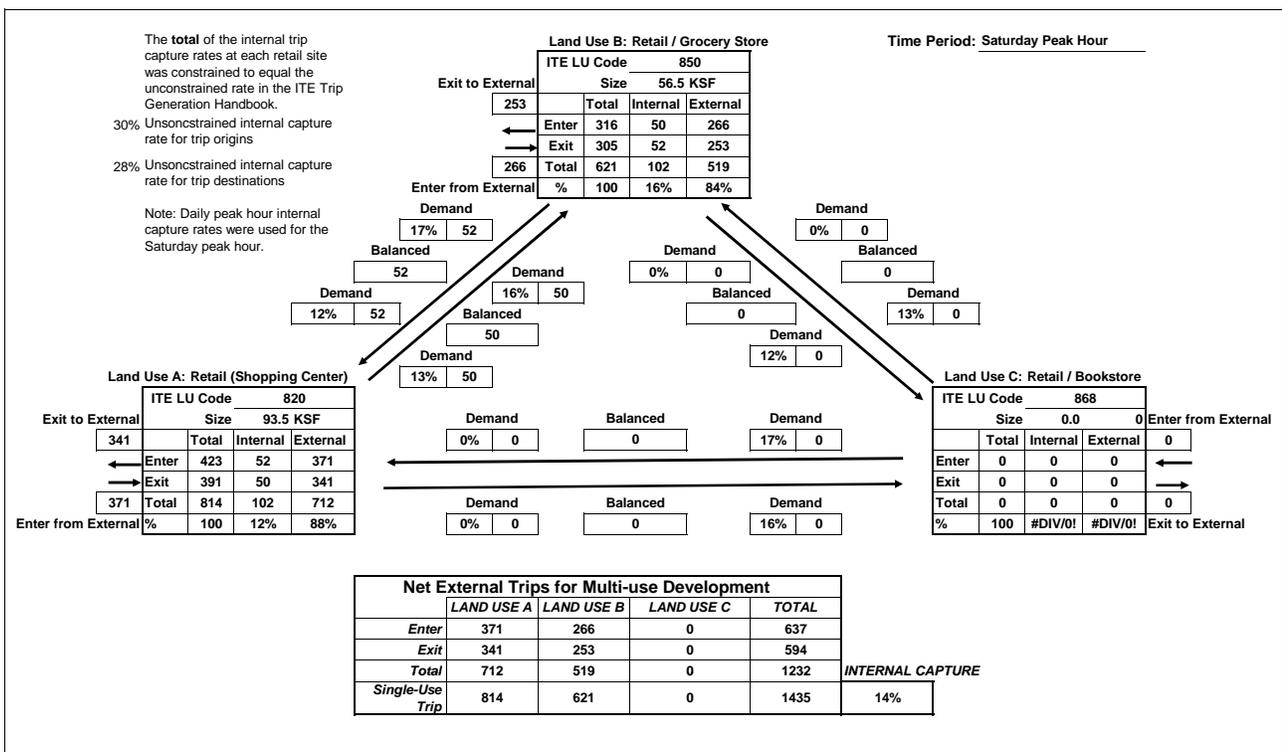


Analyst: Dowling

Date: 6/2/2008

**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Alternative 3: Reduced Commercial Alternative A**

Name of Development: Curtis Park

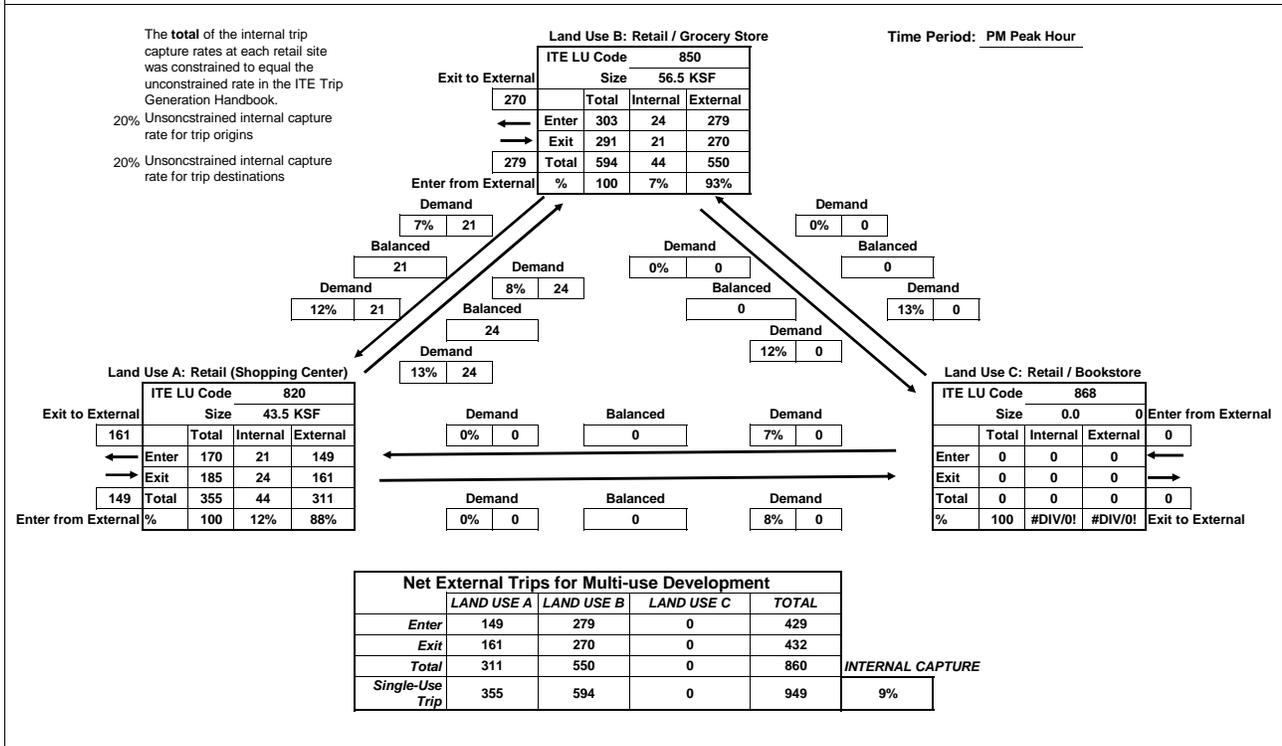
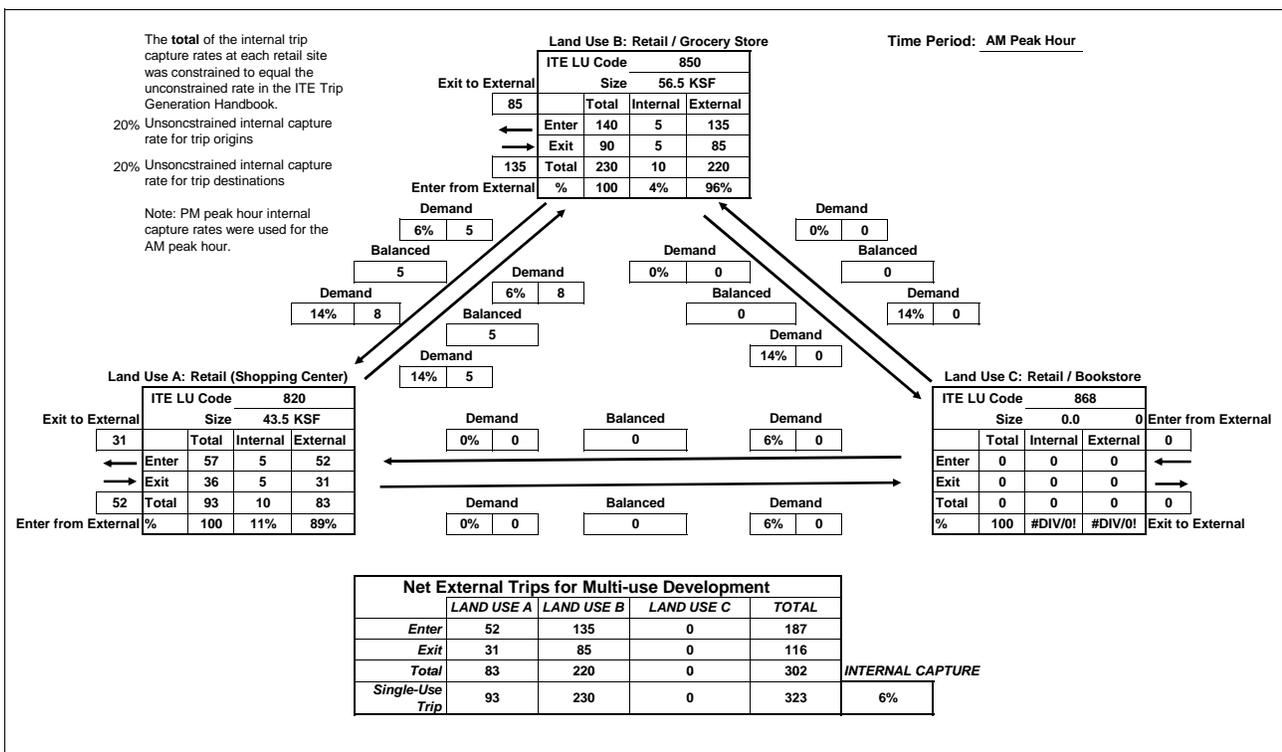


Analyst: Dowling

Date: 6/2/2008

**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Alternative 4: Reduced Commercial Alternative B**

Name of Development: Curtis Park

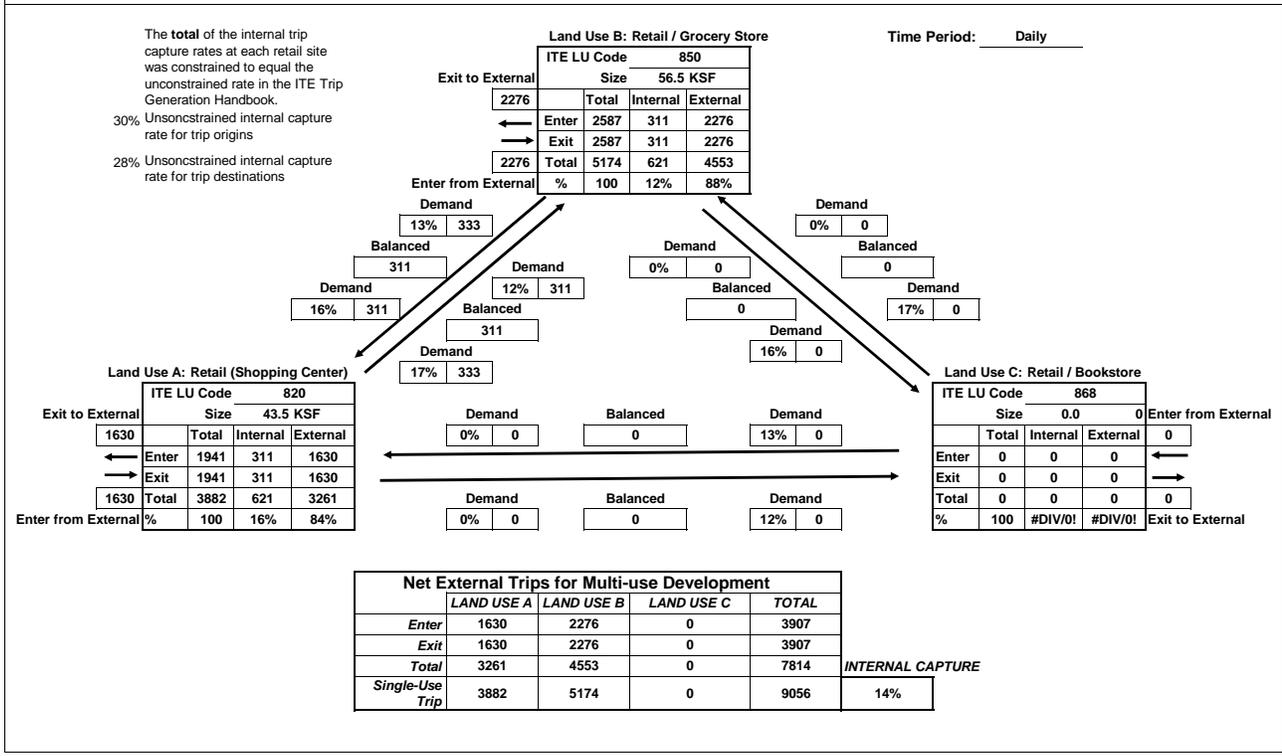
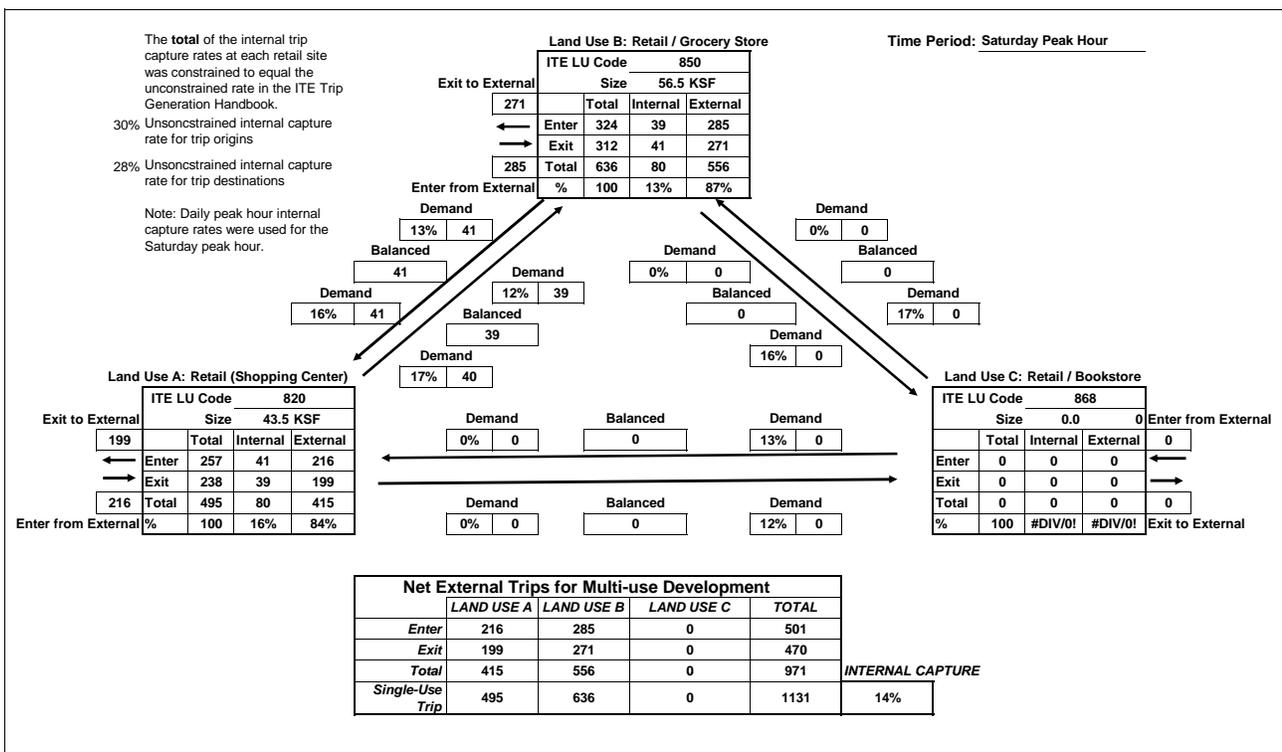


Analyst: Dowling

Date: 6/2/2008

**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Alternative 4: Reduced Commercial Alternative B**

Name of Development: Curtis Park

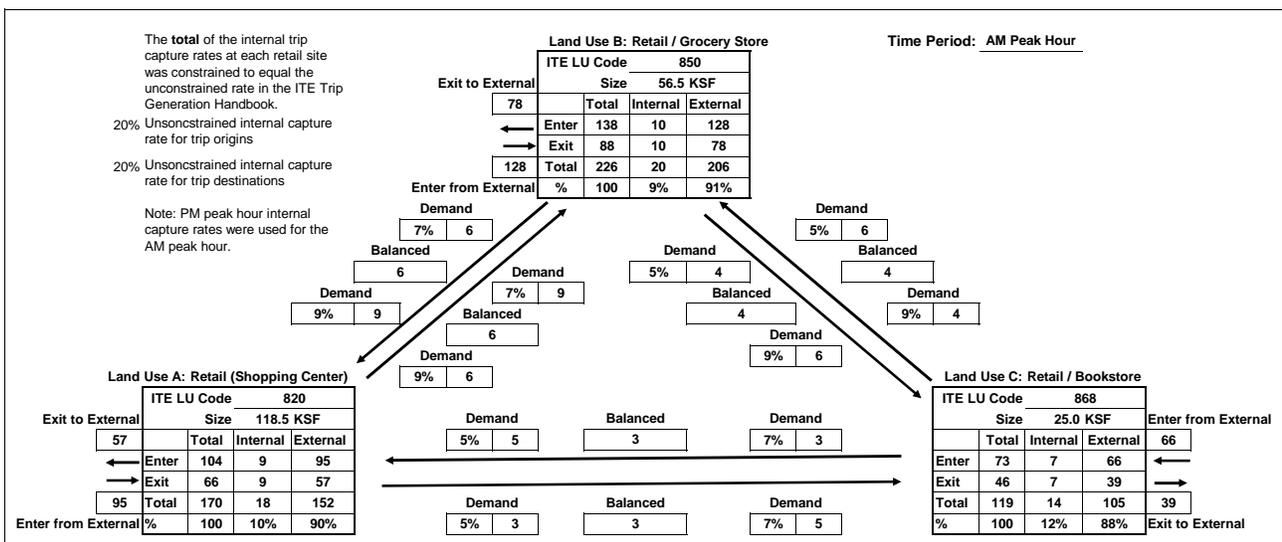


Analyst: Dowling

Date: 6/2/2008

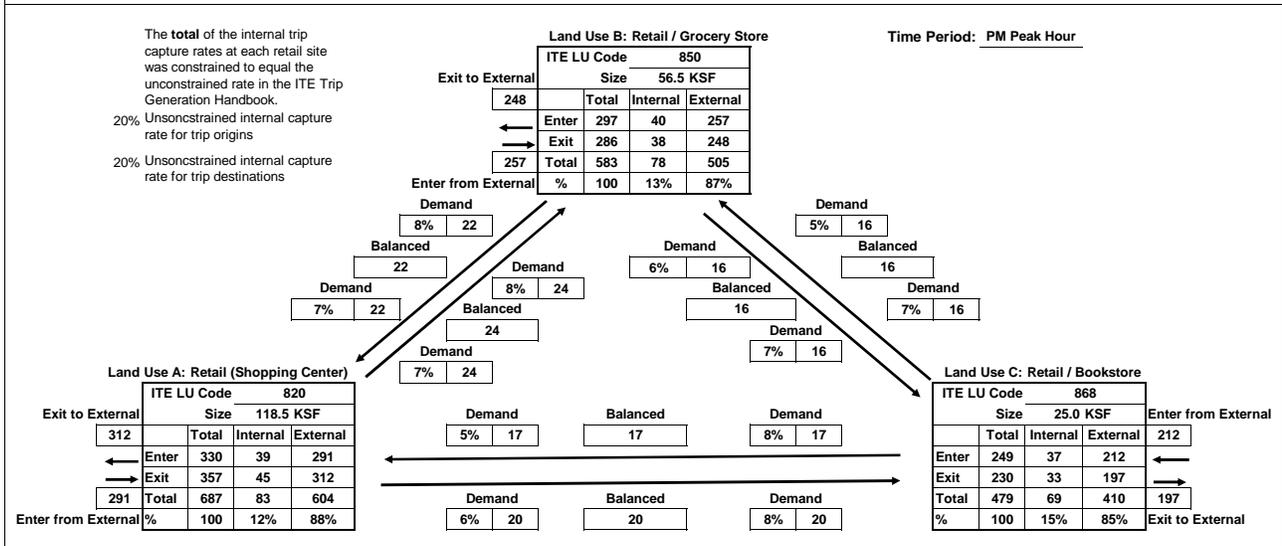
**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Alternative 7: Multi-Family Alternative C**

Name of Development: Curtis Park



Net External Trips for Multi-use Development

	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	95	128	66	289	
Exit	57	78	39	174	
Total	152	206	105	463	INTERNAL CAPTURE
Single-Use Trip	170	226	119	515	10%



Net External Trips for Multi-use Development

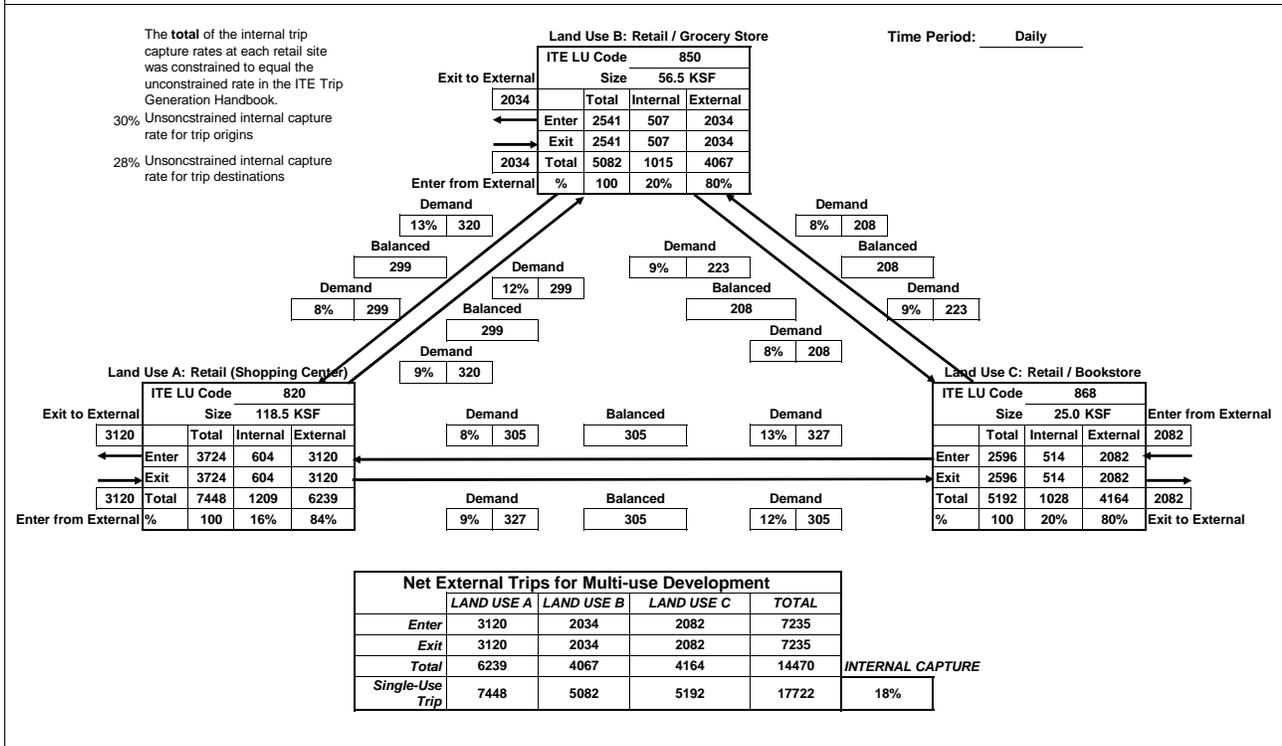
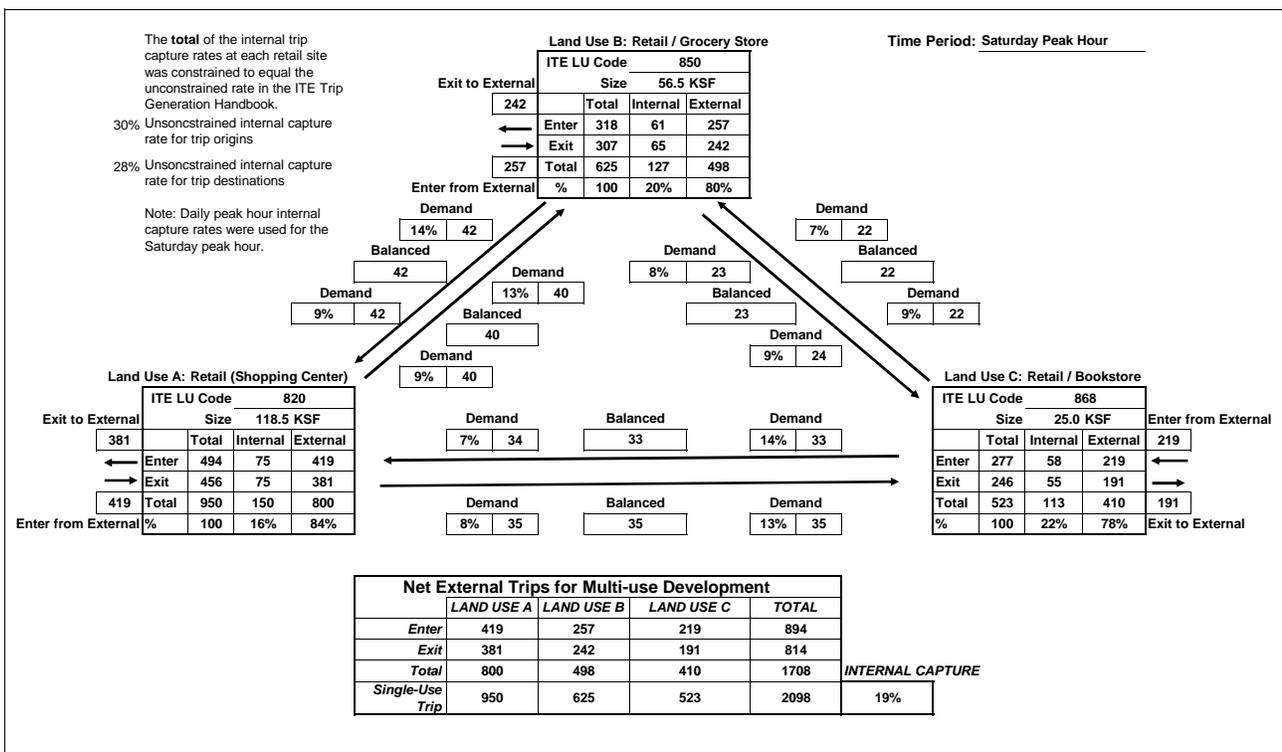
	LAND USE A	LAND USE B	LAND USE C	TOTAL	
Enter	291	257	212	761	
Exit	312	248	197	758	
Total	604	505	410	1519	INTERNAL CAPTURE
Single-Use Trip	687	583	479	1749	13%

Analyst: Dowling

Date: 6/2/2008

**MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Alternative 7: Multi-Family Alternative C**

Name of Development: Curtis Park



Adjustments for Internal Project Intersections
Alternative 2: Proposed Project

Total Trips	AM Peak Hour			PM Peak Hour			Saturday		
	In	Out	Total	In	Out	Total	In	Out	Total
	496	466	961	1,344	1,191	2,535	1,537	1,347	2,882

Passby %	AM Peak Hour			PM Peak Hour			Saturday		
Project Area	6%			6%			4%		
External	94%			94%			96%		

Note: Project area passby trips are assumed to be the same percent as internal trips between residential and retail land uses.

Passby Trips	AM Peak Hour			PM Peak Hour			Saturday		
	In	Out	Total	In	Out	Total	In	Out	Total
Total	53	53	106	184	184	368	217	217	434
Project Area	3	3	6	11	11	22	9	9	18
External	50	50	100	173	173	346	208	208	416

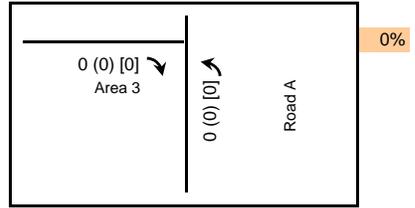
Internal and Project Area Passby Trips

	AM Peak Hour			PM Peak Hour			Saturday		
	In	Out	Total	In	Out	Total	In	Out	Total
Internal Trips ¹	43	43	86	153	200	353	119	119	238
Local Passby	3	3	6	11	11	22	9	9	18
Internal ¹ + Passby	46	46	92	164	211	375	128	128	256
% of Total Trips	10%			15%			9%		

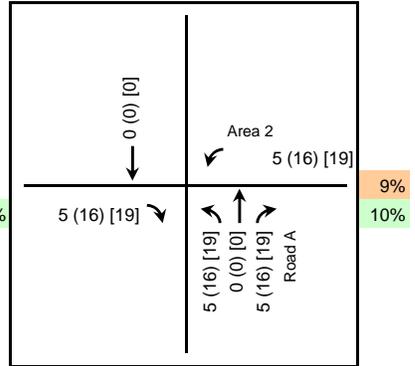
¹ Internal trips between residential and retail uses, only - does not include retail to retail
 Highlighted values are user adjustment increases in TRAFFIX for all internal intersections.

External Bypass Trips

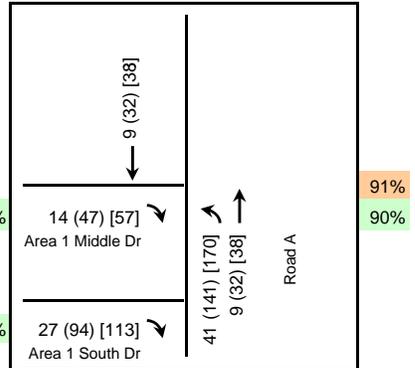
Road A & Area 3



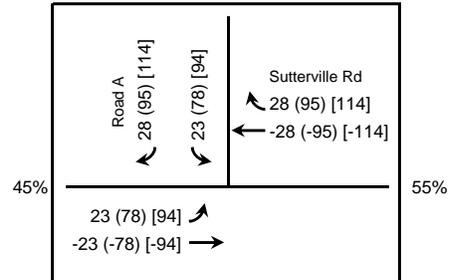
Road A & Area 2



Road A & Area 1



Sutterville Rd & Road A



Legend

- 23 = AM peak hour traffic volume
- (78) = PM peak hour traffic volume
- [94] = Saturday peak hour traffic volume

Adjustments for Internal Project Intersections
Alternative 3: Reduced Commercial Alternative A

Total Trips	AM Peak Hour			PM Peak Hour			Saturday		
	In	Out	Total	In	Out	Total	In	Out	Total
	307	413	718	860	748	1,608	960	884	1,844

Passby %	AM Peak Hour			PM Peak Hour			Saturday		
Project Area	6%			11%			10%		
External	94%			89%			90%		

Note: Project area passby trips are assumed to be the same percent as internal trips between residential and retail land uses.

Passby Trips	AM Peak Hour			PM Peak Hour			Saturday		
	In	Out	Total	In	Out	Total	In	Out	Total
Total	53	53	106	141	141	282	166	166	332
Project Area	3	3	6	15	15	30	16	16	32
External	50	50	100	126	126	252	150	150	300

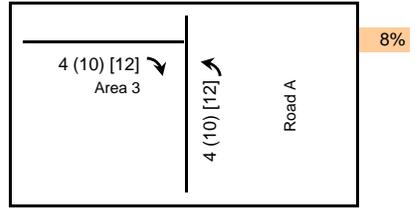
Internal and Project Area Passby Trips

	AM Peak Hour			PM Peak Hour			Saturday		
	In	Out	Total	In	Out	Total	In	Out	Total
Internal Trips ¹	22	22	44	123	123	246	139	139	278
Local Passby	3	3	6	15	15	30	16	16	32
Internal ¹ + Passby	25	25	50	138	138	276	155	155	310
% of Total Trips	7%			17%			17%		

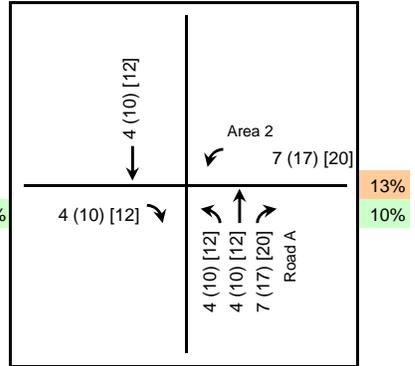
¹ Internal trips between residential and retail uses, only - does not include retail to retail
 Highlighted values are user adjustment increases in TRAFFIX for all internal intersections.

External Bypass Trips

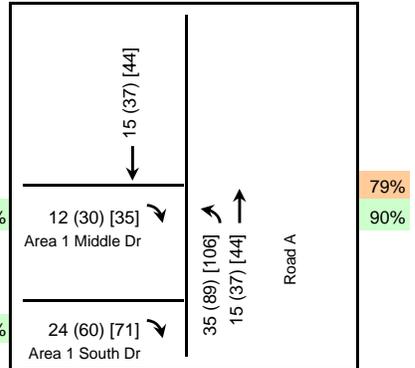
Road A & Area 3



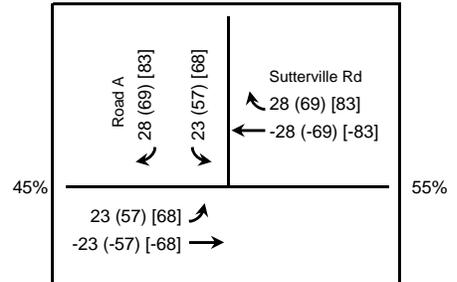
Road A & Area 2



Road A & Area 1



Sutterville Rd & Road A



Legend

- 23 = AM peak hour traffic volume
- (57) = PM peak hour traffic volume
- [68] = Saturday peak hour traffic volume

Adjustments for Internal Project Intersections
Alternative 4: Reduced Commercial Alternative B

Total Trips	AM Peak Hour			PM Peak Hour			Saturday		
	In	Out	Total	In	Out	Total	In	Out	Total
	282	411	693	772	646	1,418	819	754	1,573

Passby %	AM Peak Hour			PM Peak Hour			Saturday		
Project Area	6%			11%			10%		
External	94%			89%			90%		

Note: Project area passby trips are assumed to be the same percent as internal trips between residential and retail land uses.

Passby Trips	AM Peak Hour			PM Peak Hour			Saturday		
	In	Out	Total	In	Out	Total	In	Out	Total
Total	52	52	104	129	129	258	146	146	292
Project Area	3	3	6	14	14	28	15	15	30
External	49	49	98	115	115	230	131	131	262

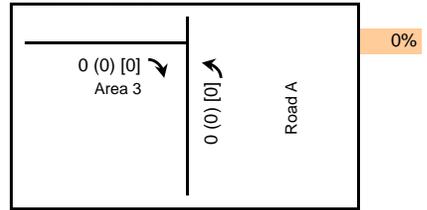
Internal and Project Area Passby Trips

	AM Peak Hour			PM Peak Hour			Saturday		
	In	Out	Total	In	Out	Total	In	Out	Total
Internal Trips ¹	19	19	38	100	100	200	113	113	226
Local Passby	3	3	6	14	14	28	15	15	30
Internal ¹ + Passby	22	22	44	114	114	228	128	128	256
% of Total Trips	6%			16%			16%		

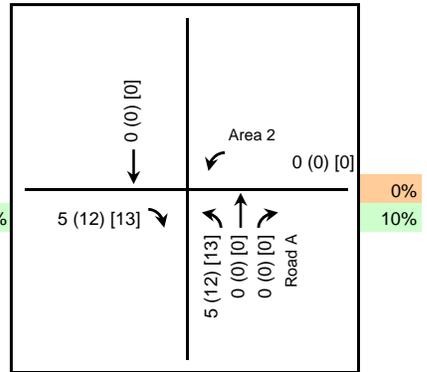
¹ Internal trips between residential and retail uses, only - does not include retail to retail
 Highlighted values are user adjustment increases in TRAFFIX for all internal intersections.

External Bypass Trips

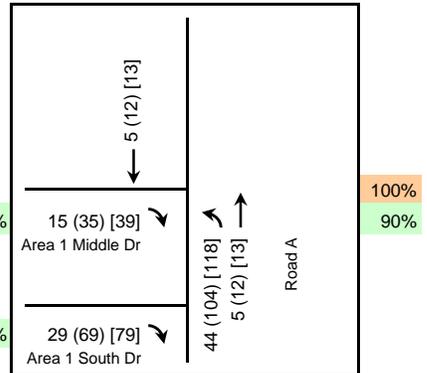
Road A & Area 3



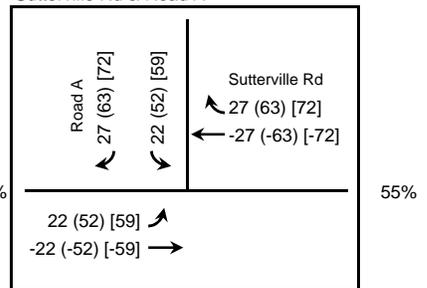
Road A & Area 2



Road A & Area 1



Sutterville Rd & Road A



Legend

- 22 = AM peak hour traffic volume
- (52) = PM peak hour traffic volume
- [59] = Saturday peak hour traffic volume

Adjustments for Internal Project Intersections
Alternative 7: Multi-Family Alternative C

Total Trips	AM Peak Hour			PM Peak Hour			Saturday		
	In	Out	Total	In	Out	Total	In	Out	Total
	390	455	845	1,144	1,025	2,169	1,300	1,189	2,490

Passby %	AM Peak Hour			PM Peak Hour			Saturday		
Project Area	6%			9%			7%		
External	94%			91%			93%		

Note: Project area passby trips are assumed to be the same percent as internal trips between residential and retail land uses.

Passby Trips	AM Peak Hour			PM Peak Hour			Saturday		
	In	Out	Total	In	Out	Total	In	Out	Total
Total	65	65	130	191	191	382	229	229	458
Project Area	4	4	8	18	18	36	15	15	30
External	61	61	122	173	173	346	214	214	428

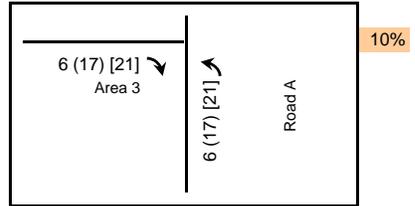
Internal and Project Area Passby Trips

	AM Peak Hour			PM Peak Hour			Saturday		
	In	Out	Total	In	Out	Total	In	Out	Total
Internal Trips ¹	30	30	60	162	162	324	137	137	274
Local Passby	4	4	8	18	18	36	15	15	30
Internal ¹ + Passby	34	34	68	180	180	360	152	152	304
% of Total Trips	8%			17%			12%		

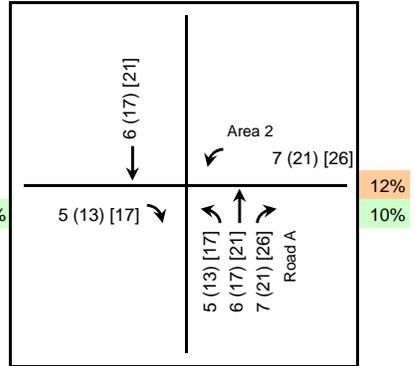
¹ Internal trips between residential and retail uses, only - does not include retail to retail
 Highlighted values are user adjustment increases in TRAFFIX for all internal intersections.

External Bypass Trips

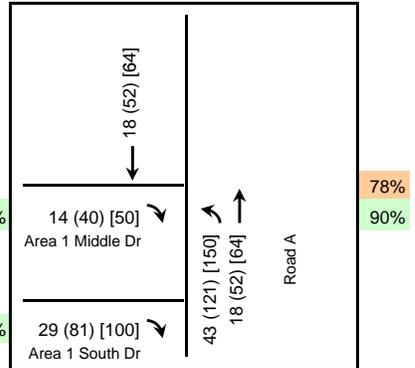
Road A & Area 3



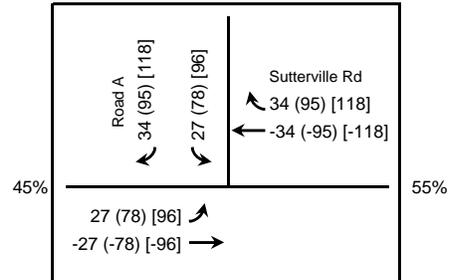
Road A & Area 2



Road A & Area 1



Sutterville Rd & Road A



Legend

- 27 = AM peak hour traffic volume
- (78) = PM peak hour traffic volume
- [96] = Saturday peak hour traffic volume

Curtis Park Village
Trip Generation for Traffic Analysis Zones

Land Use Area	Retail (ksf)	Multi-Family Units	Single Family Units	Restau- rant (ksf)	Theater (Seats)	Hotel (rooms)	Health Spa (ksf)	Parks (Acres)	Number of Trips (Adjusted)										
									AM Peak Hour			PM Peak Hour			Saturday				
									In	Out	Total	In	Out	Total	In	Out	Total		
Alternative 2: Proposed Project																			
Retail	Total									195	96	291	503	484	987	611	517	1,128	
Restaurant			Total							64	54	118	50	34	85	94	48	142	
Theater				Total						9	7	16	90	44	134	117	81	199	
Hotel					Total					30	23	53	28	15	42	21	23	43	
Health Spa						Total				40	55	95	156	146	302	99	97	196	
SFU		Total								28	100	128	74	25	99	62	49	111	
Parks								Total		0	0	0	0	0	0	1	1	2	
TAZ 1			73							9	34	43	25	8	34	21	16	37	
TAZ 2			34					7.2		4	16	20	12	4	16	11	9	19	
TAZ 3						150				30	23	53	28	15	42	21	23	43	
TAZ 4			39							5	18	23	13	4	18	11	9	20	
TAZ 5			10							1	5	6	3	1	5	3	2	5	
TAZ 6			54							7	25	32	19	6	25	16	12	28	
TAZ 9			6							1	3	4	2	1	3	2	1	3	
TAZ 31				13.0	560		85.0			112	116	228	297	224	521	310	226	536	
TAZ 71	15.8									18	9	27	47	45	91	57	48	105	
TAZ 81	154.8									177	87	264	456	439	896	555	469	1,023	
Total	170.6		216	13.0	560	150	85.0	7.2		365	335	700	901	748	1,649	1,005	815	1,820	
Alternative 3: Reduced Commercial Alternative A																			
Retail	Total									149	69	219	330	320	650	405	356	760	
MFU		Total								27	117	144	89	43	133	59	49	108	
SFU			Total							42	137	179	119	63	181	88	72	160	
Parks								Total		0	0	0	0	0	0	1	1	2	
TAZ 1			112							17	57	74	49	26	75	37	30	66	
TAZ 2			40					7.2		6	20	27	18	9	27	14	12	26	
TAZ 3		263								22	98	120	74	36	110	49	41	90	
TAZ 4			44							7	22	29	19	10	30	14	12	26	
TAZ 5			17							3	9	11	7	4	11	6	5	10	
TAZ 6			48							7	24	32	21	11	32	16	13	28	
TAZ 7		31								3	11	14	9	4	13	6	5	11	
TAZ 8		22								2	8	10	6	3	9	4	3	8	
TAZ 9			9							1	5	6	4	2	6	3	2	5	
TAZ 31	12.2									12	6	18	27	26	53	33	29	62	
TAZ 71	19.675									20	9	29	43	42	85	53	47	100	
TAZ 81	118.125									118	55	172	260	252	512	319	280	599	
Total	150	316	270					7.2		218	324	542	538	426	964	553	477	1,030	
Alternative 4: Reduced Commercial Alternative B																			
Retail	Total									125	55	180	257	246	503	303	263	566	
MFU		Total								28	118	146	97	49	145	66	56	122	
SFU			Total							48	157	206	145	79	224	111	94	205	
Parks								Total		0	0	0	0	0	0	1	1	2	
TAZ 1			112							18	57	75	53	29	81	40	34	75	
TAZ 2			55					7.2		9	28	37	26	14	40	21	18	39	
TAZ 3		263								23	98	121	81	40	121	55	47	101	
TAZ 4			60							9	31	40	28	15	44	22	18	40	
TAZ 5			24							4	12	16	11	6	17	9	7	16	
TAZ 6			48							8	24	32	23	12	35	17	15	32	
TAZ 7		31								3	12	14	9	5	14	6	6	12	
TAZ 8		22								2	8	10	7	3	10	5	4	8	
TAZ 9			9							1	5	6	4	2	7	3	3	6	
TAZ 31										0	0	0	0	0	0	0	0	0	
TAZ 71										0	0	0	0	0	0	0	0	0	
TAZ 81	100									125	55	180	257	246	503	303	263	566	
Total	100	316	308					7.2		201	330	531	499	373	872	480	415	895	
Alternative 7: Multi-Family Alternative C																			
Retail	Total									208	95	303	491	484	975	597	516	1,113	
MFU		Total								25	115	140	82	31	114	59	47	106	
SFU			Total							36	125	161	102	42	145	82	64	146	
Parks								Total		0	0	0	0	0	0	1	1	2	
TAZ 1			112							16	56	72	46	19	65	37	29	65	
TAZ 2			32					7.2		5	16	21	13	5	19	11	9	21	
TAZ 3		263								21	95	116	69	26	94	49	39	88	
TAZ 4			35							5	17	22	14	6	20	11	9	20	
TAZ 5			14							2	7	9	6	2	8	5	4	8	
TAZ 6			48							7	24	31	20	8	28	16	12	28	
TAZ 7		31								2	11	14	8	3	11	6	5	10	
TAZ 8		22								2	8	10	6	2	8	4	3	7	
TAZ 9			9							1	4	6	4	2	5	3	2	5	
TAZ 31	20									21	9	30	49	48	97	60	52	111	
TAZ 71	24									25	11	36	59	58	117	72	62	134	
TAZ 81	156									162	74	236	383	377	760	466	402	868	
Total	200	316	250					7.2		269	334	603	676	557	1,233	739	638	1,367	

Curtis Park Village

RT99 SB Off To 12th Ave

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Ramp Analysis Type: 10-lane freeway, Single Lane Off-Ramp (Equation 8)

Existing Upstrm Frwy Lanes / Aux. Lanes 5
Existing Dnstrm Frwy Lanes / Aux. Lanes 5

	Existing		
	AM	PM	Sat
Freeway Volume (Upstream):	5,014	6,929	6440
Ramp Volume:	1,034	1,260	1116
Deceleration Length (ft):	700	700	700
Adjusted Freeway Volume (Upstream):	5,600	7,739	7,193
Adjusted Ramp Volume:	1,155	1,407	1,246
Upstream Freeway Capacity:	12,000	12,000	12,000
Upstream Freeway V/C:	0.47	0.64	0.60
Proportion in lanes 1,2 (Pfd):	0.436	0.436	0.436
V12 (upstream two-lane volume):	3,093	4,168	3,839
V12 Capacity:	4,400	4,400	4,400
V12 V/C:	0.70	0.95	0.87
Density (pc/mi/ln):	24.55	33.79	30.97
Level of Service:	C	D	D

Eq 8, Pg25-12

pg 25-14, (25-10), diverge LOS

Free-Flow Speed = 70 mph
Peak Hour Factor = 0.92
Percent Trucks = 5.5%
Actual Capacity / Ideal Capacity = 90%
Freeway Mainline Capacity = 2400
Truck Equivalent Factor = 1.5

Curtis Park Village

RT99 SB On-ramp From 12th Ave

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Ramp Analysis Type: 10 lane freeway, Single Lane On-Ramp (Equation 4)

Existing Upstrm Frwy Lanes / Aux. Lanes 5

Existing Dnstrm Frwy Lanes / Aux. Lanes 5

	Existing		
	AM	PM	Sat
Freeway Volume (Upstream):	3,795	5,403	5062
Ramp Volume:	201	238	395
Acceleration Length (ft.):	1,000	1,000	1,000
Adjusted Freeway Volume (Upstream):	4,238	6,035	5,654
Adjusted Ramp Volume:	224	266	441
Downstream Freeway Capacity:	12,000	12,000	12,000
Downstream Freeway V/C:	0.37	0.53	0.51
Proportion in lanes 1,2 (Pfm):	0.469	0.463	0.441
V12 (upstream two-lane volume):	1,986	2,796	2,496
VR12 (downstream two-lane volume):	2,210	3,062	2,937
VR12 Capacity:	4,600	4,600	4,600
VR12 V/C:	0.48	0.67	0.64
Density (pc/mi/ln):	16.34	22.97	21.91
Level of Service:	B	C	C

Free-Flow Speed = 70 mph

Peak Hour Factor = 0.92

Percent Trucks = 5.5%

Actual Capacity / Ideal Capacity = 90%

Free-flow speed of ramp (mi/h) = 40

Freeway Mainline Capacity = 2400

Truck Equivalent Factor = 1.5

Exhibit 25-7

(HCM pg 23-9) Terrain: Level = 1.5, Rolling = 2.5, Mountainous = 4.5

Curtis Park Village

RT99 NB Off To 12th Avenue

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Ramp Analysis Type: 10 lane freeway, Single Lane Off-Ramp (Equation 8)

Existing Upstrm Frwy Lanes / Aux. Lanes 5
Existing Dnstrm Frwy Lanes / Aux. Lanes 5

	Existing		
	AM	PM	Sat
Freeway Volume (Upstream):	6,576	5,790	6127
Ramp Volume:	378	450	390
Deceleration Length (ft):	700	700	700
Adjusted Freeway Volume (Upstream):	7,344	6,466	6,843
Adjusted Ramp Volume:	422	503	436
Upstream Freeway Capacity:	12,000	12,000	12,000
Upstream Freeway V/C:	0.61	0.54	0.57
Proportion in lanes 1,2 (Pfd):	0.436	0.436	0.436
V12 (upstream two-lane volume):	3,440	3,103	3,229
V12 Capacity:	4,400	4,400	4,400
V12 V/C:	0.78	0.71	0.73
Density (pc/mi/ln):	27.54	24.64	25.73
Level of Service:	C	C	C

Free-Flow Speed = 70 mph
Peak Hour Factor = 0.92
Percent Trucks = 5.5%
Actual Capacity / Ideal Capacity = 90%
Freeway Mainline Capacity = 2400
Truck Equivalent Factor = 1.5

Exhibit 25-14
(HCM pg 23-9) Terrain: Level = 1.5, Rolling = 2.5, Mountainous = 4.5

Curtis Park Village

RT99 NB On-ramp From 12th Ave

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Ramp Analysis Type: 10-lane freeway, Single Lane On-Ramp (Equation 4)

Existing Upstrm Frwy Lanes / Aux. Lanes 5

Existing Dnstrm Frwy Lanes / Aux. Lanes 5

	Existing		
	AM	PM	Sat
Freeway Volume (Upstream):	5,607	4,835	5307
Ramp Volume:	934	852	942
Acceleration Length (ft.):	1,000	1,000	1,000
Adjusted Freeway Volume (Upstream):	6,262	5,400	5,927
Adjusted Ramp Volume:	1,043	952	1,052
Downstream Freeway Capacity:	12,000	12,000	12,000
Downstream Freeway V/C:	0.61	0.53	0.58
Proportion in lanes 1,2 (Pfm):	0.366	0.378	0.365
V12 (upstream two-lane volume):	2,293	2,039	2,164
VR12 (downstream two-lane volume):	3,336	2,991	3,216
VR12 Capacity:	4,600	4,600	4,600
VR12 V/C:	0.73	0.65	0.70
Density (pc/mi/ln):	24.75	22.10	23.81
Level of Service:	C	C	C

Free-Flow Speed = 70 mph

Peak Hour Factor = 0.92

Percent Trucks = 5.5%

Actual Capacity / Ideal Capacity = 90%

Free-flow speed of ramp (mi/h) = 40

Freeway Mainline Capacity = 2400

Truck Equivalent Factor = 1.5

Exhibit 25-7

(HCM pg 23-9) Terrain: Level = 1.5, Rolling = 2.5, Mountainous = 4.5

Curtis Park Village

RT99 SB Off To 12th Ave

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Ramp Analysis Type: 10-lane freeway, Single Lane Off-Ramp (Equation 8)

Existing Upstrm Frwy Lanes / Aux. Lanes 5

Existing Dnstrm Frwy Lanes / Aux. Lanes 5

	No Project			Proposed Project			Project Alternative A			Project Alternative B			Project Alternative C		
	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat
Freeway Volume (Upstream):	5,014	6,929	6440	5,070	7,058	6583	5,049	7,010	6522	5,047	7,006	6513	5056	7029	6547
Ramp Volume:	1,034	1,260	1,116	1,100	1,421	1,295	1,075	1,361	1,218	1,072	1,356	1,207	1,083	1,385	1,250
Deceleration Length (ft):	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
Adjusted Freeway Volume (Upstream):	5,600	7,739	7,193	5,663	7,883	7,353	5,639	7,829	7,284	5,636	7,825	7,274	5,647	7,851	7,313
Adjusted Ramp Volume:	1,155	1,407	1,246	1,229	1,587	1,446	1,201	1,520	1,360	1,197	1,514	1,348	1,210	1,547	1,396
Upstream Freeway Capacity:	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Upstream Freeway V/C:	0.47	0.64	0.60	0.47	0.66	0.61	0.47	0.65	0.61	0.47	0.65	0.61	0.47	0.65	0.61
Proportion in lanes 1,2 (Pfd):	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436
V12 (upstream two-lane volume):	3,093	4,168	3,839	3,162	4,332	4,021	3,136	4,271	3,943	3,132	4,266	3,932	3,145	4,296	3,976
V12 Capacity:	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400
V12 V/C:	0.70	0.95	0.87	0.72	0.98	0.91	0.71	0.97	0.90	0.71	0.97	0.89	0.71	0.98	0.90
Density (pc/mi/ln):	24.55	33.79	30.97	25.15	35.21	32.54	24.92	34.68	31.86	24.89	34.64	31.76	24.99	34.89	32.14
Level of Service:	C	D	D	C	E	D	C	D	D	C	D	D	C	D	D

Free-Flow Speed = 70 mph

Peak Hour Factor = 0.92

Percent Trucks = 5.5%

Actual Capacity / Ideal Capacity = 90%

Freeway Mainline Capacity = 2400

Truck Equivalent Factor = 1.5

Exhibit 25-14

(HCM pg 23-9) Terrain: Level = 1.5, Rolling = 2.5, Mountainous = 4.5

Curtis Park Village

RT99 SB On-ramp From 12th Ave

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Ramp Analysis Type: 10 lane freeway, Single Lane On-Ramp (Equation 4)

Existing Upstrm Frwy Lanes / Aux. Lanes 5

Existing Dnstrm Frwy Lanes / Aux. Lanes 5

	No Project			Proposed Project			Project Alternative A			Project Alternative B			Project Alternative C		
	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat
Freeway Volume (Upstream):	3,795	5,403	5062	3,795	5,403	5062	3,795	5,403	5062	3,795	5,403	5062	3,795	5,403	5062
Ramp Volume:	201	238	395	255	366	533	248	308	473	248	298	461	250	331	500
Acceleration Length (ft.):	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Adjusted Freeway Volume (Upstream):	4,238	6,035	5,654	4,238	6,035	5,654	4,238	6,035	5,654	4,238	6,035	5,654	4,238	6,035	5,654
Adjusted Ramp Volume:	224	266	441	285	409	595	277	344	528	277	333	515	279	370	558
Downstream Freeway Capacity:	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Downstream Freeway V/C:	0.37	0.53	0.51	0.38	0.54	0.52	0.38	0.53	0.52	0.38	0.53	0.51	0.38	0.53	0.52
Proportion in lanes 1,2 (Pfm):	0.469	0.463	0.441	0.461	0.445	0.422	0.462	0.454	0.431	0.462	0.455	0.432	0.462	0.450	0.427
V12 (upstream two-lane volume):	1,986	2,796	2,496	1,953	2,688	2,387	1,958	2,737	2,434	1,958	2,745	2,444	1,957	2,718	2,413
VR12 (downstream two-lane volume):	2,210	3,062	2,937	2,238	3,097	2,982	2,235	3,081	2,962	2,235	3,078	2,959	2,236	3,088	2,971
VR12 Capacity:	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600
VR12 V/C:	0.48	0.67	0.64	0.49	0.67	0.65	0.49	0.67	0.64	0.49	0.67	0.64	0.49	0.67	0.65
Density (pc/mi/ln):	16.34	22.97	21.91	16.53	23.17	22.19	16.51	23.08	22.07	16.51	23.06	22.05	16.52	23.12	22.12
Level of Service:	B	C	C	B	C	C	B	C	C	B	C	C	B	C	C

Free-Flow Speed = 70 mph

Peak Hour Factor = 0.92

Percent Trucks = 5.5%

Actual Capacity / Ideal Capacity = 90%

Free-flow speed of ramp (mi/h) = 40

Freeway Mainline Capacity = 2400

Truck Equivalent Factor = 1.5

Exhibit 25-7

(HCM pg 23-9) Terrain: Level = 1.5, Rolling = 2.5, Mountainous = 4.5

Curtis Park Village

RT99 NB Off To 12th Avenue

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Ramp Analysis Type: 10 lane freeway, Single Lane Off-Ramp (Equation 8)

Existing Upstrm Frwy Lanes / Aux. Lanes 5

Existing Dnstrm Frwy Lanes / Aux. Lanes 5

	No Project			Proposed Project			Project Alternative A			Project Alternative B			Project Alternative C		
	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat
Freeway Volume (Upstream):	6,576	5,790	6127	6,624	5,919	6264	6,604	5,862	6199	6,601	5,855	6189	6,611	5,883	6226
Ramp Volume:	378	450	390	439	602	561	413	535	480	410	527	467	422	560	513
Deceleration Length (ft):	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
Adjusted Freeway Volume (Upstream):	7,344	6,466	6,843	7,398	6,611	6,996	7,375	6,547	6,924	7,372	6,540	6,912	7,383	6,571	6,953
Adjusted Ramp Volume:	422	503	436	490	672	627	461	598	536	458	589	522	471	625	573
Upstream Freeway Capacity:	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Upstream Freeway V/C:	0.61	0.54	0.57	0.62	0.55	0.58	0.61	0.55	0.58	0.61	0.55	0.58	0.62	0.55	0.58
Proportion in lanes 1,2 (Pfd):	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436
V12 (upstream two-lane volume):	3,440	3,103	3,229	3,502	3,261	3,404	3,476	3,192	3,321	3,473	3,184	3,308	3,485	3,217	3,355
V12 Capacity:	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400
V12 V/C:	0.78	0.71	0.73	0.80	0.74	0.77	0.79	0.73	0.75	0.79	0.72	0.75	0.79	0.73	0.76
Density (pc/mi/ln):	27.54	24.64	25.73	28.07	26.00	27.23	27.84	25.40	26.51	27.82	25.33	26.40	27.92	25.62	26.80
Level of Service:	C	C	C	D	C	C	C	C	C	C	C	C	C	C	C

Free-Flow Speed = 70 mph

Peak Hour Factor = 0.92

Percent Trucks = 5.5%

Actual Capacity / Ideal Capacity = 90%

Freeway Mainline Capacity = 2400

Truck Equivalent Factor = 1.5

Exhibit 25-14

(HCM pg 23-9) Terrain: Level = 1.5, Rolling = 2.5, Mountainous = 4.5

Curtis Park Village

RT99 NB On-ramp From 12th Ave

Highway Capacity Manual
2000 Edition
Capacity Analysis of Freeway Ramps

Ramp Analysis Type: 10-lane freeway, Single Lane On-Ramp (Equation 4)

Existing Upstrm Frwy Lanes / Aux. Lanes 5

Existing Dnstrm Frwy Lanes / Aux. Lanes 5

	No Project			Proposed Project			Project Alternative A			Project Alternative B			Project Alternative C		
	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat
Freeway Volume (Upstream):	5,607	4,835	5307	5,607	4,835	5307	5,607	4,835	5307	5,607	4,835	5307	5,607	4,835	5307
Ramp Volume:	934	852	942	997	983	1087	1,000	930	1030	1,002	922	1020	1,001	952	1056
Acceleration Length (ft.):	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Adjusted Freeway Volume (Upstream):	6,262	5,400	5,927	6,262	5,400	5,927	6,262	5,400	5,927	6,262	5,400	5,927	6,262	5,400	5,927
Adjusted Ramp Volume:	1,043	952	1,052	1,113	1,098	1,214	1,117	1,039	1,150	1,119	1,030	1,139	1,118	1,063	1,179
Downstream Freeway Capacity:	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Downstream Freeway V/C:	0.61	0.53	0.58	0.61	0.54	0.60	0.61	0.54	0.59	0.62	0.54	0.59	0.62	0.54	0.59
Proportion in lanes 1,2 (Pfm):	0.366	0.378	0.365	0.357	0.359	0.345	0.357	0.367	0.353	0.357	0.368	0.354	0.357	0.364	0.349
V12 (upstream two-lane volume):	2,293	2,039	2,164	2,238	1,940	2,044	2,235	1,980	2,091	2,233	1,986	2,099	2,234	1,964	2,070
VR12 (downstream two-lane volume):	3,336	2,991	3,216	3,351	3,038	3,258	3,352	3,019	3,241	3,352	3,016	3,238	3,352	3,027	3,249
VR12 Capacity:	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600	4,600
VR12 V/C:	0.73	0.65	0.70	0.73	0.66	0.71	0.73	0.66	0.70	0.73	0.66	0.70	0.73	0.66	0.71
Density (pc/mi/ln):	24.75	22.10	23.81	24.83	22.40	24.06	24.84	22.28	23.96	24.84	22.26	23.94	24.84	22.33	24.00
Level of Service:	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

Free-Flow Speed = 70 mph

Peak Hour Factor = 0.92

Percent Trucks = 5.5%

Actual Capacity / Ideal Capacity = 90%

Free-flow speed of ramp (mi/h) = 40

Freeway Mainline Capacity = 2400

Truck Equivalent Factor = 1.5

Exhibit 25-7

(HCM pg 23-9) Terrain: Level = 1.5, Rolling = 2.5, Mountainous = 4.5

LOS Worksheets
Existing Conditions

Curtis Park Village
Existing Conditions
AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Project Ex
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: AM

Curtis Park Village
Existing Conditions
AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.401
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.1
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 55 184 39 75 208 38 24 470 45 74 728 78
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: 55 184 39 75 208 38 24 470 45 74 728 78
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 55 184 39 75 208 38 24 470 45 74 728 78
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: 55 184 39 75 208 38 24 470 45 74 728 78
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 55 184 39 75 208 38 24 470 45 74 728 78
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
FinalVolume: 55 184 39 75 208 38 24 470 45 74 728 78
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.50 1.00 0.85 0.54 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.83 0.17 1.00 1.81 0.19
Final Sat.: 942 1900 1615 1020 1900 1615 1805 3252 311 1805 3212 344
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.06 0.10 0.02 0.07 0.11 0.02 0.01 0.14 0.14 0.04 0.23 0.23
Crit Moves: **** *
Green/Cycle: 0.27 0.27 0.27 0.27 0.27 0.27 0.06 0.51 0.51 0.10 0.55 0.55
Volume/Cap: 0.22 0.37 0.09 0.28 0.41 0.09 0.23 0.29 0.29 0.41 0.41 0.41
Delay/Veh: 20.5 21.4 19.5 21.0 21.8 19.4 32.7 10.1 10.1 31.0 9.3 9.3
User DelAdj: 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: 20.5 21.4 19.5 21.0 21.8 19.4 32.7 10.1 10.1 31.0 9.3 9.3
LOS by Move: C C B C C B C B B C A A
HCM2k95thQ: 2 7 1 3 8 1 2 7 7 4 11 11

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.245
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 11.1
Optimal Cycle: 28 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: Split Phase Split Phase Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 10 10 10 0 10 10 4 10 0
Lanes: 0 0 0 0 0 0 1 0 0 1 0 1 0 0 1 0

Volume Module:0745

Base Vol: 0 0 0 47 568 10 0 70 8 137 59 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 0 0 47 568 10 0 70 8 137 59 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 47 568 10 0 70 8 137 59 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 0 0 47 568 10 0 70 8 137 59 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 47 568 10 0 70 8 137 59 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
FinalVolume: 0 0 0 47 568 10 0 70 8 137 59 0

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.94 0.94 0.94 1.00 0.99 0.99 0.71 1.00 1.00
Lanes: 0.00 0.00 0.00 0.15 1.82 0.03 1.00 0.90 0.10 1.00 1.00 0.00
Final Sat.: 0 0 0 268 3238 57 1900 1680 192 1341 1900 0

Capacity Analysis Module:

Vol/Sat: 0.00 0.00 0.00 0.18 0.18 0.18 0.00 0.04 0.04 0.10 0.03 0.00
Crit Moves: **** ****
Green/Cycle: 0.00 0.00 0.00 0.72 0.72 0.72 0.00 0.17 0.17 0.17 0.17 0.00
Volume/Cap: 0.00 0.00 0.00 0.25 0.25 0.25 0.00 0.25 0.25 0.60 0.18 0.00
Delay/Veh: 0.0 0.0 0.0 3.5 3.5 3.5 0.0 25.6 25.6 31.3 25.2 0.0
User DelAdj: 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 0.0 0.0 3.5 3.5 3.5 0.0 25.6 25.6 31.3 25.2 0.0
LOS by Move: A A A A A A A C C C C A
HCM2k95thQ: 0 0 0 5 5 5 0 3 3 8 2 0

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.585
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 31 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 10 10 10 0 0 0 10 10 0 0 10 10
Lanes: 0 1 0 1 0 0 0 1 0 0 1 0 0 1 0

Volume Module: >> Count Date: 30 Mar 2005 <<

Base Vol: 63 1124 68 0 0 0 25 92 0 0 133 114
Growth Adj: 1.12 1.12 1.12 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 71 1259 76 0 0 0 25 92 0 0 133 114
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 71 1259 76 0 0 0 25 92 0 0 133 114
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: 71 1259 76 0 0 0 25 92 0 0 133 114
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 71 1259 76 0 0 0 25 92 0 0 133 114
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
FinalVolume: 71 1259 76 0 0 0 25 92 0 0 133 114

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.94 0.94 0.94 1.00 1.00 1.00 0.40 1.00 1.00 1.00 0.93 0.93
Lanes: 0.10 1.79 0.11 0.00 1.00 0.00 1.00 1.00 0.00 1.00 0.54 0.46
Final Sat.: 179 3185 193 0 1900 0 764 1900 0 1900 952 816

Capacity Analysis Module:

Vol/Sat: 0.40 0.40 0.40 0.00 0.00 0.00 0.03 0.05 0.00 0.00 0.14 0.14
Crit Moves: **** ****
Green/Cycle: 0.68 0.68 0.68 0.00 0.00 0.00 0.24 0.24 0.00 0.00 0.24 0.24
Volume/Cap: 0.59 0.59 0.59 0.00 0.00 0.00 0.14 0.20 0.00 0.00 0.59 0.59
Delay/Veh: 6.5 6.5 6.5 0.0 0.0 0.0 21.3 21.5 0.0 0.0 25.7 25.7
User DelAdj: 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: 6.5 6.5 6.5 0.0 0.0 0.0 21.3 21.5 0.0 0.0 25.7 25.7
LOS by Move: A A A A A A C C A A C C
HCM2k95thQ: 17 17 17 0 0 0 1 3 0 0 11 11

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 0 Critical Vol./Cap.(X): 0.516
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 11.0
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Min. Green.

Table with 12 columns for volume counts. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module table with 12 columns for adjustment factors and 4 rows for Adjustment, Lanes, Final Sat., and Final Volume.

Capacity Analysis Module table with 12 columns for delay and LOS. Rows include Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th AV

Average Delay (sec/veh): 1.5 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, Lanes.

Table with 12 columns for volume counts. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with 12 columns for gap values and 2 rows for Critical Gap and FollowUpTim.

Capacity Module table with 12 columns for capacity and 4 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with 12 columns for delay and LOS. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions AM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St
Average Delay (sec/veh): 0.8 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: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Ignore Include
Lanes: 0 1 1 0 0 0 0 0 0 0 1 0 0 0 2 0 0 0 0 0
Volume Module: >> Count Date: 18 Sep 2007 << 0730
Base Vol: 6 1208 0 0 0 0 71 0 646 0 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: 6 1208 0 0 0 0 71 0 646 0 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 6 1208 0 0 0 0 71 0 646 0 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 6 1208 0 0 0 0 71 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 6 1208 0 0 0 0 71 0 0 0 0 0 0
Critical Gap Module:
Critical Gap: 4.1 xxx xxx xxx xxx 6.4 xxx 6.2 xxx xxx xxx
FollowUpTim: 2.2 xxx xxx xxx xxx 3.5 xxx 3.3 xxx xxx xxx
Capacity Module:
Conflict Vol: 0 xxx xxx xxx xxx 616 xxx 0 xxx xxx xxx
Potent Cap.: 900 xxx xxx xxx xxx 457 xxx 900 xxx xxx xxx
Move Cap.: 900 xxx xxx xxx xxx 455 xxx 900 xxx xxx xxx
Volume/Cap: 0.01 xxx xxx xxx xxx 0.16 xxx 0.00 xxx xxx xxx
Level Of Service Module:
2Way95thQ: 0.0 xxx xxx xxx xxx 0.5 xxx xxx xxx xxx
Control Del: 9.0 xxx xxx xxx xxx 14.4 xxx xxx xxx xxx
LOS by Move: A * * * * B * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx
SharedQueue: 0.0 xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx
Shrd ConDel: 9.0 xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx
Shared LOS: A * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 14.4 xxxxxx
ApproachLOS: * * * B *
Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy
Cycle (sec): 70 Critical Vol./Cap.(X): 0.637
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.2
Optimal Cycle: 34 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 10 10 10 10 10 10 0 5 5 0 0 0 0
Lanes: 0 1 0 1 0 0 1 0 1 0 0 0 1 0 0 0 0 1 0 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 84 1001 2 1 618 27 84 2 217 0 0 0 0
Growth Adj: 1.12 1.12 1.12 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 94 1121 2 1 618 27 84 2 217 0 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 94 1121 2 1 618 27 84 2 217 0 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: 94 1121 2 1 618 27 84 2 217 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 94 1121 2 1 618 27 84 2 217 0 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
FinalVolume: 94 1121 2 1 618 27 84 2 217 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.80 0.80 0.80 0.90 0.90 0.90 0.87 0.87 0.87 1.00 1.00 1.00
Lanes: 0.15 1.84 0.01 0.01 1.91 0.08 0.28 0.01 0.71 0.00 1.00 0.00
Final Sat.: 236 2812 6 5 3278 143 458 11 1183 0 1900 0
Capacity Analysis Module:
Vol/Sat: 0.40 0.40 0.40 0.19 0.19 0.19 0.18 0.18 0.18 0.00 0.00 0.00
Crit Moves: * * * * *
Green/Cycle: 0.63 0.63 0.63 0.63 0.63 0.63 0.29 0.29 0.29 0.00 0.00 0.00
Volume/Cap: 0.64 0.64 0.64 0.30 0.30 0.30 0.64 0.64 0.64 0.00 0.00 0.00
Delay/Veh: 8.9 8.9 8.9 6.1 6.1 6.1 24.6 24.6 24.6 0.0 0.0 0.0
User DelAdj: 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: 8.9 8.9 8.9 6.1 6.1 6.1 24.6 24.6 24.6 0.0 0.0 0.0
LOS by Move: A A A A A A C C C A A A
HCM2k95thQ: 18 18 18 7 7 7 13 13 13 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions AM Peak Hour

Level of Service Computation Report 2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.381
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 9.1
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
Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 0 1! 0 0 0 0 1! 0 0

Volume Module:0730

Base Vol: 17 296 1 10 108 4 12 8 27 11 10 39
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: 17 296 1 10 108 4 12 8 27 11 10 39
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 17 296 1 10 108 4 12 8 27 11 10 39
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: 17 296 1 10 108 4 12 8 27 11 10 39
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 17 296 1 10 108 4 12 8 27 11 10 39
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
FinalVolume: 17 296 1 10 108 4 12 8 27 11 10 39

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: 0.05 0.94 0.01 0.08 0.89 0.03 0.26 0.17 0.57 0.18 0.17 0.65
Final Sat.: 45 778 3 64 692 26 183 122 412 134 122 474

Capacity Analysis Module:

Vol/Sat: 0.38 0.38 0.38 0.16 0.16 0.16 0.07 0.07 0.07 0.08 0.08 0.08
Crit Moves: ****
Delay/Veh: 9.8 9.8 9.8 8.2 8.2 8.2 7.9 7.9 7.9 7.9 7.9 7.9
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: 9.8 9.8 9.8 8.2 8.2 8.2 7.9 7.9 7.9 7.9 7.9 7.9
LOS by Move: A A A A A A A A A A A A
ApproachDel: 9.8 8.2 7.9 7.9
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 9.8 8.2 7.9 7.9
LOS by Appr: A A A A
AllWayAvgQ: 0.6 0.6 0.6 0.2 0.2 0.2 0.1 0.1 0.1 0.1 0.1 0.1

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions AM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[10.2]

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Volume Module:

Base Vol: 0 293 0 8 138 0 0 0 0 0 3 0 21
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: 0 293 0 8 138 0 0 0 0 0 3 0 21
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 293 0 8 138 0 0 0 0 0 3 0 21
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: 0 293 0 8 138 0 0 0 0 0 3 0 21
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 293 0 8 138 0 0 0 0 0 3 0 21

Critical Gap Module:

Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 6.4 6.5 6.2
FollowUpTim:xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 3.5 4.0 3.3

Capacity Module:

Cnflct Vol: xxxxx xxxxx xxxxxx 293 xxxxx xxxxxx xxxxx xxxxx xxxxxx 447 447 293
Potent Cap.: xxxxx xxxxx xxxxxx 1280 xxxxx xxxxxx xxxxx xxxxx xxxxxx 573 509 751
Move Cap.: xxxxx xxxxx xxxxxx 1280 xxxxx xxxxxx xxxxx xxxxx xxxxxx 570 506 751
Volume/Cap: xxxxx xxxxx xxxxx 0.01 xxxxx xxxxx xxxxx xxxxx xxxxx 0.01 0.00 0.03

Level Of Service Module:

2Way95thQ: xxxxx xxxxx xxxxxx 0.0 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxxx xxxxx xxxxxx 7.8 xxxxx xxxxxx xxxxxx 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 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx 722 xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.0 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx 0.1 xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 7.8 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx 10.2 xxxxxx
Shared LOS: * * * A * * * * * * * * *
ApproachDel: xxxxxxx xxxxxxx xxxxxxx 10.2
ApproachLOS: * * *

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions AM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[10.6]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0).

Volume Module table with columns: Count, Date (29 Mar 2005), and various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module table with columns: Critical Gp, FollowUpTim, and numerical values.

Capacity Module table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap., and numerical values.

Level of Service Module table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions AM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.0]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0).

Volume Module table with columns: Count, Date (29 Mar 2005), and various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module table with columns: Critical Gp, FollowUpTim, and numerical values.

Capacity Module table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap., and numerical values.

Level of Service Module table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl(North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.807
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.8
Optimal Cycle: 63 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0715. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.545
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 13.8
Optimal Cycle: 44 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Bypass Ramps West/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.632 Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 20.4 Optimal Cycle: 48 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0715

Table with 12 columns for traffic volume and 12 columns for HCM metrics (Base Vol, Growth Adj, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions AM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #17 Bypass Ramps East/Sutterville Rd

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[16.6]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, and Lanes.

Volume Module: except thru movements

Table with 12 columns for traffic volume and 12 columns for HCM metrics (Base Vol, Growth Adj, etc.).

Critical Gap Module:

Table with 12 columns for Critical Gap, FollowUpTim, and Capacity Module.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.589
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 9.7
Optimal Cycle: 38 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions AM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: D[27.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for Critical Gap, FollowUpTim, and Capacity Module data.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.771
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 28.0
Optimal Cycle: 65 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715
Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.828
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 27.1
Optimal Cycle: 69 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715
Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.703
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.3
Optimal Cycle: 49 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715

Table with 12 columns for traffic volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.687
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.4
Optimal Cycle: 46 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0730

Table with 12 columns for traffic volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Blvd/5th Av S

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[12.4]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	1	0	0	1	0	0	0

Volume Module: >> Count Date: 29 Mar 2004 <<

Base Vol:	10	660	0	0	225	6	6	0	14	0	0	0
Growth Adj:	1.14	1.14	1.14	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	752	0	0	225	6	6	0	14	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	752	0	0	225	6	6	0	14	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:	11	752	0	0	225	6	6	0	14	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	11	752	0	0	225	6	6	0	14	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxx	xxxx	xxxx	xxxx	6.4	6.5	6.2	xxxx	xxxx	xxxx
FollowUpTim:	2.2	xxxx	xxxx	xxxx	xxxx	xxxx	3.5	4.0	3.3	xxxx	xxxx	xxxx

Capacity Module:

Cnflct Vol:	231	xxxx	xxxx	xxxx	xxxx	xxxx	1003	1003	228	xxxx	xxxx	xxxx
Potent Cap.:	1349	xxxx	xxxx	xxxx	xxxx	xxxx	271	244	816	xxxx	xxxx	xxxx
Move Cap.:	1349	xxxx	xxxx	xxxx	xxxx	xxxx	269	242	816	xxxx	xxxx	xxxx
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	0.00	0.02	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	0.0	xxxx										
Control Del:	7.7	xxxx										
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	507	xxxx	xxxx	xxxx	xxxx						
SharedQueue:	0.0	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.1	xxxx	xxxx	xxxx	xxxx
Shrd ConDel:	7.7	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	12.4	xxxx	xxxx	xxxx	xxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx		xxxxxx				12.4		xxxxxx			
ApproachLOS:	*		*				B		*			*

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Project Ex
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Sat

Curtis Park Village
Existing Conditions
PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.599
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.9
Optimal Cycle: 43 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:	Permitted			Permitted			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	4	10	10	4	10	10	4	20	20	4	20	20	
Lanes:	1	0	1	0	1	1	0	1	1	0	1	1	0

Volume Module: >> Count Date: 29 Mar 2005 <<

Base Vol:	56	162	71	158	409	36	35	790	101	101	905	80
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:	56	162	71	158	409	36	35	790	101	101	905	80
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	56	162	71	158	409	36	35	790	101	101	905	80
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:	56	162	71	158	409	36	35	790	101	101	905	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	162	71	158	409	36	35	790	101	101	905	80
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 Volume:	56	162	71	158	409	36	35	790	101	101	905	80

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.31	1.00	0.85	0.61	1.00	0.85	0.95	0.93	0.93	0.95	0.94	0.94
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.77	0.23	1.00	1.84	0.16
Final Sat.:	589	1900	1615	1161	1900	1615	1805	3146	402	1805	3277	290

Capacity Analysis Module:

Vol/Sat:	0.10	0.09	0.04	0.14	0.22	0.02	0.02	0.25	0.25	0.06	0.28	0.28
Crit Moves:				****			****			****		
Green/Cycle:	0.36	0.36	0.36	0.36	0.36	0.36	0.09	0.42	0.42	0.09	0.43	0.43
Volume/Cap:	0.26	0.24	0.12	0.38	0.60	0.06	0.23	0.60	0.60	0.60	0.65	0.65
Delay/Veh:	16.6	15.9	15.1	17.2	19.8	14.7	30.6	16.5	16.5	36.3	16.9	16.9
User DelAdj:	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:	16.6	15.9	15.1	17.2	19.8	14.7	30.6	16.5	16.5	36.3	16.9	16.9
LOS by Move:	B	B	B	B	B	B	C	B	B	D	B	B
HCM2k95thQ:	2	5	2	6	15	1	2	16	16	6	18	18

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.519
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 13.7
Optimal Cycle: 32 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: Split Phase Split Phase Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 10 10 10 0 10 10 4 10 0
Lanes: 0 0 0 0 0 0 1 0 0 1 0 1 0 0 1 0

Volume Module:1700

Base Vol: 0 0 0 51 1349 22 0 59 18 178 119 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 0 0 51 1349 22 0 59 18 178 119 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 51 1349 22 0 59 18 178 119 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 0 0 51 1349 22 0 59 18 178 119 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 51 1349 22 0 59 18 178 119 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
FinalVolume: 0 0 0 51 1349 22 0 59 18 178 119 0

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.94 0.94 0.94 1.00 0.97 0.97 0.71 1.00 1.00
Lanes: 0.00 0.00 0.00 0.07 1.90 0.03 1.00 0.77 0.23 1.00 1.00 0.00
Final Sat.: 0 0 0 129 3401 55 1900 1405 429 1341 1900 0

Capacity Analysis Module:

Vol/Sat: 0.00 0.00 0.00 0.40 0.40 0.40 0.00 0.04 0.04 0.13 0.06 0.00
Crit Moves: ****
Green/Cycle: 0.00 0.00 0.00 0.74 0.74 0.74 0.00 0.14 0.14 0.14 0.14 0.00
Volume/Cap: 0.00 0.00 0.00 0.53 0.53 0.53 0.00 0.29 0.29 0.93 0.44 0.00
Delay/Veh: 0.0 0.0 0.0 4.0 4.0 4.0 0.0 27.5 27.5 74.8 28.6 0.0
User DelAdj: 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 0.0 0.0 4.0 4.0 4.0 0.0 27.5 27.5 74.8 28.6 0.0
LOS by Move: A A A A A A A C C E C A
HCM2k95thQ: 0 0 0 14 14 14 0 4 4 14 6 0

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.440
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 10 10 10 0 0 0 10 10 0 0 10 10
Lanes: 0 1 0 1 0 0 0 1 0 0 1 0 0 1 0

Volume Module: >> Count Date: 30 Mar 2005 <<

Base Vol: 61 684 40 0 0 0 22 88 0 0 236 93
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: 61 684 40 0 0 0 22 88 0 0 236 93
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 61 684 40 0 0 0 22 88 0 0 236 93
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: 61 684 40 0 0 0 22 88 0 0 236 93
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 61 684 40 0 0 0 22 88 0 0 236 93
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
FinalVolume: 61 684 40 0 0 0 22 88 0 0 236 93

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.93 0.93 1.00 1.00 1.00 0.44 1.00 1.00 1.00 0.96 0.96
Lanes: 0.16 1.74 0.10 0.00 1.00 0.00 1.00 1.00 0.00 1.00 0.72 0.28
Final Sat.: 275 3083 180 0 1900 0 830 1900 0 1900 1306 515

Capacity Analysis Module:

Vol/Sat: 0.22 0.22 0.22 0.00 0.00 0.00 0.03 0.05 0.00 0.00 0.18 0.18
Crit Moves: ****
Green/Cycle: 0.50 0.50 0.50 0.00 0.00 0.00 0.41 0.41 0.00 0.00 0.41 0.41
Volume/Cap: 0.44 0.44 0.44 0.00 0.00 0.00 0.06 0.11 0.00 0.00 0.44 0.44
Delay/Veh: 11.2 11.2 11.2 0.0 0.0 0.0 12.6 12.8 0.0 0.0 15.3 15.3
User DelAdj: 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: 11.2 11.2 11.2 0.0 0.0 0.0 12.6 12.8 0.0 0.0 15.3 15.3
LOS by Move: B B B A A A B B A A B B
HCM2k95thQ: 11 11 11 0 0 0 1 2 0 0 10 10

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 0 Critical Vol./Cap.(X): 0.718 Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 15.1 Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Min. Green.

Table with 12 columns for volume and saturation flow. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module table with 12 columns and 5 rows: Adjustment, Lanes, Final Sat., etc.

Capacity Analysis Module table with 12 columns and 15 rows: Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th AV

Average Delay (sec/veh): 0.7 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, Lanes.

Table with 12 columns for volume and saturation flow. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with 12 columns and 2 rows: Critical Gp, FollowUpTim.

Capacity Module table with 12 columns and 4 rows: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with 12 columns and 10 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[11.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include, Ignore), and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Critical Gap Module: Table with 4 columns for Critical Gap, FollowUpTim, and other metrics.

Capacity Module: Table with 4 columns for Capacity metrics and 4 rows for different volume/capacity scenarios.

Level Of Service Module: Table with 4 columns for LOS by Move, Movement, Shared Cap., and Shared Queue.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.552

Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8

Optimal Cycle: 29 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Permitted, Split Phase), Rights (Include), and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 4 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 4 columns for Vol/Sat, Crit Moves, Green/Cycle, and Volume/Cap.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.599
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 11.9
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for flow and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for flow and 14 rows for Vol/Sat, Crit Moves, Delay/Veh, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[10.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for flow and 2 rows for Critical Gp and FollowUpTim.

Capacity Module table with 12 columns for flow and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for flow and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[12.6]

Table with 4 columns: Approach (North, South, East, West), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes.

Table with 12 columns: Volume Module, Count, Date (29 Mar 2005), and various traffic volume metrics like Base Vol, Growth Adj, etc.

Table with 3 columns: Critical Gap Module, Critical Gp, and FollowUpTim.

Table with 3 columns: Capacity Module, Cnflct Vol, and Volume/Cap.

Table with 12 columns: Level of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av N

Cycle (sec): 50 Critical Vol./Cap.(X): 0.547

Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.4

Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West), Movement (L, T, R), Control (Permitted, Split Phase), Rights (Include), and Lanes.

Table with 12 columns: Volume Module, Count, Date (29 Mar 2005), and various traffic volume metrics like Base Vol, Growth Adj, etc.

Table with 12 columns: Saturation Flow Module, Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns: Capacity Analysis Module, Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[11.7]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0)

Volume Module: >> Count Date: 1 Sep 1997 <<. Table with 11 columns for volume counts and 11 rows for various metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 3 columns for gap values (4.1, 6.4, 6.5, 6.2) and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 3 columns for capacity values (102, 542, 542, 101) and 5 rows for various capacity metrics.

Level Of Service Module: Table with 11 columns for LOS values and 11 rows for various LOS metrics like 2Way95thQ, Control Del, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[10.5]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0)

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 11 columns for volume counts and 11 rows for various metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 3 columns for gap values (4.1, 6.4, 6.5, 6.2) and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 3 columns for capacity values (100, 545, 545, 99) and 5 rows for various capacity metrics.

Level Of Service Module: Table with 11 columns for LOS values and 11 rows for various LOS metrics like 2Way95thQ, Control Del, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl(North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.721
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.8
Optimal Cycle: 50 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.573
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 18.5
Optimal Cycle: 44 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Bypass Ramps West/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.753
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 23.7
Optimal Cycle: 61 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.

Table with 12 columns for volume and delay metrics. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #17 Bypass Ramps East/Sutterville Rd

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C[16.9]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Table with 12 columns for volume and delay metrics. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for Critical Gap and FollowUpTim.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.659
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 44 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Table with 12 columns for traffic volume and delay. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[16.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic volume and delay. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Critical Gap Module table with 12 columns for Critical Gp and FollowUpTim.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.698
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 24.9
Optimal Cycle: 55 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.898
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 28.2
Optimal Cycle: 89 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.686
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.0
Optimal Cycle: 47 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume and 12 columns for growth/initial/added/passing/initial fut/user/phf/reduced/pce/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.817
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.8
Optimal Cycle: 64 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1630. Table with 12 columns for volume and 12 columns for growth/initial/added/passing/initial fut/user/phf/reduced/pce/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Blvd/5th Av S

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[13.9]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module: >> Count Date: 29 Mar 2005 <<

Base Vol:	3	333	0	0	655	23	2	0	12	0	0	0
Growth Adj:	1.03	1.03	1.03	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	343	0	0	655	23	2	0	12	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	343	0	0	655	23	2	0	12	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:	3	343	0	0	655	23	2	0	12	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	3	343	0	0	655	23	2	0	12	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxx	xxxx	xxxx	xxxx	6.4	6.5	6.2	xxxx	xxxx	xxxx
FollowUpTim:	2.2	xxxx	xxxx	xxxx	xxxx	xxxx	3.5	4.0	3.3	xxxx	xxxx	xxxx

Capacity Module:

Cnflct Vol:	678	xxxx	xxxx	xxxx	xxxx	xxxx	1016	1016	667	xxxx	xxxx	xxxx
Potent Cap.:	923	xxxx	xxxx	xxxx	xxxx	xxxx	266	240	463	xxxx	xxxx	xxxx
Move Cap.:	923	xxxx	xxxx	xxxx	xxxx	xxxx	265	239	463	xxxx	xxxx	xxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	0.00	0.03	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	0.0	xxxx										
Control Del:	8.9	xxxx										
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	418	xxxx	xxxx	xxxx	xxxx	xxxx
SharedQueue:	0.0	xxxx	xxxx	xxxx	xxxx	xxxx	0.1	xxxx	xxxx	xxxx	xxxx	xxxx
Shrd ConDel:	8.9	xxxx	xxxx	xxxx	xxxx	xxxx	13.9	xxxx	xxxx	xxxx	xxxx	xxxx
Shared LOS:	A	*	*	*	*	*	B	*	*	*	*	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	13.9	xxxxxx	xxxxxx	xxxxxx	xxxxxx	
ApproachLOS:	*	*	*	*	*	*	B	*	*	*	*	*

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Project Ex
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Sat

Curtis Park Village
Existing Conditions
Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.332
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 10.6
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 37 80 29 49 100 38 25 612 44 41 713 80
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 80 29 49 100 38 25 612 44 41 713 80
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 37 80 29 49 100 38 25 612 44 41 713 80
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 80 29 49 100 38 25 612 44 41 713 80
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 37 80 29 49 100 38 25 612 44 41 713 80
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
FinalVolume: 37 80 29 49 100 38 25 612 44 41 713 80
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.66 1.00 0.85 0.70 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.87 0.13 1.00 1.80 0.20
Final Sat.: 1252 1900 1615 1338 1900 1615 1805 3334 240 1805 3197 359
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.03 0.04 0.02 0.04 0.05 0.02 0.01 0.18 0.18 0.02 0.22 0.22
Crit Moves: **** *
Green/Cycle: 0.16 0.16 0.16 0.16 0.16 0.16 0.06 0.60 0.60 0.12 0.66 0.66
Volume/Cap: 0.19 0.27 0.12 0.24 0.34 0.15 0.24 0.31 0.31 0.19 0.34 0.34
Delay/Veh: 26.2 26.6 25.6 26.5 27.0 25.8 32.8 7.1 7.1 28.2 5.3 5.3
User DelAdj: 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: 26.2 26.6 25.6 26.5 27.0 25.8 32.8 7.1 7.1 28.2 5.3 5.3
LOS by Move: C C C C C C C A A C A A
HCM2k95thQ: 2 4 1 2 5 2 2 7 7 2 8 8

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.255
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 8.6
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.288
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.0
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions Saturday Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[10.5]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Uncontrolled, Stop Sign), and Lanes (0-1).

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 11 columns for volume and growth factors.

Critical Gap Module: Table with 2 columns: Critical Gap (6.2) and FollowUpTim (3.3).

Capacity Module: Table with 2 columns: Capacity (370) and Move Cap. (681).

Level Of Service Module: Table with 2 columns: 2Way95thQ (0.1) and Control Del (10.5).

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions Saturday Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: B[11.3]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Uncontrolled, Stop Sign), and Lanes (0-2).

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 11 columns for volume and growth factors.

Critical Gap Module: Table with 2 columns: Critical Gap (6.4) and FollowUpTim (3.3).

Capacity Module: Table with 2 columns: Capacity (335) and Move Cap. (661).

Level Of Service Module: Table with 2 columns: 2Way95thQ (0.4) and Control Del (11.3).

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.337 Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.7 Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 10 columns for volume and 10 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 10 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 10 columns for Vol/Sat and 10 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av N

Cycle (sec): 50 Critical Vol./Cap.(X): 0.217 Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.0 Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 10 columns for volume and 10 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 10 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 10 columns for Vol/Sat and 10 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl(North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.518
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.2
Optimal Cycle: 34 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.422
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 13.6
Optimal Cycle: 44 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 Bypass Ramps West/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.246 Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 10.9 Optimal Cycle: 31 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: >> Count Date: 2 Apr 2005 <<

Table with 12 columns representing different traffic movements and 10 rows of performance metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 5 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 10 rows showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions Saturday Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #17 Bypass Ramps East/Sutterville Rd

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.5]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: except thru movements

Table with 12 columns representing different traffic movements and 10 rows of performance metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns and 2 rows showing Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns and 4 rows showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns and 6 rows showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.338
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 6.7
Optimal Cycle: 36 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: C[21.7]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for Critical Gp and FollowUpTim.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.624 Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 24.2 Optimal Cycle: 48 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Includes Control, Rights, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 columns for various adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.933 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 33.4 Optimal Cycle: 104 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Includes Control, Rights, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 columns for various adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.727 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 20.0 Optimal Cycle: 52 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Existing Conditions Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.707 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.9 Optimal Cycle: 48 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Existing Conditions
Saturday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Blvd/5th Av S

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[11.1]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module: >> Count Date: 29 Mar 2005 <<

Base Vol:	14	254	0	0	280	16	7	0	9	0	0	0
Growth Adj:	1.03	1.03	1.03	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14	262	0	0	280	16	7	0	9	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	262	0	0	280	16	7	0	9	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:	14	262	0	0	280	16	7	0	9	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	14	262	0	0	280	16	7	0	9	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxx	xxxx	xxxx	xxxx	6.4	6.5	6.2	xxxx	xxxx	xxxx
FollowUpTim:	2.2	xxxx	xxxx	xxxx	xxxx	xxxx	3.5	4.0	3.3	xxxx	xxxx	xxxx

Capacity Module:

Cnflct Vol:	296	xxxx	xxxx	xxxx	xxxx	xxxx	578	578	288	xxxx	xxxx	xxxx
Potent Cap.:	1277	xxxx	xxxx	xxxx	xxxx	xxxx	481	429	756	xxxx	xxxx	xxxx
Move Cap.:	1277	xxxx	xxxx	xxxx	xxxx	xxxx	477	424	756	xxxx	xxxx	xxxx
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	0.00	0.01	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	0.0	xxxx										
Control Del:	7.9	xxxx										
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	602	xxxx	xxxx	xxxx	xxxx	xxxx
SharedQueue:	0.0	xxxx	xxxx	xxxx	xxxx	xxxx	0.1	xxxx	xxxx	xxxx	xxxx	xxxx
Shrd ConDel:	7.9	xxxx	xxxx	xxxx	xxxx	xxxx	11.1	xxxx	xxxx	xxxx	xxxx	xxxx
Shared LOS:	A	*	*	*	*	*	B	*	*	*	*	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	11.1	xxxxxx	xxxxxx	xxxxxx	xxxxxx	
ApproachLOS:	*	*	*	*	*	*	B	*	*	*	*	*

Note: Queue reported is the number of cars per lane.

LOS Worksheets
Baseline Conditions

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.401
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.1
Optimal Cycle: 43 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:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	20	20	4	20	20
Lanes:	1	0	1	0	1	1	1	0	1	1	0	1

Volume Module: >> Count Date: 29 Mar 2005 <<

Base Vol:	55	184	39	75	208	38	24	470	45	74	728	78
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:	55	184	39	75	208	38	24	470	45	74	728	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	55	184	39	75	208	38	24	470	45	74	728	78
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:	55	184	39	75	208	38	24	470	45	74	728	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	184	39	75	208	38	24	470	45	74	728	78
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
FinalVolume:	55	184	39	75	208	38	24	470	45	74	728	78

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.50	1.00	0.85	0.54	1.00	0.85	0.95	0.94	0.94	0.95	0.94	0.94
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.83	0.17	1.00	1.81	0.19
Final Sat.:	942	1900	1615	1020	1900	1615	1805	3252	311	1805	3212	344

Capacity Analysis Module:

Vol/Sat:	0.06	0.10	0.02	0.07	0.11	0.02	0.01	0.14	0.14	0.04	0.23	0.23
Crit Moves:				****			****			****		
Green/Cycle:	0.27	0.27	0.27	0.27	0.27	0.27	0.06	0.51	0.51	0.10	0.55	0.55
Volume/Cap:	0.22	0.37	0.09	0.28	0.41	0.09	0.23	0.29	0.29	0.41	0.41	0.41
Delay/Veh:	20.5	21.4	19.5	21.0	21.8	19.4	32.7	10.1	10.1	31.0	9.3	9.3
User DelAdj:	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:	20.5	21.4	19.5	21.0	21.8	19.4	32.7	10.1	10.1	31.0	9.3	9.3
LOS by Move:	C	C	B	C	C	B	C	B	B	C	A	A
HCM2k95thQ:	2	7	1	3	8	1	2	7	7	4	11	11

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.514
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 20.0
Optimal Cycle: 32 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:0745

Table with 12 columns for traffic volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.444
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.2
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 0.516
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 11.0
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Min. Green.

Table with 12 columns for traffic flow. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module table with 12 columns for flow and 4 rows for Adjustment, Lanes, Final Sat., and Saturation Flow.

Capacity Analysis Module table with 12 columns for flow and 14 rows for Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th AV

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: B[12.6]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Table with 12 columns for traffic flow. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with 12 columns for flow and 2 rows for Critical Gap and FollowUpTim.

Capacity Module table with 12 columns for flow and 4 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with 12 columns for flow and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.571
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 16.7
Optimal Cycle: 39 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.598
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.1
Optimal Cycle: 32 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.381
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 9.1
Optimal Cycle: 0 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module:0730.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module table with 12 columns for adjustment factors and final saturation values.

Capacity Analysis Module table with 12 columns for volume/saturation, delay, and LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 0.7 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, Lanes, and Volume Module: >> Count Date: 29 Mar 2005 <<.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

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 move capacity.

Level of Service Module table with 12 columns for delay, LOS by movement, and approach delay.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[10.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 0 1 0, etc.)

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 275 13 10 131 0 0 0 0 6 0 18
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

Critical Gap Module:
Critical Gap: xxxxx xxxxx xxxxx 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 6.4 6.5 6.2
FollowUpTim: xxxxx xxxxx xxxxx 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3

Capacity Module:
Conflict Vol: xxxxx xxxxx xxxxx 288 xxxxx xxxxx xxxxx xxxxx xxxxx 433 433 282
Potent Cap.: xxxxx xxxxx xxxxx 1286 xxxxx xxxxx xxxxx xxxxx xxxxx 584 519 762

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: xxxxx xxxxx xxxxx 7.8 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.515
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.6
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Permitted, Split Phase), Rights (Include), Lanes (0 0 0 1 0, etc.)

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 523 143 25 188 0 0 0 0 43 0 29
Growth Adj: 1.14 1.14 1.14 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.97 0.97 0.91 0.91 1.00 1.00 1.00 1.00 0.92 1.00 0.92

Capacity Analysis Module:
Vol/Sat: 0.00 0.41 0.41 0.12 0.12 0.00 0.00 0.00 0.00 0.04 0.00 0.04
Crit Moves: ****

Green/Cycle: 0.00 0.68 0.68 0.68 0.68 0.00 0.00 0.00 0.00 0.20 0.00 0.20
Volume/Cap: 0.00 0.61 0.61 0.18 0.18 0.00 0.00 0.00 0.00 0.21 0.00 0.21
Delay/Veh: 0.0 5.2 5.2 3.0 3.0 0.0 0.0 0.0 0.0 17.0 0.0 17.0

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[10.6]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0).

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume counts and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 3 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 3 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap, Move Cap, etc.

Level of Service Module: Table with 12 columns for LOS metrics and 7 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.0]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0).

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume counts and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 3 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 3 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap, Move Cap, etc.

Level of Service Module: Table with 12 columns for LOS metrics and 7 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.807
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.8
Optimal Cycle: 63 Level Of Service: C

Table with columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Protected, Permitted), Rights (Ignore, Include, Ovl), and Lane counts.

Volume Module: >> Count Date: 18 Sep 2007 << 0715. Table showing traffic volume, growth, and adjustments for various movements.

Saturation Flow Module: Table showing saturation flow rates for different lane configurations.

Capacity Analysis Module: Table showing capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.440
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.0
Optimal Cycle: 44 Level Of Service: A

Table with columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Permitted), Rights (Include), and Lane counts.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table showing traffic volume, growth, and adjustments for various movements.

Saturation Flow Module: Table showing saturation flow rates for different lane configurations.

Capacity Analysis Module: Table showing capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.632
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 20.4
Optimal Cycle: 48 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: >> Count Date: 18 Sep 2007 << 0715

Table with 12 columns representing traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with 12 columns for movements and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for movements and 4 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[16.3]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: >> Count Date: 19 Apr 2005 << except thru movements

Table with 12 columns representing traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table with 12 columns for movements and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns for movements and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns for movements and 4 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.589
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 8.7
Optimal Cycle: 38 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow directions. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module table with 12 columns for directions and 4 rows for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns for directions and 14 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: D[27.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Table with 12 columns for traffic flow directions. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module table with 12 columns for directions and 2 rows for Critical Gp, FollowUpTim.

Capacity Module table with 12 columns for directions and 4 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with 12 columns for directions and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.771
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 28.0
Optimal Cycle: 65 Level Of Service: C

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Protected and Split Phase.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns for saturation flow values and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis values and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.828
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 27.1
Optimal Cycle: 69 Level Of Service: C

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Split Phase and Protected.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns for saturation flow values and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis values and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.706
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.3
Optimal Cycle: 49 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume and growth factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.687
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.4
Optimal Cycle: 46 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0730. Table with 12 columns for volume and growth factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for different traffic movements and 12 rows for various volume and adjustment factors.

Critical Gap Module: Table with 3 columns for Critical Gap, FollowUpTim, and Capacity Module.

Capacity Module: Table with 12 columns for different traffic movements and 4 rows for Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 12 columns for different traffic movements and 10 rows for various delay and queue metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.599
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.9
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 56 162 71 158 409 36 35 790 101 101 905 80
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: 56 162 71 158 409 36 35 790 101 101 905 80
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 56 162 71 158 409 36 35 790 101 101 905 80
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: 56 162 71 158 409 36 35 790 101 101 905 80
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 56 162 71 158 409 36 35 790 101 101 905 80
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
FinalVolume: 56 162 71 158 409 36 35 790 101 101 905 80
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.31 1.00 0.85 0.61 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.77 0.23 1.00 1.84 0.16
Final Sat.: 589 1900 1615 1161 1900 1615 1805 3146 402 1805 3277 290
Capacity Analysis Module:
Vol/Sat: 0.10 0.09 0.04 0.14 0.22 0.02 0.02 0.25 0.25 0.06 0.28 0.28
Crit Moves: **** ****
Green/Cycle: 0.36 0.36 0.36 0.36 0.36 0.36 0.09 0.42 0.42 0.09 0.43 0.43
Volume/Cap: 0.26 0.24 0.12 0.38 0.60 0.06 0.23 0.60 0.60 0.60 0.65 0.65
Delay/Veh: 16.6 15.9 15.1 17.2 19.8 14.7 30.6 16.5 16.5 36.3 16.9 16.9
User DelAdj: 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: 16.6 15.9 15.1 17.2 19.8 14.7 30.6 16.5 16.5 36.3 16.9 16.9
LOS by Move: B B B B B C B B D B B
HCM2k95thQ: 2 5 2 6 15 1 2 16 16 6 18 18
Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.880
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 36.2
Optimal Cycle: 78 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: 1700. Table with 12 columns for traffic volume and 12 columns for various adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.480
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.6
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module. Table with 12 columns for traffic volume and 12 columns for various adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 0.718
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 15.1
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns and 5 rows showing adjustment factors and final saturation values.

Capacity Analysis Module table with 12 columns and 12 rows showing delay, LOS, and approach delay data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: A[9.6]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns and 2 rows showing gap values and follow-up times.

Capacity Module table with 12 columns and 4 rows showing conflict volume, potential capacity, move capacity, and volume/capacity.

Level of Service Module table with 12 columns and 10 rows showing delay, LOS, and approach delay data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.597
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.6
Optimal Cycle: 39 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.568
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 30 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.599
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 11.9
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table for Saturation Flow Module with 12 columns. Rows include Adjustment, Lanes, and Final Sat.

Table for Capacity Analysis Module with 12 columns. Rows include Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[10.1]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Table for Critical Gap Module with 12 columns. Rows include Critical Gp and FollowUpTim.

Table for Capacity Module with 12 columns. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Table for Level of Service Module with 12 columns. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy
Average Delay (sec/veh): 3.2 Worst Case Level Of Service: A[9.4]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 1 0 0
Volume Module:
Base Vol: 0 77 17 43 453 0 0 0 0 16 0 4
Growth Adj: 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 77 17 43 0 0 0 0 0 16 0 4
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 77 17 43 0 0 0 0 0 16 0 4
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 77 17 43 0 0 0 0 0 16 0 4
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 77 17 43 0 0 0 0 0 16 0 4
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2
FollowUpTim:xxxxx xxxx xxxxx 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: xxxx xxxx xxxxx 94 xxxx xxxxx xxxx xxxx xxxxx 172 172 86
Potent Cap.: xxxx xxxx xxxxx 1513 xxxx xxxxx xxxx xxxx xxxxx 823 725 979
Move Cap.: xxxx xxxx xxxxx 1513 xxxx xxxxx xxxx xxxx xxxxx 805 704 979
Volume/Cap: xxxx xxxx xxxxx 0.03 xxxx xxxxx xxxxx xxxx xxxxx 0.02 0.00 0.00
Level Of Service Module:
2Way95thQ: xxxx xxxx xxxxx 0.1 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx 7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: * * * A * * * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 835 xxxxx
SharedQueue:xxxxx xxxx xxxxx 0.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx 7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 9.4 xxxxx
Shared LOS: * * * A * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx 9.4
ApproachLOS: * * * A
Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.547
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.4
Optimal Cycle: 28 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 10 0 4 10 0 0 0 0 0 4 0 10
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 0 1 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 267 68 41 656 0 0 0 0 122 0 59
Growth Adj: 1.03 1.03 1.03 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 275 70 41 656 0 0 0 0 122 0 59
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 275 70 41 656 0 0 0 0 122 0 59
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: 0 275 70 41 656 0 0 0 0 122 0 59
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 275 70 41 656 0 0 0 0 122 0 59
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
FinalVolume: 0 275 70 41 656 0 0 0 0 122 0 59
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.97 0.97 0.97 0.97 1.00 1.00 1.00 1.00 0.92 1.00 0.92
Lanes: 0.00 0.80 0.20 0.06 0.94 0.00 0.00 0.00 0.00 0.67 0.00 0.33
Final Sat.: 0 1473 375 108 1733 0 0 0 0 1184 0 573
Capacity Analysis Module:
Vol/Sat: 0.00 0.19 0.19 0.38 0.38 0.00 0.00 0.00 0.00 0.10 0.00 0.10
Crit Moves: ****
Green/Cycle: 0.00 0.68 0.68 0.68 0.68 0.00 0.00 0.00 0.00 0.20 0.00 0.20
Volume/Cap: 0.00 0.27 0.27 0.56 0.56 0.00 0.00 0.00 0.00 0.52 0.00 0.52
Delay/Veh: 0.0 3.3 3.3 4.7 4.7 0.0 0.0 0.0 0.0 19.2 0.0 19.2
User DelAdj: 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 3.3 3.3 4.7 4.7 0.0 0.0 0.0 0.0 19.2 0.0 19.2
LOS by Move: A A A A A A A A A B A B
HCM2k95thQ: 0 5 5 12 12 0 0 0 0 7 0 7
Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[11.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 1 Sep 1997 <<. Table with 10 columns for volume counts and 10 rows for various traffic metrics.

Critical Gap Module: Table with 3 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 3 columns for capacity metrics and 5 rows for various capacity-related metrics.

Level of Service Module: Table with 10 columns for LOS metrics and 10 rows for various LOS-related metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[10.5]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 10 columns for volume counts and 10 rows for various traffic metrics.

Critical Gap Module: Table with 3 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 3 columns for capacity metrics and 5 rows for various capacity-related metrics.

Level of Service Module: Table with 10 columns for LOS metrics and 10 rows for various LOS-related metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.721
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.8
Optimal Cycle: 50 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700. Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.501
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.0
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.753
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 23.7
Optimal Cycle: 61 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Table with 12 columns for volume and delay metrics. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C[16.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, and Lanes.

Table with 12 columns for volume and delay metrics. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Table with 12 columns for capacity analysis. Rows include Critical Gap Module, Critical Gp, and FollowUpTim.

Table with 12 columns for capacity analysis. Rows include Capacity Module, Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Table with 12 columns for level of service. Rows include Level Of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.659
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 13.7
Optimal Cycle: 44 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Min. Green.

Table with 12 columns for volume counts. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

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, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[16.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Table with 12 columns for volume counts. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with 12 columns for Critical Gp, FollowUpTim.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.698
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 24.9
Optimal Cycle: 55 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Includes Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for various approaches and movements.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.898
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 28.2
Optimal Cycle: 89 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Includes Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for various approaches and movements.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.686
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.0
Optimal Cycle: 47 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume and growth factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.817
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.8
Optimal Cycle: 64 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1630. Table with 12 columns for volume and growth factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.332
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 10.6
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 37 80 29 49 100 38 25 612 44 41 713 80
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 80 29 49 100 38 25 612 44 41 713 80
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 37 80 29 49 100 38 25 612 44 41 713 80
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 80 29 49 100 38 25 612 44 41 713 80
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 37 80 29 49 100 38 25 612 44 41 713 80
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
FinalVolume: 37 80 29 49 100 38 25 612 44 41 713 80
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.66 1.00 0.85 0.70 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.87 0.13 1.00 1.80 0.20
Final Sat.: 1252 1900 1615 1338 1900 1615 1805 3334 240 1805 3197 359
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.03 0.04 0.02 0.04 0.05 0.02 0.01 0.18 0.18 0.02 0.22 0.22
Crit Moves: **** *
Green/Cycle: 0.16 0.16 0.16 0.16 0.16 0.16 0.06 0.60 0.60 0.12 0.66 0.66
Volume/Cap: 0.19 0.27 0.12 0.24 0.34 0.15 0.24 0.31 0.31 0.19 0.34 0.34
Delay/Veh: 26.2 26.6 25.6 26.5 27.0 25.8 32.8 7.1 7.1 28.2 5.3 5.3
User DelAdj: 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: 26.2 26.6 25.6 26.5 27.0 25.8 32.8 7.1 7.1 28.2 5.3 5.3
LOS by Move: C C C C C C C A A C A A
HCM2k95thQ: 2 4 1 2 5 2 2 7 7 2 8 8

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.432
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 16.7
Optimal Cycle: 28 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.229
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.8
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: A[9.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include, Include, Include), Lanes (0 0 1 1 0, 0 1 0 0 0, 0 0 0 0 0, 0 0 0 0 1)

Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 0 406 37 33 321 0 0 0 0 0 0 0 54
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.17 1.17 1.17
Initial Bse: 0 406 37 33 321 0 0 0 0 0 0 63
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 406 37 33 321 0 0 0 0 0 0 63
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: 0 406 37 33 321 0 0 0 0 0 0 63
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 406 37 33 321 0 0 0 0 0 0 63

Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 6.2
FollowUpTim:xxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 3.3

Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 443 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 222
Potent Cap.: xxxxx xxxxx xxxxxx 1128 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 823
Move Cap.: xxxxx xxxxx xxxxxx 1128 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 823
Volume/Cap: xxxxx xxxxx xxxxxx 0.03 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.08

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.2
Control Del:xxxxx xxxxx xxxxxx 8.3 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 9.7
LOS by Move: * * * A * * * * * * * * * * * A
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 8.3 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: * * * A * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx 9.7
ApproachLOS: * * * * * A

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.388
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.2
Optimal Cycle: 39 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Split Phase, Split Phase, Split Phase, Split Phase), Rights (Include, Include, Ignore, Include), Lanes (0 1 1 0 0, 0 0 0 1 0, 1 0 0 0 1, 0 0 0 0 0)

Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 194 416 0 0 290 7 17 0 508 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: 194 416 0 0 290 7 17 0 508 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 194 416 0 0 290 7 17 0 508 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 194 416 0 0 290 7 17 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 194 416 0 0 290 7 17 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
FinalVolume: 194 416 0 0 290 7 17 0 0 0 0 0

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.93 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00
Lanes: 0.64 1.36 0.00 0.00 0.98 0.02 1.00 0.00 1.00 0.00 0.00 0.00
Final Sat.: 1130 2423 0 0 1850 45 1805 0 1900 0 0 0

Capacity Analysis Module:
Vol/Sat: 0.17 0.17 0.00 0.00 0.16 0.16 0.01 0.00 0.00 0.00 0.00 0.00
Crit Moves: **** *
Green/Cycle: 0.38 0.38 0.00 0.00 0.35 0.35 0.14 0.00 0.00 0.00 0.00 0.00
Volume/Cap: 0.45 0.45 0.00 0.00 0.45 0.45 0.07 0.00 0.00 0.00 0.00 0.00
Delay/Veh: 16.4 16.4 0.0 0.0 18.2 18.2 26.1 0.0 0.0 0.0 0.0 0.0
User DelAdj: 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: 16.4 16.4 0.0 0.0 18.2 18.2 26.1 0.0 0.0 0.0 0.0 0.0
LOS by Move: B B A A B B C A A A A A
HCM2k95thQ: 11 11 0 0 10 10 1 0 0 0 0 0

Capacity Analysis Module:
Vol/Sat: 0.17 0.17 0.00 0.00 0.16 0.16 0.01 0.00 0.00 0.00 0.00 0.00
Crit Moves: **** *
Green/Cycle: 0.38 0.38 0.00 0.00 0.35 0.35 0.14 0.00 0.00 0.00 0.00 0.00
Volume/Cap: 0.45 0.45 0.00 0.00 0.45 0.45 0.07 0.00 0.00 0.00 0.00 0.00
Delay/Veh: 16.4 16.4 0.0 0.0 18.2 18.2 26.1 0.0 0.0 0.0 0.0 0.0
User DelAdj: 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: 16.4 16.4 0.0 0.0 18.2 18.2 26.1 0.0 0.0 0.0 0.0 0.0
LOS by Move: B B A A B B C A A A A A
HCM2k95thQ: 11 11 0 0 10 10 1 0 0 0 0 0

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy
Cycle (sec): 70 Critical Vol./Cap.(X): 0.327
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.4
Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 39 565 0 0 753 34 42 0 93 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

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.84 0.84 0.95 0.95 0.94 0.94 0.89 1.00 0.89 1.00 1.00 1.00

Capacity Analysis Module:
Vol/Sat: 0.19 0.19 0.00 0.00 0.22 0.22 0.08 0.00 0.08 0.00 0.00 0.00
Crit Moves: ****
Green/Cycle: 0.67 0.67 0.00 0.00 0.67 0.67 0.24 0.00 0.24 0.00 0.00 0.00

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.217
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.0
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 0 221 40 22 246 0 0 0 0 0 50 0 30
Growth Adj: 1.03 1.03 1.03 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.98 0.98 0.97 0.97 1.00 1.00 1.00 1.00 0.92 1.00 0.92

Capacity Analysis Module:
Vol/Sat: 0.00 0.14 0.14 0.15 0.15 0.00 0.00 0.00 0.00 0.05 0.00 0.05
Crit Moves: ****
Green/Cycle: 0.00 0.67 0.67 0.67 0.67 0.00 0.00 0.00 0.00 0.21 0.00 0.21

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.518
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.2
Optimal Cycle: 34 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.353
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.1
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.246
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 10.9
Optimal Cycle: 31 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: Split Phase Split Phase Protected Protected
Rights: Include Ovl Include Ovl
Min. Green: 5 5 5 5 5 9 4 5 5 4 5 9
Lanes: 1 1 0 0 1 1 1 1 0 1 2 0 1 1 0 2 0 2 0 1
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 30 1 17 39 8 51 24 564 24 31 639 20
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: 30 1 17 39 8 51 24 564 24 31 639 20
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 30 1 17 39 8 51 24 564 24 31 639 20
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: 30 1 17 39 8 51 24 564 24 31 639 20
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 30 1 17 39 8 51 24 564 24 31 639 20
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
FinalVolume: 30 1 17 39 8 51 24 564 24 31 639 20
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.95 0.85 0.91 0.91 0.85 0.92 0.94 0.94 0.92 0.95 0.85
Lanes: 1.94 0.06 1.00 2.00 1.00 1.00 2.00 1.92 0.08 2.00 2.00 1.00
Final Sat.: 3508 117 1615 3466 1733 1615 3502 3442 146 3502 3610 1615
Capacity Analysis Module:
Vol/Sat: 0.01 0.01 0.01 0.01 0.00 0.03 0.01 0.16 0.16 0.01 0.18 0.01
Crit Moves: ****
Green/Cycle: 0.07 0.07 0.07 0.07 0.07 0.13 0.06 0.51 0.51 0.18 0.63 0.70
Volume/Cap: 0.12 0.12 0.15 0.16 0.06 0.25 0.12 0.32 0.32 0.05 0.28 0.02
Delay/Veh: 30.6 30.6 31.1 30.8 30.4 28.1 31.6 10.2 10.2 23.9 5.9 3.2
User DelAdj: 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: 30.6 30.6 31.1 30.8 30.4 28.1 31.6 10.2 10.2 23.9 5.9 3.2
LOS by Move: C C C C C C B B C A A
HCM2k95thQ: 1 1 1 1 0 2 1 8 8 1 7 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road
Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.5]
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 Yield Sign Uncontrolled Uncontrolled
Rights: Include Include Include Ignore
Lanes: 0 0 0 0 0 0 0 0 1 1 0 2 0 0 0 0 0 1 1 0
Volume Module: >> Count Date: 16 Apr 2005 << except thru movements
Base Vol: 0 0 0 0 0 40 0 741 0 0 822 13
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 0 0 0 0 40 0 741 0 0 822 13
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 0 0 40 0 741 0 0 822 13
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00
PHF Volume: 0 0 0 0 0 40 0 741 0 0 822 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 0 0 0 0 40 0 741 0 0 822 0
Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxx xxxxx xxxxx 6.9 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
FollowUpTim:xxxxx xxxxx xxxxx xxxxx xxxxx 3.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxx xxxxx xxxxx 411 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Potent Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx 596 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Move Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx 596 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Volume/Cap: xxxxx xxxxx xxxxx xxxxx xxxxx 0.07 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx 0.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del:xxxxxx xxxxx xxxxx xxxxx xxxxx 11.5 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: * * * * * B * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx
SharedQueue:xxxxxx xxxxx xxxxx
Shrd ConDel:xxxxxx xxxxx xxxxx
Shared LOS: * * * * * * * * * * * * * * *
ApproachDel: xxxxxxx 11.5 xxxxxxx xxxxxxx
ApproachLOS: * B * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.338
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 6.5
Optimal Cycle: 26 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.

Table with 12 columns: >> Count Date: 2 Apr 2005 <<. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

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, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: C[21.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module: Table with 12 columns. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module: Table with 12 columns. Rows include Critical Gp, FollowUpTim.

Capacity Module: Table with 12 columns. Rows include Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module: Table with 12 columns. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.624
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 24.2
Optimal Cycle: 48 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial/user/PHF/MLF/Final.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.933
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 33.4
Optimal Cycle: 104 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial/user/PHF/MLF/Final.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.727
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 20.0
Optimal Cycle: 52 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.707
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.9
Optimal Cycle: 48 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Baseline Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 0.5 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 12 columns representing different traffic movements and 12 rows of volume-related metrics like Base Vol, Growth Adj, etc.

Critical Gap Module:

Table with 12 columns and 2 rows showing critical gap and follow-up time values.

Capacity Module:

Table with 12 columns and 4 rows showing capacity-related metrics like Cnflct Vol, Potent Cap., etc.

Level Of Service Module:

Table with 12 columns and 10 rows showing level of service metrics like 2Way95thQ, Control Del, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.406
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 55 184 39 75 208 38 24 470 45 74 728 78
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: 55 184 39 75 208 38 24 470 45 74 728 78
Added Vol: 13 10 5 0 9 0 0 0 12 4 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 68 194 44 75 217 38 24 470 57 78 728 78
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: 68 194 44 75 217 38 24 470 57 78 728 78
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 68 194 44 75 217 38 24 470 57 78 728 78
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
FinalVolume: 68 194 44 75 217 38 24 470 57 78 728 78
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.49 1.00 0.85 0.53 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.78 0.22 1.00 1.81 0.19
Final Sat.: 925 1900 1615 998 1900 1615 1805 3168 384 1805 3212 344
Capacity Analysis Module:
Vol/Sat: 0.07 0.10 0.03 0.08 0.11 0.02 0.01 0.15 0.15 0.04 0.23 0.23
Crit Moves: ****
Green/Cycle: 0.27 0.27 0.27 0.27 0.27 0.27 0.06 0.50 0.50 0.10 0.54 0.54
Volume/Cap: 0.27 0.37 0.10 0.28 0.42 0.09 0.23 0.30 0.30 0.43 0.42 0.42
Delay/Veh: 20.6 21.1 19.1 20.6 21.4 19.0 32.7 10.4 10.4 31.3 9.7 9.7
User DelAdj: 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: 20.6 21.1 19.1 20.6 21.4 19.0 32.7 10.4 10.4 31.3 9.7 9.7
LOS by Move: C C B C C B C B B C A A
HCM2k95thQ: 3 7 2 3 8 1 2 7 7 4 11 11
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.538
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 20.3
Optimal Cycle: 33 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:0745

Table with 12 columns representing traffic volumes and 12 rows representing various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.465
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.8
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows representing various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 0.612
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 12.4
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Adjustment, Lanes, Final Sat., and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[12.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns for critical gap and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns for capacity and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service and 12 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.588
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 16.9
Optimal Cycle: 39 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.603
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.2
Optimal Cycle: 32 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.472
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for movement counts and 12 columns for volume module data. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for adjustment factors and 12 columns for final saturation values.

Capacity Analysis Module table with 12 columns for delay and LOS by approach, and 12 columns for LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[12.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for movement counts and 12 columns for volume module data. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for critical gap and follow-up time values.

Capacity Module table with 12 columns for conflict volume, potential capacity, move capacity, and volume/capacity.

Level Of Service Module table with 12 columns for delay and LOS by approach, and 12 columns for LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy
Average Delay (sec/veh): 3.8 Worst Case Level Of Service: B[10.2]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 0 275 13 10 131 0 0 0 0 6 0 18
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: 0 275 13 10 131 0 0 0 0 6 0 18
Added Vol: 1 0 0 0 0 0 0 38 0 0 19 0
Diverted Tr: 0 -163 0 0 -118 0 0 0 0 -5 0 5
Initial Fut: 1 112 13 10 13 0 0 38 0 1 19 23
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: 1 112 13 10 13 0 0 38 0 1 19 23
Reduct Vol: 0 0 0 0 0 0 0 0 5 0 0 0
FinalVolume: 1 112 13 10 13 0 0 38 0 1 19 23
Critical Gap Module:
Critical Gap: 4.1 xxx xxx 4.1 xxx xxx xxx 6.5 xxx 7.1 6.5 6.2
FollowUpTim: 2.2 xxx xxx 2.2 xxx xxx xxx 4.0 xxx 3.5 4.0 3.3
Capacity Module:
Conflict Vol: 13 xxx xxx 125 xxx xxx xxx 160 xxx 173 154 119
Potent Cap.: 1619 xxx xxx 1474 xxx xxx xxx 736 xxx 795 742 939
Move Cap.: 1619 xxx xxx 1474 xxx xxx xxx 730 xxx 759 736 939
Volume/Cap: 0.00 xxx xxx 0.01 xxx xxx xxx 0.05 xxx 0.00 0.03 0.02
Level Of Service Module:
2Way95thQ: 0.0 xxx xxx 0.0 xxx xxx xxx 0.2 xxx xxx xxx xxx
Control Del: 7.2 xxx xxx 7.5 xxx xxx xxx 10.2 xxx xxx xxx xxx
LOS by Move: A * * A * * B * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxx xxx xxx xxx xxx xxx xxx xxx 833 xxx
SharedQueue: xxx xxx xxx 0.0 xxx xxx xxx xxx xxx 0.2 xxx
Shrd ConDel: xxx xxx xxx 7.5 xxx xxx xxx xxx xxx 9.6 xxx
Shared LOS: * * * A * * * * * A *
ApproachDel: xxx xxx xxx 10.2 9.6
ApproachLOS: * * B A
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.534
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.7
Optimal Cycle: 27 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 10 0 0 10 0 0 0 0 4 0 10
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 523 143 25 188 0 0 0 0 43 0 29
Growth Adj: 1.14 1.14 1.14 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 596 163 25 188 0 0 0 0 43 0 29
Added Vol: 0 33 0 0 33 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 629 163 25 221 0 0 0 0 43 0 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: 0 629 163 25 221 0 0 0 0 43 0 29
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 629 163 25 221 0 0 0 0 43 0 29
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
FinalVolume: 0 629 163 25 221 0 0 0 0 43 0 29
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.97 0.97 0.92 0.92 1.00 1.00 1.00 1.00 0.92 1.00 0.92
Lanes: 0.00 0.79 0.21 0.10 0.90 0.00 0.00 0.00 0.00 0.60 0.00 0.40
Final Sat.: 0 1467 380 177 1569 0 0 0 0 1042 0 703
Capacity Analysis Module:
Vol/Sat: 0.00 0.43 0.43 0.14 0.14 0.00 0.00 0.00 0.00 0.04 0.00 0.04
Crit Moves: ****
Green/Cycle: 0.00 0.68 0.68 0.68 0.68 0.00 0.00 0.00 0.00 0.20 0.00 0.20
Volume/Cap: 0.00 0.63 0.63 0.21 0.21 0.00 0.00 0.00 0.00 0.21 0.00 0.21
Delay/Veh: 0.0 5.5 5.5 3.1 3.1 0.0 0.0 0.0 0.0 17.0 0.0 17.0
User DelAdj: 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 5.5 5.5 3.1 3.1 0.0 0.0 0.0 0.0 17.0 0.0 17.0
LOS by Move: A A A A A A A A A B A B
HCM2k95thQ: 0 15 15 3 3 0 0 0 0 2 0 2
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: A[9.0]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various volume adjustments like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 3 columns for gap metrics and 3 rows for Critical Gp, FollowUpTim, and Capacity Module.

Capacity Module:

Table with 3 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: A[9.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various volume adjustments like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 3 columns for gap metrics and 3 rows for Critical Gp, FollowUpTim, and Capacity Module.

Capacity Module:

Table with 3 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.808
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.0
Optimal Cycle: 63 Level Of Service: C

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Protected and Permitted.

Volume Module: >> Count Date: 18 Sep 2007 << 0715. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.459
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.1
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Permitted.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.676
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 21.4
Optimal Cycle: 52 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0715. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.806
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.9
Optimal Cycle: 62 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Apr 2005 << except thru movements. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[12.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 10 columns (Count, Date, 19 Sep 2007, << 0715) and 10 rows (Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume).

Critical Gap Module: Table with 10 columns (Critical Gp, FollowUpTim) and 10 rows (6.8, 6.5, 6.9, 4.1, 3.5, 4.0, 3.3, 2.2, 2.2, 2.2).

Capacity Module: Table with 10 columns (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) and 10 rows (2063, 2651, 727, 1453, 48, 23, 371, 47, 23, 371, 0.00, 0.00, 0.00, 0.03).

Level Of Service Module: Table with 10 columns (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS) and 10 rows (0.1, 12.9, B, LT-LTR-RT, 0, 0.03, 0.03, *, *).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: D[34.6]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 10 columns (Count, Date, 19 Sep 2007, << 0715) and 10 rows (Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume).

Critical Gap Module: Table with 10 columns (Critical Gp, FollowUpTim) and 10 rows (6.8, 6.5, 6.9, 4.1, 3.5, 4.0, 3.3, 2.2, 2.2, 2.2).

Capacity Module: Table with 10 columns (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) and 10 rows (2053, 2630, 722, 1444, 49, 24, 374, 48, 23, 374, 0.10, 0.00, 0.04, 0.04).

Level Of Service Module: Table with 10 columns (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS) and 10 rows (0.1, 12.8, B, LT-LTR-RT, 143, 0.5, 34.6, D, *).

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Baseline AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.825
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 29.8
Optimal Cycle: 74 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for various approaches and movements.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Baseline AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.900
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 30.2
Optimal Cycle: 89 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for various approaches and movements.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.767
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.2
Optimal Cycle: 57 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.699
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.7
Optimal Cycle: 48 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0730. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.259
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.3
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 0 1 0 0 1 0 0
Volume Module:
Base Vol: 0 163 0 23 118 0 0 0 0 5 0 130
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: 0 163 0 23 118 0 0 0 0 5 0 130
Added Vol: 1 58 13 2 81 1 9 22 5 12 5 12
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 1 221 13 25 199 1 9 22 5 17 5 142
User Adj: 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10
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: 1 243 14 28 219 1 10 24 6 19 6 156
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 1 243 14 28 219 1 10 24 6 19 6 156
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
FinalVolume: 1 243 14 28 219 1 10 24 6 19 6 156
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.60 1.00 0.85 0.58 1.00 0.85 0.65 0.97 0.97 0.74 0.86 0.86
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.81 0.19 1.00 0.03 0.97
Final Sat.: 1144 1900 1615 1098 1900 1615 1229 1505 342 1412 55 1569
Capacity Analysis Module:
Vol/Sat: 0.00 0.13 0.01 0.03 0.12 0.00 0.01 0.02 0.02 0.01 0.10 0.10
Crit Moves: ****
Green/Cycle: 0.49 0.49 0.49 0.49 0.49 0.49 0.39 0.39 0.39 0.39 0.39 0.39
Volume/Cap: 0.00 0.26 0.02 0.05 0.23 0.00 0.02 0.04 0.04 0.03 0.26 0.26
Delay/Veh: 6.4 7.5 6.4 6.6 7.3 6.4 9.5 9.6 9.6 9.6 10.7 10.7
User DelAdj: 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: 6.4 7.5 6.4 6.6 7.3 6.4 9.5 9.6 9.6 9.6 10.7 10.7
LOS by Move: A A A A A A A A A A B B
HCM2k95thQ: 0 5 0 1 4 0 0 1 1 0 4 4
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[10.5]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 163 0 0 123 0 0 0 0 0 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: 0 163 0 0 123 0 0 0 0 0 0 0 0
Added Vol: 3 66 0 0 98 1 6 0 10 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 3 229 0 0 221 1 6 0 10 0 0 0 0
User Adj: 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10
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: 3 252 0 0 243 1 7 0 11 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 3 252 0 0 243 1 7 0 11 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 244 xxxx xxxxx xxxx xxxx xxxxx 502 502 244 508 503 252
Potent Cap.: 1334 xxxx xxxxx xxxx xxxx xxxxx 532 474 800 479 474 792
Move Cap.: 1334 xxxx xxxxx xxxx xxxx xxxxx 531 473 800 471 473 792
Volume/Cap: 0.00 xxxx xxxxx xxxx xxxx xxxxx 0.01 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 673 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 10.5 xxxxx xxxxx xxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxx xxxxxx 10.5 xxxxxx
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 4.0 Worst Case Level Of Service: C[17.0]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns and 12 rows showing traffic volume data for various approaches and movements.

Critical Gap Module:

Table with 4 columns and 2 rows showing critical gap and follow-up time data.

Capacity Module:

Table with 12 columns and 5 rows showing capacity and volume/capacity data.

Level Of Service Module:

Table with 12 columns and 10 rows showing level of service and delay data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level Of Service Computation Report

FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 4.1 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns and 12 rows showing traffic volume data for various approaches and movements.

PCE Module:

Table with 12 columns and 5 rows showing PCE module data.

Delay Module: >> Time Period: 0.25 hours <<

Table with 4 columns and 7 rows showing delay module data.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.264
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.7
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: C[16.6]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for Critical Gp and FollowUpTim.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 FranklinBl/5th Av (South)

Average Delay (sec/veh): 0.5 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:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module: >> Count Date: 29 Mar 2005 <<

Base Vol:	10	660	0	0	225	6	6	0	14	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:	10	660	0	0	225	6	6	0	14	0	0	0
Added Vol:	0	22	0	0	15	18	10	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	682	0	0	240	24	16	0	14	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:	10	682	0	0	240	24	16	0	14	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	10	682	0	0	240	24	16	0	14	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	264	xxxx	xxxxx	xxxx	xxxx	xxxxx	954	954	252	xxxx	xxxx	xxxxx
Potent Cap.:	1312	xxxx	xxxxx	xxxx	xxxx	xxxxx	289	261	792	xxxx	xxxx	xxxxx
Move Cap.:	1312	xxxx	xxxxx	xxxx	xxxx	xxxxx	288	259	792	xxxx	xxxx	xxxxx
Volume/Cap:	0.01	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.06	0.00	0.02	xxxx	xxxx	xxxxx

Level Of Service Module:

2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	409	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	14.5	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			14.5			xxxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.630
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.3
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 56 162 71 158 409 36 35 790 101 101 905 80
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: 56 162 71 158 409 36 35 790 101 101 905 80
Added Vol: 23 17 8 0 22 0 0 0 30 10 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 79 179 79 158 431 36 35 790 131 111 905 80
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: 79 179 79 158 431 36 35 790 131 111 905 80
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 79 179 79 158 431 36 35 790 131 111 905 80
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
FinalVolume: 79 179 79 158 431 36 35 790 131 111 905 80
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.28 1.00 0.85 0.59 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.72 0.28 1.00 1.84 0.16
Final Sat.: 542 1900 1615 1117 1900 1615 1805 3031 503 1805 3277 290
Capacity Analysis Module:
Vol/Sat: 0.15 0.09 0.05 0.14 0.23 0.02 0.02 0.26 0.26 0.06 0.28 0.28
Crit Moves: **** ****
Green/Cycle: 0.36 0.36 0.36 0.36 0.36 0.36 0.09 0.41 0.41 0.10 0.43 0.43
Volume/Cap: 0.41 0.26 0.14 0.39 0.63 0.06 0.23 0.63 0.63 0.63 0.65 0.65
Delay/Veh: 18.2 16.0 15.2 17.3 20.4 14.7 30.6 17.2 17.2 37.5 16.9 16.9
User DelAdj: 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: 18.2 16.0 15.2 17.3 20.4 14.7 30.6 17.2 17.2 37.5 16.9 16.9
LOS by Move: B B B B C B C B B D B B
HCM2k95thQ: 4 6 2 6 16 1 2 17 17 7 18 18
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.932
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 41.4
Optimal Cycle: 98 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:1700

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.537
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.5
Optimal Cycle: 28 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 0.847
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Table with 12 columns for volume and saturation flow. Rows include Volume Module and Saturation Flow Module.

Table with 12 columns for capacity analysis. Rows include Capacity Analysis Module.

Table with 12 columns for delay and LOS. Rows include Delay/Veh, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: B[10.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Table with 12 columns for volume and saturation flow. Rows include Volume Module and Saturation Flow Module.

Table with 12 columns for capacity analysis. Rows include Capacity Analysis Module.

Table with 12 columns for delay and LOS. Rows include Delay/Veh, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

Table with 12 columns for delay and LOS. Rows include Delay/Veh, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.635
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.1
Optimal Cycle: 42 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.577
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.3
Optimal Cycle: 30 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.811
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 18.7
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for movement counts and 12 columns for volume module data. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for movement counts and 12 columns for saturation flow data.

Capacity Analysis Module table with 12 columns for movement counts and 12 columns for capacity analysis data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: C[16.9]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for movement counts and 12 columns for volume module data. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for movement counts and 12 columns for critical gap data.

Capacity Module table with 12 columns for movement counts and 12 columns for capacity module data.

Level of Service Module table with 12 columns for movement counts and 12 columns for level of service data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 6.2 Worst Case Level Of Service: B[10.1]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0-1-0).

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.597
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.6
Optimal Cycle: 30 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Permitted, Split Phase), Rights (Include), and Lanes (0-1-0).

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow metrics: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: A[8.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 3 columns for gap metrics and 3 rows for Critical Gap, FollowUpTim, and Capacity.

Capacity Module:

Table with 3 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: A[8.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 3 columns for gap metrics and 3 rows for Critical Gap, FollowUpTim, and Capacity.

Capacity Module:

Table with 3 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Baseline PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.749
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.6
Optimal Cycle: 54 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Baseline PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.532
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.2
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.860
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 27.5
Optimal Cycle: 79 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700. Table with 12 columns for volume and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 1.200
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 86.9
Optimal Cycle: 180 Level Of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements. Table with 12 columns for volume and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[13.8]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with columns for Critical Gp and FollowUpTim.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[21.7]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with columns for Critical Gp and FollowUpTim.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Baseline PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.825
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 29.5
Optimal Cycle: 74 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for different approaches and movements.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Baseline PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.068
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 57.8
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for different approaches and movements.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Baseline PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.781
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.6
Optimal Cycle: 59 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for various capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Baseline PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.840
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.7
Optimal Cycle: 69 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1630. Table with 12 columns for volume and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for various capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.428
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.9
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0 0
Volume Module:
Base Vol: 0 71 0 56 408 0 0 0 0 14 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 71 0 56 408 0 0 0 0 14 0 0 0
Added Vol: 4 164 22 4 196 3 2 9 1 30 15 3 3
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 4 235 22 60 604 3 2 9 1 44 15 3 3
User Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15
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: 5 270 25 69 695 3 2 10 1 51 17 3 3
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 5 270 25 69 695 3 2 10 1 51 17 3 3
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
FinalVolume: 5 270 25 69 695 3 2 10 1 51 17 3 3
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.31 1.00 0.85 0.59 1.00 0.85 0.75 0.99 0.99 0.76 0.98 0.98
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.90 0.10 1.00 0.83 0.17
Final Sat.: 593 1900 1615 1115 1900 1615 1427 1684 187 1442 1544 309
Capacity Analysis Module:
Vol/Sat: 0.01 0.14 0.02 0.06 0.37 0.00 0.00 0.01 0.01 0.04 0.01 0.01
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.01 0.21 0.02 0.09 0.54 0.00 0.01 0.03 0.03 0.18 0.06 0.06
Delay/Veh: 2.6 3.1 2.6 2.8 4.5 2.6 16.0 16.1 16.1 16.9 16.2 16.2
User DelAdj: 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: 2.6 3.1 2.6 2.8 4.5 2.6 16.0 16.1 16.1 16.9 16.2 16.2
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 3 0 1 12 0 0 0 0 2 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.1 Worst Case Level Of Service: C[15.2]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1! 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 0 71 0 0 422 0 0 0 0 0 0 0 0 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 71 0 0 422 0 0 0 0 0 0 0 0 0 0 0
Added Vol: 8 189 0 0 224 3 1 0 3 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 260 0 0 646 3 1 0 3 0 0 0 0 0 0 0
User Adj: 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15
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
PHF Volume: 9 299 0 0 743 3 1 0 3 0 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 299 0 0 743 3 1 0 3 0 0 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxx xxxx xxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxx xxxx xxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 746 xxxx xxxxx xxxx xxxx xxxxx 1062 1062 745 1064 1064 299
Potent Cap.: 871 xxxx xxxxx xxxx xxxx xxxxx 250 225 418 203 225 745
Move Cap.: 871 xxxx xxxxx xxxx xxxx xxxxx 248 223 418 199 222 745
Volume/Cap: 0.01 xxxx xxxx xxxx xxxx 0.00 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 9.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 356 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.0 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 9.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 15.2 xxxxx xxxxx xxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxx xxxxxx 15.2 xxxxxx
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 28.9 Worst Case Level Of Service: F[164.4]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), and Lanes (0, 1, 0, 0).

Volume Module:

Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each approach and movement.

Critical Gap Module:

Table showing Critical Gap and FollowUpTim values for each approach and movement.

Capacity Module:

Table showing Capacity data including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for each approach and movement.

Level Of Service Module:

Table showing Level Of Service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, Approach Del, and Approach LOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level Of Service Computation Report

FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 7.6 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L-T-R), Control (Yield Sign), and Lanes (1).

Volume Module:

Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach and movement.

PCE Module:

Table showing PCE Module data including AutoPCE, TruckPCE, ComboPCE, BicyclePCE, and AdjVolume for each approach and movement.

Delay Module: >> Time Period: 0.25 hours <<

Table showing Delay Module data including CircVolume, MaxVolume, PedVolume, AdjMaxVol, ApproachVol, ApproachDel, and Queue for each approach and movement.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 1.058
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 26.8
Optimal Cycle: 180 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 7.2 Worst Case Level Of Service: F[75.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for Critical Gp and FollowUpTim.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 FranklinBl/5th Av (South)

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: C[21.9]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	1	0	0	1	0	0	0

Volume Module: >> Count Date: 29 Mar 2005 <<

Base Vol:	3	333	0	0	655	23	2	0	12	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:	3	333	0	0	655	23	2	0	12	0	0	0
Added Vol:	0	24	0	0	37	43	40	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	357	0	0	692	66	42	0	12	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:	3	357	0	0	692	66	42	0	12	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	3	357	0	0	692	66	42	0	12	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxx	xxxx	xxxx	xxxx	6.4	6.5	6.2	xxxx	xxxx	xxxx
FollowUpTim:	2.2	xxxx	xxxx	xxxx	xxxx	xxxx	3.5	4.0	3.3	xxxx	xxxx	xxxx

Capacity Module:

Cnflct Vol:	758	xxxx	xxxx	xxxx	xxxx	xxxx	1088	1088	725	xxxx	xxxx	xxxx
Potent Cap.:	862	xxxx	xxxx	xxxx	xxxx	xxxx	241	218	428	xxxx	xxxx	xxxx
Move Cap.:	862	xxxx	xxxx	xxxx	xxxx	xxxx	240	217	428	xxxx	xxxx	xxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.17	0.00	0.03	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	0.0	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx			
Control Del:	9.2	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx			
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	266	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
SharedQueue:	0.0	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.7	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Shrd ConDel:	9.2	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	21.9	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			21.9			xxxxxx					
ApproachLOS:	*			*			C			*			*		

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.347
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 11.7
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 37 80 29 49 100 38 25 612 44 41 713 80
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 80 29 49 100 38 25 612 44 41 713 80
Added Vol: 26 19 9 0 24 0 0 0 0 33 11 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 63 99 38 49 124 38 25 612 77 52 713 80
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: 63 99 38 49 124 38 25 612 77 52 713 80
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 63 99 38 49 124 38 25 612 77 52 713 80
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
FinalVolume: 63 99 38 49 124 38 25 612 77 52 713 80
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.61 1.00 0.85 0.67 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.78 0.22 1.00 1.80 0.20
Final Sat.: 1157 1900 1615 1279 1900 1615 1805 3152 397 1805 3197 359
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.05 0.05 0.02 0.04 0.07 0.02 0.01 0.19 0.19 0.03 0.22 0.22
Crit Moves: **** *
Green/Cycle: 0.18 0.18 0.18 0.18 0.18 0.18 0.06 0.57 0.57 0.11 0.63 0.63
Volume/Cap: 0.30 0.28 0.13 0.21 0.35 0.13 0.24 0.34 0.34 0.25 0.35 0.35
Delay/Veh: 25.4 25.0 24.0 24.7 25.5 24.0 32.8 8.0 8.0 28.9 6.3 6.3
User DelAdj: 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: 25.4 25.0 24.0 24.7 25.5 24.0 32.8 8.0 8.0 28.9 6.3 6.3
LOS by Move: C C C C C C C A A C A A
HCM2k95thQ: 3 4 2 2 5 2 2 8 8 3 9 9

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.489
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 17.3
Optimal Cycle: 30 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.291
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.9
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: B[10.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include, Include, Include), Lanes (0 0 1 1 0, 0 1 0 0 0, 0 0 0 0 0, 0 0 0 0 1)

Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 0 406 37 33 321 0 0 0 0 0 0 0 54
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.17 1.17 1.17
Initial Bse: 0 406 37 33 321 0 0 0 0 0 0 63
Added Vol: 0 0 69 50 5 0 0 0 0 0 0 27
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 406 106 83 326 0 0 0 0 0 0 90
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
PHF Volume: 0 406 106 83 326 0 0 0 0 0 0 90
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 406 106 83 326 0 0 0 0 0 0 90

Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 6.2
FollowUpTim:xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 3.3

Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 512 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 256
Potent Cap.: xxxxx xxxxx xxxxxx 1064 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 788
Move Cap.: xxxxx xxxxx xxxxxx 1064 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 788
Volume/Cap: xxxxx xxxxx xxxxxx 0.08 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.11

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.3 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.4
Control Del:xxxxxx xxxxx xxxxxx 8.7 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 10.2
LOS by Move: * * * A * * * * * * * * * * B
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.3 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 8.7 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: * * * A * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx xxxxxx 10.2
ApproachLOS: * * * * * B

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.429
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.8
Optimal Cycle: 39 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Split Phase, Split Phase, Split Phase, Split Phase), Rights (Include, Include, Ignore, Include), Lanes (0 1 1 0 0, 0 0 0 1 0, 1 0 0 0 1, 0 0 0 0 0)

Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 194 416 0 0 290 7 17 0 508 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: 194 416 0 0 290 7 17 0 508 0 0 0
Added Vol: 0 16 0 0 5 0 53 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 194 432 0 0 295 7 70 0 508 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 194 432 0 0 295 7 70 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 194 432 0 0 295 7 70 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
FinalVolume: 194 432 0 0 295 7 70 0 0 0 0 0

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.94 0.94 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00
Lanes: 0.62 1.38 0.00 0.00 0.98 0.02 1.00 0.00 1.00 0.00 0.00 0.00
Final Sat.: 1102 2454 0 0 1850 44 1805 0 1900 0 0 0

Capacity Analysis Module:
Vol/Sat: 0.18 0.18 0.00 0.00 0.16 0.16 0.04 0.00 0.00 0.00 0.00 0.00
Crit Moves: **** *
Green/Cycle: 0.38 0.38 0.00 0.00 0.35 0.35 0.14 0.00 0.00 0.00 0.00 0.00
Volume/Cap: 0.46 0.46 0.00 0.00 0.46 0.46 0.27 0.00 0.00 0.00 0.00 0.00
Delay/Veh: 16.5 16.5 0.0 0.0 18.3 18.3 27.3 0.0 0.0 0.0 0.0 0.0
User DelAdj: 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: 16.5 16.5 0.0 0.0 18.3 18.3 27.3 0.0 0.0 0.0 0.0 0.0
LOS by Move: B B A A B B C A A A A A
HCM2k95thQ: 11 11 0 0 11 11 3 0 0 0 0 0

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.338
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.0
Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.270
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.7
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.548
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.8
Optimal Cycle: 36 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 0 598 433 264 656 0 0 0 0 477 0 402
Growth Adj: 1.00 1.00 1.00 1.02 1.02 1.02 1.00 1.00 1.00 1.00 1.00 1.00

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.95 1.00 0.95 0.95 1.00 1.00 1.00 1.00 0.92 1.00 0.85

Capacity Analysis Module:
Vol/Sat: 0.00 0.17 0.00 0.15 0.19 0.00 0.00 0.00 0.00 0.16 0.00 0.25
Crit Moves: ****
Green/Cycle: 0.00 0.30 0.00 0.27 0.57 0.00 0.00 0.00 0.00 0.30 0.00 0.57

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.384
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.1
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 22 0 20 58 0 40 56 713 11 17 813 95
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.17 1.17 1.17 1.00 1.00 1.00

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.82 1.00 0.82 0.77 1.00 0.77 0.26 0.95 0.95 0.28 0.94 0.94

Capacity Analysis Module:
Vol/Sat: 0.05 0.00 0.05 0.07 0.00 0.07 0.13 0.27 0.27 0.08 0.28 0.28
Crit Moves: ****
Green/Cycle: 0.18 0.00 0.18 0.18 0.00 0.18 0.74 0.74 0.74 0.74 0.74 0.74

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.288
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 14.8
Optimal Cycle: 31 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.911
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 32.6
Optimal Cycle: 90 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: C[22.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns for traffic volumes and 11 rows for various volume metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: F[51.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns for traffic volumes and 11 rows for various volume metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd
Cycle (sec): 75 Critical Vol./Cap.(X): 0.742
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 24.5
Optimal Cycle: 61 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 54 158 206 105 191 60 51 535 135 222 676 98
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.13 1.13 1.13 1.02 1.02 1.02

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.87 0.87 0.95 0.92 0.92 0.95 0.91 0.91 0.95 0.94 0.94

Capacity Analysis Module:
Vol/Sat: 0.04 0.10 0.12 0.06 0.07 0.07 0.03 0.31 0.31 0.13 0.33 0.33
Crit Moves: ****
Green/Cycle: 0.11 0.17 0.17 0.09 0.15 0.15 0.13 0.42 0.42 0.17 0.45 0.45

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd
Cycle (sec): 75 Critical Vol./Cap.(X): 1.120
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 68.0
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 0 0 47 377 31 571 0 757 116 183 487 0
Growth Adj: 1.00 1.00 1.00 1.14 1.14 1.14 1.12 1.12 1.32 1.32 1.00 1.00

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 0.87 0.96 0.96 0.85 1.00 0.93 0.93 0.95 0.95 1.00

Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.03 0.13 0.13 0.51 0.00 0.34 0.34 0.13 0.20 0.00
Crit Moves: ****
Green/Cycle: 0.00 0.00 0.12 0.46 0.46 0.46 0.00 0.30 0.30 0.12 0.42 0.00

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.874
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 27.0
Optimal Cycle: 81 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and saturation flow data.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.732
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.0
Optimal Cycle: 51 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and saturation flow data.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.210
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.6
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 0 1 0 0
Volume Module:
Base Vol: 0 49 0 0 78 0 0 0 0 0 0 0 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 49 0 0 78 0 0 0 0 0 0 0 0 0 0
Added Vol: 3 178 23 3 224 2 4 14 2 31 13 6
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 3 227 23 3 302 2 4 14 2 31 13 6
User Adj: 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09
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: 3 247 25 3 329 2 4 15 2 34 14 7
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 3 247 25 3 329 2 4 15 2 34 14 7
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
FinalVolume: 3 247 25 3 329 2 4 15 2 34 14 7
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.55 1.00 0.85 0.60 1.00 0.85 0.75 0.98 0.98 0.75 0.95 0.95
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.87 0.13 1.00 0.68 0.32
Final Sat.: 1041 1900 1615 1138 1900 1615 1427 1631 233 1433 1239 572
Capacity Analysis Module:
Vol/Sat: 0.00 0.13 0.02 0.00 0.17 0.00 0.00 0.01 0.01 0.02 0.01 0.01
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.00 0.19 0.02 0.00 0.25 0.00 0.02 0.05 0.05 0.12 0.06 0.06
Delay/Veh: 2.6 3.0 2.6 2.6 3.2 2.6 16.1 16.2 16.2 16.6 16.3 16.3
User DelAdj: 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: 2.6 3.0 2.6 2.6 3.2 2.6 16.1 16.2 16.2 16.6 16.3 16.3
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 3 0 0 4 0 0 1 1 1 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.6]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0
Volume Module:
Base Vol: 0 49 0 0 78 0 0 0 0 0 0 0 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 49 0 0 78 0 0 0 0 0 0 0 0 0 0
Added Vol: 8 200 0 0 255 3 4 0 6 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 249 0 0 333 3 4 0 6 0 0 0 0
User Adj: 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09
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: 9 271 0 0 363 3 4 0 7 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 271 0 0 363 3 4 0 7 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 366 xxxx xxxxx xxxx xxxx xxxxx 653 653 365 657 655 271
Potent Cap.: 1203 xxxx xxxxx xxxx xxxx xxxxx 435 389 685 381 388 772
Move Cap.: 1203 xxxx xxxxx xxxx xxxx xxxxx 432 386 685 375 385 772
Volume/Cap: 0.01 xxxx xxxxx xxxx xxxx xxxxx 0.01 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 8.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A * * * * * * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 555 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 8.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 11.6 xxxxx xxxxx xxxx xxxxx
Shared LOS: A * * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 11.6 xxxxxx
ApproachLOS: * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 8.6 Worst Case Level Of Service: D[27.5]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 12 columns and 12 rows showing traffic volume data for various approaches and movements.

Critical Gap Module: Table with 12 columns and 2 rows showing critical gap and follow-up time data.

Capacity Module: Table with 12 columns and 5 rows showing capacity and volume data.

Level Of Service Module: Table with 12 columns and 10 rows showing level of service and delay data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 4.7 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 12 columns and 12 rows showing traffic volume data for various approaches and movements.

PCE Module: Table with 12 columns and 5 rows showing PCE data.

Delay Module: Table with 12 columns and 7 rows showing delay and queue data.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1
Cycle (sec): 70 Critical Vol./Cap.(X): 0.773
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.7
Optimal Cycle: 49 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Lanes: 1 0 1 0 0 0 0 1 0 1 0 0 0 0 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 4 58 0 0 106 0 0 0 12 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: 4 58 0 0 106 0 0 0 12 0 0 0
Added Vol: 311 310 0 0 241 41 56 0 88 0 0 0
PasserByVol: 170 38 0 0 38 0 0 0 57 0 0 0
Initial Fut: 485 406 0 0 385 41 56 0 157 0 0 0
User Adj: 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09
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: 529 443 0 0 420 45 61 0 171 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 529 443 0 0 420 45 61 0 171 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
FinalVolume: 529 443 0 0 420 45 61 0 171 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.49 1.00 1.00 1.00 1.00 0.85 0.89 1.00 0.89 1.00 1.00 1.00
Lanes: 1.00 1.00 0.00 0.00 1.00 1.00 0.26 0.00 0.74 0.00 0.00 0.00
Final Sat.: 929 1900 0 0 1900 1615 444 0 1245 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.57 0.23 0.00 0.00 0.22 0.03 0.14 0.00 0.14 0.00 0.00 0.00
Crit Moves: ****
Green/Cycle: 0.74 0.74 0.00 0.00 0.74 0.74 0.18 0.00 0.18 0.00 0.00 0.00
Volume/Cap: 0.77 0.32 0.00 0.00 0.30 0.04 0.77 0.00 0.77 0.00 0.00 0.00
Delay/Veh: 11.1 3.3 0.0 0.0 3.2 2.5 39.1 0.0 39.1 0.0 0.0 0.0
User DelAdj: 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: 11.1 3.3 0.0 0.0 3.2 2.5 39.1 0.0 39.1 0.0 0.0 0.0
LOS by Move: B A A A A A D A D A A A
HCM2k95thQ: 17 7 0 0 6 1 13 0 13 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2
Average Delay (sec/veh): 4.2 Worst Case Level Of Service: D[29.1]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0
Volume Module:
Base Vol: 0 58 0 0 106 0 0 0 0 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 58 0 0 106 0 0 0 0 0 0 0
Added Vol: 35 290 42 0 218 106 60 0 29 35 0 0
PasserByVol: 19 0 19 0 0 0 0 0 19 19 0 0
Initial Fut: 54 348 61 0 324 106 60 0 48 54 0 0
User Adj: 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09 1.09
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: 59 379 66 0 353 116 65 0 52 59 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 59 379 66 0 353 116 65 0 52 59 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 7.1 6.5 6.2 7.1 xxxx xxxxx
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 xxxx xxxxx
Capacity Module:
Cnflct Vol: 469 xxxx xxxxx xxxx xxxx xxxxx 941 974 411 967 xxxx xxxxx
Potent Cap.: 1103 xxxx xxxxx xxxx xxxx xxxxx 245 254 645 236 xxxx xxxxx
Move Cap.: 1103 xxxx xxxxx xxxx xxxx xxxxx 235 240 645 207 xxxx xxxxx
Volume/Cap: 0.05 xxxx xxxxx xxxx xxxx xxxxx 0.28 0.00 0.08 0.28 xxxx xxxxx
Level Of Service Module:
2Way95thQ: 0.2 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx 1.1 xxxx xxxxx
Control Del: 8.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx 29.1 xxxx xxxxx
LOS by Move: A * * * * * D * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 328 xxxxx xxxx xxxx xxxxx
SharedQueue:xxxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 1.6 xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 22.0 xxxxx xxxxx xxxx xxxxx
Shared LOS: * * * * * * * C * * *
ApproachDel: xxxxxxx xxxxxxx 22.0 29.1
ApproachLOS: * * C D
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Baseline Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 FranklinBl/5th Av (South)

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[14.2]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module: >> Count Date: 29 Mar 2005 <<

Base Vol:	14	254	0	0	280	16	7	0	9	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:	14	254	0	0	280	16	7	0	9	0	0	0
Added Vol:	0	28	0	0	37	52	44	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	282	0	0	317	68	51	0	9	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:	14	282	0	0	317	68	51	0	9	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	14	282	0	0	317	68	51	0	9	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxx	xxxx	xxxx	xxxx	6.4	6.5	6.2	xxxx	xxxx	xxxx
FollowUpTim:	2.2	xxxx	xxxx	xxxx	xxxx	xxxx	3.5	4.0	3.3	xxxx	xxxx	xxxx

Capacity Module:

Cnflct Vol:	385	xxxx	xxxx	xxxx	xxxx	xxxx	661	661	351	xxxx	xxxx	xxxx
Potent Cap.:	1185	xxxx	xxxx	xxxx	xxxx	xxxx	431	385	697	xxxx	xxxx	xxxx
Move Cap.:	1185	xxxx	xxxx	xxxx	xxxx	xxxx	427	381	697	xxxx	xxxx	xxxx
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.12	0.00	0.01	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	0.0	xxxx										
Control Del:	8.1	xxxx										
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	453	xxxx	xxxx	xxxx	xxxx	xxxx
SharedQueue:	0.0	xxxx	xxxx	xxxx	xxxx	xxxx	0.5	xxxx	xxxx	xxxx	xxxx	xxxx
Shrd ConDel:	8.1	xxxx	xxxx	xxxx	xxxx	xxxx	14.2	xxxx	xxxx	xxxx	xxxx	xxxx
Shared LOS:	A	*	*	*	*	*	B	*	*	*	*	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	14.2	xxxxxx	xxxxxx	xxxxxx	xxxxxx	
ApproachLOS:	*	*	*	*	*	*	B	*	*	*	*	*

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.406
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 55 184 39 75 208 38 24 470 45 74 728 78
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: 55 184 39 75 208 38 24 470 45 74 728 78
Added Vol: 13 10 5 0 9 0 0 0 12 4 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 68 194 44 75 217 38 24 470 57 78 728 78
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: 68 194 44 75 217 38 24 470 57 78 728 78
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 68 194 44 75 217 38 24 470 57 78 728 78
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
FinalVolume: 68 194 44 75 217 38 24 470 57 78 728 78
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.49 1.00 0.85 0.53 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.78 0.22 1.00 1.81 0.19
Final Sat.: 925 1900 1615 998 1900 1615 1805 3168 384 1805 3212 344
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.07 0.10 0.03 0.08 0.11 0.02 0.01 0.15 0.15 0.04 0.23 0.23
Crit Moves: **** *
Green/Cycle: 0.27 0.27 0.27 0.27 0.27 0.27 0.06 0.50 0.50 0.10 0.54 0.54
Volume/Cap: 0.27 0.37 0.10 0.28 0.42 0.09 0.23 0.30 0.30 0.43 0.42 0.42
Delay/Veh: 20.6 21.1 19.1 20.6 21.4 19.0 32.7 10.4 10.4 31.3 9.7 9.7
User DelAdj: 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: 20.6 21.1 19.1 20.6 21.4 19.0 32.7 10.4 10.4 31.3 9.7 9.7
LOS by Move: C C B C C B C B B C A A
HCM2k95thQ: 3 7 2 3 8 1 2 7 7 4 11 11

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.537
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 20.3
Optimal Cycle: 33 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:0745
Table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module:
Table with 12 columns for saturation flow factors across different approaches and movements.

Capacity Analysis Module:
Table with 12 columns for capacity analysis factors across different approaches and movements.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.465
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.8
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:
Table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module:
Table with 12 columns for saturation flow factors across different approaches and movements.

Capacity Analysis Module:
Table with 12 columns for capacity analysis factors across different approaches and movements.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 0.612
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and adjustment factors.

Saturation Flow Module table with 12 columns and 4 rows showing adjustment factors and saturation flow.

Capacity Analysis Module table with 12 columns and 14 rows showing delay, LOS, and approach delay.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th AV

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[12.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and adjustment factors.

Critical Gap Module table with 12 columns and 3 rows showing critical gap and follow-up time.

Capacity Module table with 12 columns and 5 rows showing conflict volume, potential capacity, and move capacity.

Level of Service Module table with 12 columns and 10 rows showing delay, LOS, and approach delay.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.588
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.0
Optimal Cycle: 39 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.603
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.2
Optimal Cycle: 32 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.472
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic counts and 12 columns for saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module table with 12 columns for adjustment factors and 12 columns for final saturation flow values.

Capacity Analysis Module table with 12 columns for delay and LOS by approach, and 12 columns for LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: B[12.9]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic counts and 12 columns for saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with 12 columns for critical gap and follow-up time values.

Capacity Module table with 12 columns for conflict volume, potent capacity, move capacity, and volume/capacity.

Level of Service Module table with 12 columns for delay and LOS by approach, and 12 columns for LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy
Average Delay (sec/veh): 3.3 Worst Case Level Of Service: B[10.1]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 0 275 13 10 131 0 0 0 0 6 0 18
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: 0 275 13 10 131 0 0 0 0 6 0 18
Added Vol: 2 0 0 0 0 0 0 23 0 0 17 0
Diverted Tr: 0 -163 0 0 -118 0 0 0 0 -5 0 5
Initial Fut: 2 112 13 10 13 0 0 23 0 1 17 23
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: 2 112 13 10 13 0 0 23 0 1 17 23
Reduct Vol: 0 0 0 0 0 0 0 0 5 0 0 0
FinalVolume: 2 112 13 10 13 0 0 23 0 1 17 23
Critical Gap Module:
Critical Gap: 4.1 xxxxxx xxxxxx 4.1 xxxxxx xxxxxx xxxxxx 6.5 xxxxxx 7.1 6.5 6.2
FollowUpTim: 2.2 xxxxxx xxxxxx 2.2 xxxxxx xxxxxx xxxxxx 4.0 xxxxxx 3.5 4.0 3.3
Capacity Module:
Conflict Vol: 13 xxxxxx xxxxxx 125 xxxxxx xxxxxx xxxxxx 162 xxxxxx 167 156 119
Potent Cap.: 1619 xxxxxx xxxxxx 1474 xxxxxx xxxxxx xxxxxx 734 xxxxxx 802 740 939
Move Cap.: 1619 xxxxxx xxxxxx 1474 xxxxxx xxxxxx xxxxxx 728 xxxxxx 778 734 939
Volume/Cap: 0.00 xxxxxx xxxxxx 0.01 xxxxxx xxxxxx xxxxxx 0.03 xxxxxx 0.00 0.02 0.02
Level Of Service Module:
2Way95thQ: 0.0 xxxxxx xxxxxx 0.0 xxxxxx xxxxxx xxxxxx 0.1 xxxxxx xxxxxx xxxxxx xxxxxx
Control Del: 7.2 xxxxxx xxxxxx 7.5 xxxxxx xxxxxx xxxxxx 10.1 xxxxxx xxxxxx xxxxxx xxxxxx
LOS by Move: A * * A * * B * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 838 xxxxxx
SharedQueue: xxxxxx xxxxxx xxxxxx 0.0 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 0.2 xxxxxx
Shrd ConDel: xxxxxx xxxxxx xxxxxx 7.5 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 9.5 xxxxxx
Shared LOS: * * * A * * * * * * * A *
ApproachDel: xxxxxx xxxxxx 10.1 xxxxxx 9.5
ApproachLOS: * * B A
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.534
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.7
Optimal Cycle: 27 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 10 0 0 10 0 0 0 0 0 4 0 10
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 523 143 25 188 0 0 0 0 43 0 29
Growth Adj: 1.14 1.14 1.14 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 596 163 25 188 0 0 0 0 43 0 29
Added Vol: 0 32 0 0 33 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 628 163 25 221 0 0 0 0 43 0 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: 0 628 163 25 221 0 0 0 0 43 0 29
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 628 163 25 221 0 0 0 0 43 0 29
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
FinalVolume: 0 628 163 25 221 0 0 0 0 43 0 29
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.97 0.97 0.92 0.92 1.00 1.00 1.00 1.00 0.92 1.00 0.92
Lanes: 0.00 0.79 0.21 0.10 0.90 0.00 0.00 0.00 0.00 0.60 0.00 0.40
Final Sat.: 0 1466 380 177 1569 0 0 0 0 1042 0 703
Capacity Analysis Module:
Vol/Sat: 0.00 0.43 0.43 0.14 0.14 0.00 0.00 0.00 0.00 0.04 0.00 0.04
Crit Moves: ****
Green/Cycle: 0.00 0.68 0.68 0.68 0.68 0.00 0.00 0.00 0.00 0.20 0.00 0.20
Volume/Cap: 0.00 0.63 0.63 0.21 0.21 0.00 0.00 0.00 0.00 0.21 0.00 0.21
Delay/Veh: 0.0 5.5 5.5 3.1 3.1 0.0 0.0 0.0 0.0 17.0 0.0 17.0
User DelAdj: 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 5.5 5.5 3.1 3.1 0.0 0.0 0.0 0.0 17.0 0.0 17.0
LOS by Move: A A A A A A A A A B A B
HCM2k95thQ: 0 15 15 3 3 0 0 0 0 2 0 2
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: A[9.1]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0).

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 3 columns for Critical Gap, FollowUpTim, and other metrics.

Capacity Module:

Table with 3 columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 3 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: A[9.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0).

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 3 columns for Critical Gap, FollowUpTim, and other metrics.

Capacity Module:

Table with 3 columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 3 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.807
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.0
Optimal Cycle: 63 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0715. Table with 10 columns for volume and 10 rows for various traffic metrics.

Saturation Flow Module: Table with 10 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 10 columns for Vol/Sat and 10 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.459
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.1
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 10 columns for volume and 10 rows for various traffic metrics.

Saturation Flow Module: Table with 10 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 10 columns for Vol/Sat and 10 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.676
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 21.4
Optimal Cycle: 52 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0715. Table with 12 columns for volume and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.806
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.0
Optimal Cycle: 63 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements. Table with 12 columns for volume and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[12.9]

Table with columns: Approach, Movement, Control, Rights, Lanes. Rows for North, South, East, West bounds.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module: Table with columns: Critical Gp, FollowUpTim.

Capacity Module: Table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: D[34.6]

Table with columns: Approach, Movement, Control, Rights, Lanes. Rows for North, South, East, West bounds.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module: Table with columns: Critical Gp, FollowUpTim.

Capacity Module: Table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.825
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 29.8
Optimal Cycle: 74 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.899
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 30.2
Optimal Cycle: 89 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.767
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.2
Optimal Cycle: 57 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume and 12 columns for growth/initial/added/passing/initial fut/user/phf/reduced/pce/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.699
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.7
Optimal Cycle: 48 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0730. Table with 12 columns for volume and 12 columns for growth/initial/added/passing/initial fut/user/phf/reduced/pce/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G

Cycle (sec): 50 Critical Vol./Cap.(X): 0.253
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.1
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and delay metrics.

Saturation Flow Module table with 12 columns and 6 rows showing saturation flow and adjustment factors.

Capacity Analysis Module table with 12 columns and 11 rows showing capacity, delay, and LOS metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E

Average Delay (sec/veh): 0.4 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, Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and delay metrics.

Critical Gap Module table with 12 columns and 2 rows showing critical gap and follow-up time.

Capacity Module table with 12 columns and 4 rows showing capacity and volume/capacity ratios.

Level of Service Module table with 12 columns and 10 rows showing LOS, delay, and queue metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 4.0 Worst Case Level Of Service: C[16.7]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0, 1, 0, 0).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with columns for Critical Gap, FollowUpTim.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 4.1 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Yield Sign), Rights (Include), Lanes (1).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

PCE Module table with columns for AutoPCE, TruckPCE, ComboPCE, BicyclePCE, AdjVolume.

Delay Module table with columns for Time Period, CircVolume, MaxVolume, PedVolume, AdjMaxVol, ApproachVol, ApproachDel, Queue.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.260
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: C[16.4]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for Critical Gap and FollowUpTim.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.630
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.3
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 56 162 71 158 409 36 35 790 101 101 905 80
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: 56 162 71 158 409 36 35 790 101 101 905 80
Added Vol: 23 17 8 0 22 0 0 0 0 30 10 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 79 179 79 158 431 36 35 790 131 111 905 80
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: 79 179 79 158 431 36 35 790 131 111 905 80
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 79 179 79 158 431 36 35 790 131 111 905 80
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
FinalVolume: 79 179 79 158 431 36 35 790 131 111 905 80
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.28 1.00 0.85 0.59 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.72 0.28 1.00 1.84 0.16
Final Sat.: 542 1900 1615 1117 1900 1615 1805 3031 503 1805 3277 290
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.15 0.09 0.05 0.14 0.23 0.02 0.02 0.26 0.26 0.06 0.28 0.28
Crit Moves: **** *
Green/Cycle: 0.36 0.36 0.36 0.36 0.36 0.36 0.09 0.41 0.41 0.10 0.43 0.43
Volume/Cap: 0.41 0.26 0.14 0.39 0.63 0.06 0.23 0.63 0.63 0.63 0.65 0.65
Delay/Veh: 18.2 16.0 15.2 17.3 20.4 14.7 30.6 17.2 17.2 37.5 16.9 16.9
User DelAdj: 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: 18.2 16.0 15.2 17.3 20.4 14.7 30.6 17.2 17.2 37.5 16.9 16.9
LOS by Move: B B B B C B C B B D B B
HCM2k95thQ: 4 6 2 6 16 1 2 17 17 7 18 18

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.932
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 41.4
Optimal Cycle: 98 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:1700

Table with 12 columns representing traffic volumes and 11 rows of performance metrics including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. across 4 approaches.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.538
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.5
Optimal Cycle: 28 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 11 rows of performance metrics including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. across 4 approaches.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 0.847
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Table with 12 columns for traffic flow. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for flow and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for flow and 14 rows for Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: B[10.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for flow and 2 rows for Critical Gap and FollowUpTim.

Capacity Module table with 12 columns for flow and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for flow and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.635
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.1
Optimal Cycle: 42 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.578
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.3
Optimal Cycle: 31 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.812
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 18.8
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for movement counts and 12 columns for volume module data. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for movement counts and 12 columns for adjustment factors.

Capacity Analysis Module table with 12 columns for movement counts and 12 columns for analysis metrics like Vol/Sat, Crit Moves, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: C[20.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for movement counts and 12 columns for volume module data. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for movement counts and 12 columns for gap metrics.

Capacity Module table with 12 columns for movement counts and 12 columns for capacity metrics like Cnflct Vol, Potent Cap., etc.

Level Of Service Module table with 12 columns for movement counts and 12 columns for LOS metrics like 2Way95thQ, Control Del, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 6.2 Worst Case Level Of Service: B[10.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0 0 1 0 0).

Volume Module:

Table with 12 columns for traffic volume and 12 columns for adjustment factors (Growth Adj, Initial Bse, Added Vol, etc.).

Critical Gap Module:

Table with 4 columns for Critical Gap, FollowUpTim, and other parameters.

Capacity Module:

Table with 12 columns for Capacity parameters (Cnflct Vol, Potent Cap., Move Cap., etc.).

Level Of Service Module:

Table with 12 columns for Level of Service parameters (2Way95thQ, Control Del, LOS by Move, etc.).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.597
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.6
Optimal Cycle: 30 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Permitted, Split Phase), Rights (Include), and Lanes (0 0 0 1 0).

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with 12 columns for traffic volume and 12 columns for adjustment factors (Growth Adj, Initial Bse, Added Vol, etc.).

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Capacity parameters (Vol/Sat, Crit Moves, Green/Cycle, etc.).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: A[8.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0).

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 3 columns for critical gap metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table with 3 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 3 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: A[8.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0).

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 3 columns for critical gap metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table with 3 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 3 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.749
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.6
Optimal Cycle: 54 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700. Table with 12 columns for volume and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.532
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.2
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.861
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 27.5
Optimal Cycle: 80 Level of Service: C

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700. Table with 12 columns for volume and 12 columns for various adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 1.200
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 86.9
Optimal Cycle: 180 Level of Service: F

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements. Table with 12 columns for volume and 12 columns for various adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[13.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 11 columns for traffic volume metrics and 11 rows for different vehicle types and adjustments.

Critical Gap Module:

Table with 11 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 11 columns for capacity metrics and 5 rows for Conflict Vol, Potent Cap, Move Cap, and Volume/Cap.

Level Of Service Module:

Table with 11 columns for LOS metrics and 11 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[21.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 11 columns for traffic volume metrics and 11 rows for different vehicle types and adjustments.

Critical Gap Module:

Table with 11 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 11 columns for capacity metrics and 5 rows for Conflict Vol, Potent Cap, Move Cap, and Volume/Cap.

Level Of Service Module:

Table with 11 columns for LOS metrics and 11 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.824
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 29.5
Optimal Cycle: 74 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.068
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 57.8
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.781
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.6
Optimal Cycle: 59 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.840
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.7
Optimal Cycle: 69 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1630. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G

Cycle (sec): 50 Critical Vol./Cap.(X): 0.423
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic flow directions and 12 rows for various volume and delay metrics.

Saturation Flow Module table with 12 columns for traffic flow directions and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for traffic flow directions and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: C[15.4]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Volume Module table with 12 columns for traffic flow directions and 12 rows for various volume and delay metrics.

Critical Gap Module table with 12 columns for traffic flow directions and 3 rows for Critical Gap, FollowUpTim, and Capacity Module.

Capacity Module table with 12 columns for traffic flow directions and 4 rows for Cnflct Vol, Potent Cap, Move Cap, and Volume/Cap.

Level of Service Module table with 12 columns for traffic flow directions and 12 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 33.3 Worst Case Level Of Service: F[191.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume) and 4 rows for North, South, East, West bounds.

Critical Gap Module:

Table with 12 columns for critical gap metrics (Critical Gp, FollowUpTim) and 4 rows for North, South, East, West bounds.

Capacity Module:

Table with 12 columns for capacity metrics (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) and 4 rows for North, South, East, West bounds.

Level Of Service Module:

Table with 12 columns for level of service metrics (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS) and 4 rows for North, South, East, West bounds.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report

FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 7.8 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume) and 4 rows for North, South, East, West bounds.

PCE Module:

Table with 12 columns for PCE metrics (AutoPCE, TruckPCE, ComboPCE, BicyclePCE, AdjVolume) and 4 rows for North, South, East, West bounds.

Delay Module: >> Time Period: 0.25 hours <<

Table with 4 columns for delay metrics (CircVolume, MaxVolume, PedVolume, AdjMaxVol, ApproachVol, ApproachDel, Queue) and 4 rows for North, South, East, West bounds.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 1.101
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 31.9
Optimal Cycle: 180 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 15 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns and 5 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 12 rows including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 7.9 Worst Case Level Of Service: F[82.2]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Volume Module table with 12 columns and 15 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns and 3 rows including Critical Gp and FollowUpTim.

Capacity Module table with 12 columns and 4 rows including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns and 10 rows including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: C[21.5]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<
Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:
Table with 12 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:
Table with 12 columns for capacity metrics and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:
Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.347
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 11.7
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 37 80 29 49 100 38 25 612 44 41 713 80
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 80 29 49 100 38 25 612 44 41 713 80
Added Vol: 26 19 9 0 24 0 0 0 0 32 11 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 63 99 38 49 124 38 25 612 76 52 713 80
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: 63 99 38 49 124 38 25 612 76 52 713 80
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 63 99 38 49 124 38 25 612 76 52 713 80
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
FinalVolume: 63 99 38 49 124 38 25 612 76 52 713 80
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.61 1.00 0.85 0.67 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.78 0.22 1.00 1.80 0.20
Final Sat.: 1157 1900 1615 1279 1900 1615 1805 3160 392 1805 3197 359
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.05 0.05 0.02 0.04 0.07 0.02 0.01 0.19 0.19 0.03 0.22 0.22
Crit Moves: **** *
Green/Cycle: 0.18 0.18 0.18 0.18 0.18 0.18 0.06 0.57 0.57 0.11 0.63 0.63
Volume/Cap: 0.30 0.28 0.13 0.21 0.35 0.13 0.24 0.34 0.34 0.25 0.35 0.35
Delay/Veh: 25.4 25.0 24.0 24.7 25.5 24.0 32.8 8.0 8.0 28.9 6.3 6.3
User DelAdj: 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: 25.4 25.0 24.0 24.7 25.5 24.0 32.8 8.0 8.0 28.9 6.3 6.3
LOS by Move: C C C C C C C A A C A A
HCM2kAvgQ: 1 2 1 1 3 1 1 4 4 1 4 4

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.489
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 17.3
Optimal Cycle: 30 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow values and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis values and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.291
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.9
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow values and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis values and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av
Average Delay (sec/veh): 1.6 Worst Case Level Of Service: B[10.2]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 1 0 0 0 0 0 0 0 0 0 0 1
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 0 406 37 33 321 0 0 0 0 0 0 0 54
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.17 1.17 1.17
Initial Bse: 0 406 37 33 321 0 0 0 0 0 0 0 63
Added Vol: 0 0 69 48 5 0 0 0 0 0 0 0 27
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 406 106 81 326 0 0 0 0 0 0 0 90
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
PHF Volume: 0 406 106 81 326 0 0 0 0 0 0 0 90
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 406 106 81 326 0 0 0 0 0 0 0 90
Critical Gap Module:
Critical Gap:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 6.2
FollowUpTim:xxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 3.3
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 512 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 256
Potent Cap.: xxxxx xxxxx xxxxxx 1064 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 788
Move Cap.: xxxxx xxxxx xxxxxx 1064 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 788
Volume/Cap: xxxxx xxxxx xxxxxx 0.08 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.11
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.4
Control Del:xxxxx xxxxx xxxxxx 8.7 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 10.2
LOS by Move: * * * A * * * * * * * * * * B
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 8.7 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: * * * A * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx xxxxxx 10.2
ApproachLOS: * * * * * B
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St
Cycle (sec): 70 Critical Vol./Cap.(X): 0.429
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.8
Optimal Cycle: 39 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: Split Phase Split Phase Split Phase Split Phase
Rights: Include Include Ignore Include
Min. Green: 10 10 0 0 10 10 10 0 0 10 0 0 0 0
Lanes: 0 1 1 0 0 0 0 0 1 0 1 0 0 0 0 0
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 194 416 0 0 290 7 17 0 508 0 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: 194 416 0 0 290 7 17 0 508 0 0 0 0
Added Vol: 0 16 0 0 5 0 53 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 194 432 0 0 295 7 70 0 508 0 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 194 432 0 0 295 7 70 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 194 432 0 0 295 7 70 0 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
FinalVolume: 194 432 0 0 295 7 70 0 0 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.94 0.94 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00
Lanes: 0.62 1.38 0.00 0.00 0.98 0.02 1.00 0.00 1.00 0.00 0.00 0.00
Final Sat.: 1102 2454 0 0 1850 44 1805 0 1900 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.18 0.18 0.00 0.00 0.16 0.16 0.04 0.00 0.00 0.00 0.00 0.00
Crit Moves: **** *
Green/Cycle: 0.38 0.38 0.00 0.00 0.35 0.35 0.14 0.00 0.00 0.00 0.00 0.00
Volume/Cap: 0.46 0.46 0.00 0.00 0.46 0.46 0.27 0.00 0.00 0.00 0.00 0.00
Delay/Veh: 16.5 16.5 0.0 0.0 18.3 18.3 27.3 0.0 0.0 0.0 0.0 0.0
User DelAdj: 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: 16.5 16.5 0.0 0.0 18.3 18.3 27.3 0.0 0.0 0.0 0.0 0.0
LOS by Move: B B A A B B C A A A A A
HCM2kAvgQ: 6 6 0 0 5 5 2 0 0 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.350
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.8
Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 10 columns for volume counts and 10 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 10 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 10 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.270
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.7
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 10 columns for volume counts and 10 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 10 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 10 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.548
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.8
Optimal Cycle: 36 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and saturation flow data.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.383
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.1
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and saturation flow data.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.288
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 14.8
Optimal Cycle: 31 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various metrics like Base Vol, Growth Adj, 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, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.911
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 32.5
Optimal Cycle: 90 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 rows for various metrics like Base Vol, Growth Adj, 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, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: C[22.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns for traffic volumes and 11 rows for various volume metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap, Move Cap, etc.

Level Of Service Module: Table with 11 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: F[51.6]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns for traffic volumes and 11 rows for various volume metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap, Move Cap, etc.

Level Of Service Module: Table with 11 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.742
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 24.5
Optimal Cycle: 61 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.120
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 68.0
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.874
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 27.0
Optimal Cycle: 81 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 columns for counts.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.732
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.0
Optimal Cycle: 51 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 columns for counts.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.203
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.3
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 0 49 0 0 78 0 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 49 0 0 78 0 0 0 0 0 0 0 0 0 0 0
Added Vol: 2 169 34 7 215 1 2 3 1 41 1 8
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 2 218 34 7 293 1 2 3 1 41 1 8
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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
PHF Volume: 2 244 38 8 328 1 2 3 1 46 1 9
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 2 244 38 8 328 1 2 3 1 46 1 9
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 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 1.00 1.00
FinalVolume: 2 244 38 8 328 1 2 3 1 46 1 9
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.55 1.00 0.85 0.60 1.00 0.85 0.76 0.96 0.96 0.77 0.87 0.87
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.75 0.25 1.00 0.11 0.89
Final Sat.: 1043 1900 1615 1140 1900 1615 1444 1372 457 1455 183 1464
Capacity Analysis Module:
Vol/Sat: 0.00 0.13 0.02 0.01 0.17 0.00 0.00 0.00 0.00 0.03 0.01 0.01
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.00 0.19 0.03 0.01 0.25 0.00 0.01 0.01 0.01 0.16 0.03 0.03
Delay/Veh: 2.6 3.0 2.6 2.6 3.2 2.6 16.0 16.1 16.1 16.8 16.1 16.1
User DelAdj: 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: 2.6 3.0 2.6 2.6 3.2 2.6 16.0 16.1 16.1 16.8 16.1 16.1
LOS by Move: A A A A A A B B B B B B
HCM2kAvgQ: 0 1 0 0 2 0 0 0 0 1 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.7]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0
Volume Module:
Base Vol: 0 49 0 0 78 0 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 49 0 0 78 0 0 0 0 0 0 0 0 0 0 0
Added Vol: 8 201 0 0 254 3 4 0 6 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 250 0 0 332 3 4 0 6 0 0 0 0 0 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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
PHF Volume: 9 280 0 0 372 3 4 0 7 0 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 280 0 0 372 3 4 0 7 0 0 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 375 xxxxx xxxxx xxxxx xxxxx xxxxx 671 671 374 675 673 280
Potent Cap.: 1194 xxxxx xxxxx xxxxx xxxxx xxxxx 425 380 677 371 379 764
Move Cap.: 1194 xxxxx xxxxx xxxxx xxxxx xxxxx 422 377 677 365 376 764
Volume/Cap: 0.01 xxxxx xxxxx xxxxx xxxxx xxxxx 0.01 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxxx xxxxx
Control Del: 8.0 xxxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 545 xxxxx xxxxx 0 xxxxx
SharedQueue: 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 8.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 11.7 xxxxx xxxxx xxxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxxx xxxxxxx 11.7 xxxxxxx
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3
Average Delay (sec/veh): 9.3 Worst Case Level Of Service: D[30.7]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
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: 0 49 0 0 78 0 0 0 0 0 0 0 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 49 0 0 78 0 0 0 0 0 0 0 0 0 0
Added Vol: 198 129 17 15 157 90 68 0 146 13 0 13
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 198 178 17 15 235 90 68 0 146 13 0 13
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 222 199 19 17 263 101 76 0 164 15 0 15
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 222 199 19 17 263 101 76 0 164 15 0 15
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxxx 4.1 xxxx xxxxxx 7.1 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxxx 2.2 xxxx xxxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 364 xxxx xxxxxx 218 xxxx xxxxxx 1007 1009 314 1081 1050 209
Potent Cap.: 1206 xxxx xxxxxx 1363 xxxx xxxxxx 221 242 731 197 229 837
Move Cap.: 1206 xxxx xxxxxx 1363 xxxx xxxxxx 181 189 731 127 179 837
Volume/Cap: 0.18 xxxx xxxxxx 0.01 xxxx xxxxxx 0.42 0.00 0.22 0.11 0.00 0.02
Level Of Service Module:
2Way95thQ: 0.7 xxxx xxxxxx 0.0 xxxx xxxxxx xxxx xxxx xxxxxx xxxx xxxx xxxxxx
Control Del: 8.7 xxxx xxxxxx 7.7 xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx
LOS by Move: A * * A * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxxx xxxx xxxx xxxxxx xxxx 372 xxxxxx xxxx 221 xxxxxx
SharedQueue:xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx 4.3 xxxxxx xxxxxx 0.4 xxxxxx
Shrd ConDel:xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx 30.7 xxxxxx xxxxxx 23.8 xxxxxx
Shared LOS: *
ApproachDel: xxxxxx xxxxxx 30.7 23.8
ApproachLOS: * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C
Average Delay (sec/veh): 4.8 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: Yield Sign Yield Sign Yield Sign Yield Sign
Lanes: 1 1 1 1
Volume Module:
Base Vol: 9 49 0 0 78 0 0 0 28 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: 9 49 0 0 78 0 0 0 28 0 0 0
Added Vol: 6 344 0 0 316 0 0 0 7 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 15 393 0 0 394 0 0 0 35 0 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 17 440 0 0 441 0 0 0 39 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 17 440 0 0 441 0 0 0 39 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
FinalVolume: 17 440 0 0 441 0 0 0 39 0 0 0
PCE Module:
AutoPCE: 17 440 0 0 441 0 0 0 39 0 0 0
TruckPCE: 0 0 0 0 0 0 0 0 0 0 0 0
ComboPCE: 0 0 0 0 0 0 0 0 0 0 0 0
BicyclePCE: 0 0 0 0 0 0 0 0 0 0 0 0
AdjVolume: 17 440 0 0 441 0 0 0 39 0 0 0
Delay Module: >> Time Period: 0.25 hours <<
CircVolume: 0 17 441 457
MaxVolume: 1200 1191 962 xxxxxx
PedVolume: 0 0 0 0
AdjMaxVol: 1200 1191 962 xxxxxx
ApproachVol: 457 441 39 xxxxxx
ApproachDel: 4.8 4.8 3.9 xxxxxx
Queue: 1.8 1.7 0.1 xxxxx

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1
Cycle (sec): 70 Critical Vol./Cap.(X): 0.810
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.1
Optimal Cycle: 55 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Lanes: 1 0 1 0 0 0 0 1 0 1 0 0 0 0 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 4 58 0 0 106 0 0 0 12 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: 4 58 0 0 106 0 0 0 12 0 0 0
Added Vol: 311 310 0 0 241 41 56 0 95 0 0 0
PasserByVol: 170 38 0 0 38 0 0 0 57 0 0 0
Initial Fut: 485 406 0 0 385 41 56 0 164 0 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 543 455 0 0 431 46 63 0 184 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 543 455 0 0 431 46 63 0 184 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
FinalVolume: 543 455 0 0 431 46 63 0 184 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.48 1.00 1.00 1.00 1.00 0.85 0.89 1.00 0.89 1.00 1.00 1.00
Lanes: 1.00 1.00 0.00 0.00 1.00 1.00 0.25 0.00 0.75 0.00 0.00 0.00
Final Sat.: 914 1900 0 0 1900 1615 429 0 1257 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.59 0.24 0.00 0.00 0.23 0.03 0.15 0.00 0.15 0.00 0.00 0.00
Crit Moves: ****
Green/Cycle: 0.73 0.73 0.00 0.00 0.73 0.73 0.18 0.00 0.18 0.00 0.00 0.00
Volume/Cap: 0.81 0.33 0.00 0.00 0.31 0.04 0.81 0.00 0.81 0.00 0.00 0.00
Delay/Veh: 13.4 3.4 0.0 0.0 3.3 2.6 42.5 0.0 42.5 0.0 0.0 0.0
User DelAdj: 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: 13.4 3.4 0.0 0.0 3.3 2.6 42.5 0.0 42.5 0.0 0.0 0.0
LOS by Move: B A A A A A D A D A A A
HCM2kAvgQ: 10 4 0 0 3 0 8 0 8 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2
Average Delay (sec/veh): 4.4 Worst Case Level Of Service: D[31.0]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 58 0 0 106 0 0 0 0 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 58 0 0 106 0 0 0 0 0 0 0
Added Vol: 35 290 42 0 217 106 60 0 29 35 0 0
PasserByVol: 19 0 19 0 0 0 0 0 19 19 0 0
Initial Fut: 54 348 61 0 323 106 60 0 48 54 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 60 390 68 0 362 119 67 0 54 60 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 60 390 68 0 362 119 67 0 54 60 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 7.1 6.5 6.2 7.1 xxxxx xxxxx
FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 3.5 xxxxx xxxxx
Capacity Module:
Cnflct Vol: 480 xxxxx xxxxx xxxxx xxxxx xxxxx 966 1000 421 993 xxxxx xxxxx
Potent Cap.: 1093 xxxxx xxxxx xxxxx xxxxx xxxxx 236 245 637 226 xxxxx xxxxx
Move Cap.: 1093 xxxxx xxxxx xxxxx xxxxx xxxxx 226 231 637 198 xxxxx xxxxx
Volume/Cap: 0.06 xxxxx xxxxx xxxxx xxxxx xxxxx 0.30 0.00 0.08 0.31 xxxxx xxxxx
Level Of Service Module:
2Way95thQ: 0.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 1.2 xxxxx xxxxx
Control Del: 8.5 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 31.0 xxxxx xxxxx
LOS by Move: A * * * * * D * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 316 xxxxx xxxxx xxxxx
SharedQueue: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 1.7 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 23.2 xxxxx xxxxx xxxxx xxxxx
Shared LOS: *
ApproachDel: xxxxxxx xxxxxxx 23.2 31.0
ApproachLOS: * * * * * C D
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Baseline Saturday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[14.0]

Table with columns: Approach, Movement, Control, Rights, Lanes. Rows for North, South, East, West bounds.

Table with columns: Volume Module, Count, Date, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Table with columns: Critical Gap Module, Critical Gp, FollowUpTim.

Table with columns: Capacity Module, Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Table with columns: Level Of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.406
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 55 184 39 75 208 38 24 470 45 74 728 78
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: 55 184 39 75 208 38 24 470 45 74 728 78
Added Vol: 13 10 5 0 9 0 0 0 12 4 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 68 194 44 75 217 38 24 470 57 78 728 78
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: 68 194 44 75 217 38 24 470 57 78 728 78
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 68 194 44 75 217 38 24 470 57 78 728 78
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
FinalVolume: 68 194 44 75 217 38 24 470 57 78 728 78
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.49 1.00 0.85 0.53 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.78 0.22 1.00 1.81 0.19
Final Sat.: 925 1900 1615 998 1900 1615 1805 3168 384 1805 3212 344
Capacity Analysis Module:
Vol/Sat: 0.07 0.10 0.03 0.08 0.11 0.02 0.01 0.15 0.15 0.04 0.23 0.23
Crit Moves: ****
Green/Cycle: 0.27 0.27 0.27 0.27 0.27 0.27 0.06 0.50 0.50 0.10 0.54 0.54
Volume/Cap: 0.27 0.37 0.10 0.28 0.42 0.09 0.23 0.30 0.30 0.43 0.42 0.42
Delay/Veh: 20.6 21.1 19.1 20.6 21.4 19.0 32.7 10.4 10.4 31.3 9.7 9.7
User DelAdj: 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: 20.6 21.1 19.1 20.6 21.4 19.0 32.7 10.4 10.4 31.3 9.7 9.7
LOS by Move: C C B C C B C B B C A A
HCM2k95thQ: 3 7 2 3 8 1 2 7 7 4 11 11
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.537
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 20.3
Optimal Cycle: 33 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:0745

Table with 12 columns representing traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.465
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.8
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 0.612
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 12.4
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns and 4 rows including Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 14 rows including Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th AV

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[12.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Volume Module table with 12 columns and 14 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns and 2 rows including Critical Gap and FollowUpTim.

Capacity Module table with 12 columns and 4 rows including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns and 10 rows including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.588
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.0
Optimal Cycle: 39 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.603
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.2
Optimal Cycle: 32 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.472
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic counts and 12 columns for volume module data. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for adjustment factors and 12 columns for final saturation values.

Capacity Analysis Module table with 12 columns for delay and LOS by approach, and 12 columns for LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[12.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic counts and 12 columns for volume module data. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for critical gap and follow-up time values.

Capacity Module table with 12 columns for conflict volume, potential capacity, move capacity, and volume/capacity.

Level Of Service Module table with 12 columns for delay and LOS by approach, and 12 columns for LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 3.7 Worst Case Level Of Service: B[10.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0)

Volume Module table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume

Critical Gap Module table with columns: Critical Gap, FollowUpTim

Capacity Module table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level Of Service Module table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, Approach Del, Approach LOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.534
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.7
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Permitted, Split Phase), Rights (Include), Lanes (0 0 0 1 0)

Volume Module table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume

Saturation Flow Module table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: A[9.6]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0)

Volume Module:

Table with 12 columns for traffic volumes: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume

Critical Gap Module:

Table with 12 columns for critical gaps and follow-up times: Critical Gp, FollowUpTim

Capacity Module:

Table with 12 columns for capacity: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level Of Service Module:

Table with 12 columns for level of service: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: A[9.2]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0)

Volume Module:

Table with 12 columns for traffic volumes: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume

Critical Gap Module:

Table with 12 columns for critical gaps and follow-up times: Critical Gp, FollowUpTim

Capacity Module:

Table with 12 columns for capacity: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level Of Service Module:

Table with 12 columns for level of service: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.807
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.0
Optimal Cycle: 63 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0715. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.459
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.1
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.676
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 21.4
Optimal Cycle: 52 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0715. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.801
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.6
Optimal Cycle: 62 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[12.9]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 10 columns for volume counts and 10 rows for various adjustments.

Critical Gap Module: Table with 10 columns for gap values and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 10 columns for capacity values and 4 rows for Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 10 columns for LOS values and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: F[95.4]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Volume Module: Table with 10 columns for volume counts and 10 rows for various adjustments.

Critical Gap Module: Table with 10 columns for gap values and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 10 columns for capacity values and 4 rows for Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 10 columns for LOS values and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.825
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 29.8
Optimal Cycle: 74 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for various approaches and movements.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.899
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 30.2
Optimal Cycle: 89 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for various approaches and movements.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.767
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.2
Optimal Cycle: 57 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.699
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.7
Optimal Cycle: 48 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0730. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.254
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.2
Optimal Cycle: 26 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0 0
Volume Module:
Base Vol: 0 163 0 23 118 0 0 0 0 5 0 130
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: 0 163 0 23 118 0 0 0 0 5 0 130
Added Vol: 1 58 13 2 81 1 9 22 5 12 5 12
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 1 221 13 25 199 1 9 22 5 17 5 142
User Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
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: 1 239 14 27 215 1 10 24 5 18 5 153
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 1 239 14 27 215 1 10 24 5 18 5 153
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
FinalVolume: 1 239 14 27 215 1 10 24 5 18 5 153
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.61 1.00 0.85 0.58 1.00 0.85 0.65 0.97 0.97 0.74 0.86 0.86
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.81 0.19 1.00 0.03 0.97
Final Sat.: 1151 1900 1615 1106 1900 1615 1235 1505 342 1414 55 1569
Capacity Analysis Module:
Vol/Sat: 0.00 0.13 0.01 0.02 0.11 0.00 0.01 0.02 0.02 0.01 0.10 0.10
Crit Moves: ****
Green/Cycle: 0.49 0.49 0.49 0.49 0.49 0.49 0.39 0.39 0.39 0.39 0.39 0.39
Volume/Cap: 0.00 0.25 0.02 0.05 0.23 0.00 0.02 0.04 0.04 0.03 0.25 0.25
Delay/Veh: 6.4 7.4 6.4 6.6 7.3 6.4 9.5 9.6 9.6 9.6 10.7 10.7
User DelAdj: 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: 6.4 7.4 6.4 6.6 7.3 6.4 9.5 9.6 9.6 9.6 10.7 10.7
LOS by Move: A A A A A A A A A B B
HCM2k95thQ: 0 5 0 1 4 0 0 1 1 0 4 4
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[10.4]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1! 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 0 163 0 0 123 0 0 0 0 0 0 0 0 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 1.00
Initial Bse: 0 163 0 0 123 0 0 0 0 0 0 0 0 0 0 0
Added Vol: 3 66 0 0 97 1 6 0 10 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 3 229 0 0 220 1 6 0 10 0 0 0 0
User Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
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: 3 247 0 0 238 1 6 0 11 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 3 247 0 0 238 1 6 0 11 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 239 xxxxx xxxxx xxxxx xxxxx xxxxx 492 492 238 497 492 247
Potent Cap.: 1340 xxxxx xxxxx xxxxx xxxxx xxxxx 540 481 806 486 480 796
Move Cap.: 1340 xxxxx xxxxx xxxxx xxxxx xxxxx 539 479 806 479 479 796
Volume/Cap: 0.00 xxxxx xxxxx xxxxx xxxxx xxxxx 0.01 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: 7.7 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 679 xxxxx xxxxx 0 xxxxx
SharedQueue: 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 7.7 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 10.4 xxxxx xxxxx xxxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxxx xxxxxxx 10.4 xxxxxxx
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 3.7 Worst Case Level Of Service: C[15.5]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, PasserBy, Initial Fut, User, PHF, Reduct, Final).

Critical Gap Module table with 4 columns for Critical Gap and FollowUp Time.

Capacity Module table with 12 columns for various capacity and volume metrics.

Level Of Service Module table with 12 columns for delay, LOS, and approach-related metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 4.0 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, PasserBy, Initial Fut, User, PHF, Reduct, Final).

PCE Module table with 12 columns for AutoPCE, TruckPCE, ComboPCE, BicyclePCE, and AdjVolume.

Delay Module table with 4 columns for CircVolume, MaxVolume, PedVolume, and ApproachVol.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.248
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 0.9 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, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for Critical Gap, FollowUpTim, and Capacity Module.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[14.5]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for different traffic movements and 12 rows for various volume metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 3 columns for Critical Gap, FollowUpTim, and other metrics.

Capacity Module: Table with 12 columns for different traffic movements and 4 rows for capacity metrics like Cnflct Vol, Potent Cap., etc.

Level Of Service Module: Table with 12 columns for different traffic movements and 12 rows for LOS metrics like 2Way95thQ, Control Del, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.630
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.3
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 56 162 71 158 409 36 35 790 101 101 905 80
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: 56 162 71 158 409 36 35 790 101 101 905 80
Added Vol: 23 17 8 0 22 0 0 0 30 10 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 79 179 79 158 431 36 35 790 131 111 905 80
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: 79 179 79 158 431 36 35 790 131 111 905 80
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 79 179 79 158 431 36 35 790 131 111 905 80
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
FinalVolume: 79 179 79 158 431 36 35 790 131 111 905 80
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.28 1.00 0.85 0.59 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.72 0.28 1.00 1.84 0.16
Final Sat.: 542 1900 1615 1117 1900 1615 1805 3031 503 1805 3277 290
Capacity Analysis Module:
Vol/Sat: 0.15 0.09 0.05 0.14 0.23 0.02 0.02 0.26 0.26 0.06 0.28 0.28
Crit Moves: ****
Green/Cycle: 0.36 0.36 0.36 0.36 0.36 0.36 0.09 0.41 0.41 0.10 0.43 0.43
Volume/Cap: 0.41 0.26 0.14 0.39 0.63 0.06 0.23 0.63 0.63 0.63 0.65 0.65
Delay/Veh: 18.2 16.0 15.2 17.3 20.4 14.7 30.6 17.2 17.2 37.5 16.9 16.9
User DelAdj: 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: 18.2 16.0 15.2 17.3 20.4 14.7 30.6 17.2 17.2 37.5 16.9 16.9
LOS by Move: B B B B C B C B D B B
HCM2k95thQ: 4 6 2 6 16 1 2 17 17 7 18 18
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.932
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 41.4
Optimal Cycle: 98 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:1700

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.537
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.5
Optimal Cycle: 28 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 0.847
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow metrics. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for adjustment factors and saturation values.

Capacity Analysis Module table with 12 columns for delay, LOS, and approach metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: B[10.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow metrics. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for gap metrics and follow-up times.

Capacity Module table with 12 columns for conflict, potential, and move capacity.

Level of Service Module table with 12 columns for delay, LOS, and approach metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.635
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.1
Optimal Cycle: 42 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.578
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.3
Optimal Cycle: 31 Level of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with 12 columns for volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.811
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 18.8
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for movement counts and 12 columns for volume module data. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for adjustment factors and 12 columns for final saturation values.

Capacity Analysis Module table with 12 columns for delay and LOS by approach, and 12 columns for LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: C[16.9]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for movement counts and 12 columns for volume module data. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for critical gap and follow-up time values.

Capacity Module table with 12 columns for conflict volume, potential capacity, move capacity, and volume/capacity.

Level of Service Module table with 12 columns for delay and LOS by approach, and 12 columns for LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy
Average Delay (sec/veh): 6.2 Worst Case Level Of Service: B[10.1]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 1 0 0 0 0 1 0 0
Volume Module:
Base Vol: 0 77 17 43 453 0 0 0 0 16 0 4
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 77 17 43 453 0 0 0 0 16 0 4
Added Vol: 0 0 0 0 0 0 0 27 1 0 48 0
Diverted Tr: 0 -71 0 0 -408 0 0 0 0 -14 0 14
Initial Fut: 0 6 17 43 45 0 0 27 1 2 48 18
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 6 17 43 45 0 0 27 1 2 48 18
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 6 17 43 45 0 0 27 1 2 48 18
Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx 6.5 6.2 7.1 6.5 6.2
FollowUpTim:xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 23 xxxxx xxxxxx xxxxx 154 45 160 146 15
Potent Cap.: xxxxx xxxxx xxxxxx 1605 xxxxx xxxxxx xxxxx 741 1031 811 750 1071
Move Cap.: xxxxx xxxxx xxxxxx 1605 xxxxx xxxxxx xxxxx 721 1031 770 729 1071
Volume/Cap: xxxxx xxxxx xxxxxx 0.03 xxxxx xxxxxx xxxxx 0.04 0.00 0.00 0.07 0.02
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxxx xxxxx xxxxxx 7.3 xxxxx xxxxxx xxxxxx 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 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 729 xxxxx 798 xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxxx xxxxx 0.1 xxxxxx 0.3 xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 7.3 xxxxx xxxxxx xxxxxx xxxxx 10.1 xxxxxx 9.9 xxxxxx
Shared LOS: * * * A * * * * * B * A *
ApproachDel: xxxxxx xxxxxx 10.1 xxxxxx 9.9
ApproachLOS: * * B A
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.597
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.6
Optimal Cycle: 30 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 10 0 0 10 0 0 0 0 0 4 0 10
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 1 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 267 68 41 656 0 0 0 0 122 0 59
Growth Adj: 1.03 1.03 1.03 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 275 70 41 656 0 0 0 0 122 0 59
Added Vol: 0 65 0 0 80 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 340 70 41 736 0 0 0 0 122 0 59
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: 0 340 70 41 736 0 0 0 0 122 0 59
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 340 70 41 736 0 0 0 0 122 0 59
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
FinalVolume: 0 340 70 41 736 0 0 0 0 122 0 59
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.98 0.98 0.97 0.97 1.00 1.00 1.00 1.00 0.92 1.00 0.92
Lanes: 0.00 0.83 0.17 0.05 0.95 0.00 0.00 0.00 0.00 0.67 0.00 0.33
Final Sat.: 0 1539 317 97 1744 0 0 0 0 1184 0 573
Capacity Analysis Module:
Vol/Sat: 0.00 0.22 0.22 0.42 0.42 0.00 0.00 0.00 0.00 0.10 0.00 0.10
Crit Moves: ****
Green/Cycle: 0.00 0.68 0.68 0.68 0.68 0.00 0.00 0.00 0.00 0.20 0.00 0.20
Volume/Cap: 0.00 0.32 0.32 0.62 0.62 0.00 0.00 0.00 0.00 0.52 0.00 0.52
Delay/Veh: 0.0 3.4 3.4 5.4 5.4 0.0 0.0 0.0 0.0 19.2 0.0 19.2
User DelAdj: 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 3.4 3.4 5.4 5.4 0.0 0.0 0.0 0.0 19.2 0.0 19.2
LOS by Move: A A A A A A A A A B A B
HCM2k95thQ: 0 6 6 14 14 0 0 0 0 7 0 7
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: A[9.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1! 0 0).

Volume Module:

Table with 12 columns representing traffic volumes and adjustments: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 12 columns for Critical Gap and FollowUpTim values.

Capacity Module:

Table with 12 columns for Capacity values: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for Level of Service values: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: A[8.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 0 1 0).

Volume Module:

Table with 12 columns representing traffic volumes and adjustments: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 12 columns for Critical Gap and FollowUpTim values.

Capacity Module:

Table with 12 columns for Capacity values: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for Level of Service values: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.749
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.6
Optimal Cycle: 54 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700
Base Vol: 0 548 499 493 950 0 0 0 0 712 0 380
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

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.95 1.00 0.95 0.95 1.00 1.00 1.00 1.00 0.92 1.00 0.85

Capacity Analysis Module:
Vol/Sat: 0.00 0.15 0.00 0.27 0.26 0.00 0.00 0.00 0.00 0.23 0.00 0.24
Crit Moves: ****
Green/Cycle: 0.00 0.20 0.00 0.36 0.57 0.00 0.00 0.00 0.00 0.30 0.00 0.67

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.532
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.2
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 33 0 43 81 0 61 48 855 9 50 1244 49
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.17 1.17 1.17 1.00 1.00 1.00

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.82 1.00 0.82 0.74 1.00 0.74 0.16 0.95 0.95 0.23 0.95 0.95

Capacity Analysis Module:
Vol/Sat: 0.07 0.00 0.07 0.10 0.00 0.10 0.19 0.31 0.31 0.18 0.39 0.39
Crit Moves: ****
Green/Cycle: 0.19 0.00 0.19 0.19 0.00 0.19 0.73 0.73 0.73 0.73 0.73 0.73

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.861
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 27.5
Optimal Cycle: 80 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700. Table with 12 columns for volume and 12 columns for various adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 1.192
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 84.6
Optimal Cycle: 180 Level Of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements. Table with 12 columns for volume and 12 columns for various adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[13.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 11 columns for traffic volumes and 11 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 11 columns for gap metrics and 2 rows: Critical Gp, FollowUpTim.

Capacity Module:

Table with 11 columns for capacity metrics and 5 rows: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 11 columns for LOS metrics and 7 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: E[35.1]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 11 columns for traffic volumes and 11 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 11 columns for gap metrics and 2 rows: Critical Gp, FollowUpTim.

Capacity Module:

Table with 11 columns for capacity metrics and 5 rows: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 11 columns for LOS metrics and 7 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.825
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 29.5
Optimal Cycle: 74 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.068
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 57.8
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.781
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.6
Optimal Cycle: 59 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.840
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.7
Optimal Cycle: 69 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1630. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.436
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.9
Optimal Cycle: 26 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0 1 0
Volume Module:
Base Vol: 0 71 0 56 408 0 0 0 0 14 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 71 0 56 408 0 0 0 0 14 0 0
Added Vol: 4 165 22 4 196 3 2 9 1 30 15 3
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 4 236 22 60 604 3 2 9 1 44 15 3
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 5 276 26 70 707 4 2 11 1 51 18 4
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 5 276 26 70 707 4 2 11 1 51 18 4
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
FinalVolume: 5 276 26 70 707 4 2 11 1 51 18 4
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.31 1.00 0.85 0.58 1.00 0.85 0.75 0.99 0.99 0.76 0.98 0.98
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.90 0.10 1.00 0.83 0.17
Final Sat.: 580 1900 1615 1108 1900 1615 1427 1684 187 1442 1544 309
Capacity Analysis Module:
Vol/Sat: 0.01 0.15 0.02 0.06 0.37 0.00 0.00 0.01 0.01 0.04 0.01 0.01
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.01 0.21 0.02 0.09 0.55 0.00 0.01 0.03 0.03 0.18 0.06 0.06
Delay/Veh: 2.6 3.1 2.6 2.8 4.6 2.6 16.0 16.1 16.1 16.9 16.2 16.2
User DelAdj: 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: 2.6 3.1 2.6 2.8 4.6 2.6 16.0 16.1 16.1 16.9 16.2 16.2
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 3 0 1 12 0 0 0 0 2 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.1 Worst Case Level Of Service: C[15.4]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0
Volume Module:
Base Vol: 0 71 0 0 422 0 0 0 0 0 0 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 1.00
Initial Bse: 0 71 0 0 422 0 0 0 0 0 0 0 0 0
Added Vol: 8 189 0 0 224 3 1 0 3 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 260 0 0 646 3 1 0 3 0 0 0 0 0
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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
PHF Volume: 9 304 0 0 756 4 1 0 4 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 304 0 0 756 4 1 0 4 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 759 xxxxx xxxxx xxxxx xxxxx xxxxx 1080 1080 758 1082 1082 304
Potent Cap.: 861 xxxxx xxxxx xxxxx xxxxx xxxxx 243 220 410 197 219 740
Move Cap.: 861 xxxxx xxxxx xxxxx xxxxx xxxxx 241 217 410 193 217 740
Volume/Cap: 0.01 xxxxx xxxxx xxxxx xxxxx xxxxx 0.00 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxxx xxxxx
Control Del: 9.2 xxxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 349 xxxxx xxxxx 0 xxxxx
SharedQueue: 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 9.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 15.4 xxxxx xxxxx xxxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxxx xxxxxxx 15.4 xxxxxxx
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 32.7 Worst Case Level Of Service: F[185.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level Of Service Computation Report

FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 7.7 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

PCE Module:

Table with 12 columns for PCE metrics and 5 rows for AutoPCE, TruckPCE, ComboPCE, BicyclePCE, AdjVolume.

Delay Module: >> Time Period: 0.25 hours <<

Table with 4 columns for delay metrics and 6 rows for CircVolume, MaxVolume, PedVolume, AdjMaxVol, ApproachVol, ApproachDel, Queue.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 1.086
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 30.0
Optimal Cycle: 180 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 7.5 Worst Case Level Of Service: F[76.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for Critical Gp and FollowUpTim.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: C[21.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 11 columns for different traffic movements and 11 rows for various volume metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 11 columns for traffic movements and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 11 columns for traffic movements and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 11 columns for traffic movements and 10 rows for various LOS metrics like 2Way95thQ, Control Del, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.347
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 11.7
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 37 80 29 49 100 38 25 612 44 41 713 80
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 80 29 49 100 38 25 612 44 41 713 80
Added Vol: 26 19 9 0 24 0 0 0 0 33 11 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 63 99 38 49 124 38 25 612 77 52 713 80
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: 63 99 38 49 124 38 25 612 77 52 713 80
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 63 99 38 49 124 38 25 612 77 52 713 80
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
FinalVolume: 63 99 38 49 124 38 25 612 77 52 713 80
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.61 1.00 0.85 0.67 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.78 0.22 1.00 1.80 0.20
Final Sat.: 1157 1900 1615 1279 1900 1615 1805 3152 397 1805 3197 359
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.05 0.05 0.02 0.04 0.07 0.02 0.01 0.19 0.19 0.03 0.22 0.22
Crit Moves: **** *
Green/Cycle: 0.18 0.18 0.18 0.18 0.18 0.18 0.06 0.57 0.57 0.11 0.63 0.63
Volume/Cap: 0.30 0.28 0.13 0.21 0.35 0.13 0.24 0.34 0.34 0.25 0.35 0.35
Delay/Veh: 25.4 25.0 24.0 24.7 25.5 24.0 32.8 8.0 8.0 28.9 6.3 6.3
User DelAdj: 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: 25.4 25.0 24.0 24.7 25.5 24.0 32.8 8.0 8.0 28.9 6.3 6.3
LOS by Move: C C C C C C C A A C A A
HCM2k95thQ: 3 4 2 2 5 2 2 8 8 3 9 9

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 0.489
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 17.3
Optimal Cycle: 30 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 20 175 9 16 457 16 19 25 13 25 47 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

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.99 0.99 0.95 1.00 1.00 0.60 0.93 0.93 0.73 0.93 0.93

Capacity Analysis Module:
Vol/Sat: 0.01 0.10 0.10 0.01 0.27 0.27 0.02 0.03 0.03 0.02 0.06 0.06
Crit Moves: ****
Green/Cycle: 0.19 0.19 0.19 0.55 0.55 0.55 0.14 0.14 0.14 0.14 0.14 0.14

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 0.291
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.9
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:
Base Vol: 12 388 34 28 197 31 6 37 6 64 43 67
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

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.89 0.89 0.89 0.93 0.93 0.93 0.59 0.97 0.97 0.73 0.93 0.93

Capacity Analysis Module:
Vol/Sat: 0.14 0.14 0.14 0.17 0.17 0.17 0.01 0.03 0.03 0.05 0.09 0.09
Crit Moves: ****
Green/Cycle: 0.59 0.59 0.59 0.59 0.59 0.59 0.33 0.33 0.33 0.33 0.33 0.33

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: B[10.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include, Include, Include), Lanes (0 0 1 1 0, 0 1 0 0 0, 0 0 0 0 0, 0 0 0 0 1)

Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 0 406 37 33 321 0 0 0 0 0 0 0 54
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.17 1.17 1.17
Initial Bse: 0 406 37 33 321 0 0 0 0 0 0 63
Added Vol: 0 0 69 50 5 0 0 0 0 0 0 27
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 406 106 83 326 0 0 0 0 0 0 90
User Adj: 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
PHF Volume: 0 406 106 83 326 0 0 0 0 0 0 90
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 406 106 83 326 0 0 0 0 0 0 90

Critical Gap Module:
Critical Gap: xxxxx xxxxx xxxxx 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 6.2
FollowUpTim: xxxxx xxxxx xxxxx 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 3.3

Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxx 512 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 256
Potent Cap.: xxxxx xxxxx xxxxx 1064 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 788
Move Cap.: xxxxx xxxxx xxxxx 1064 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 788
Volume/Cap: xxxxx xxxxx xxxxx 0.08 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.11

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx 0.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.4
Control Del: xxxxx xxxxx xxxxx 8.7 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 10.2
LOS by Move: * * * A * * * * * * * * * * * B
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx
SharedQueue: xxxxx xxxxx xxxxx 0.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: xxxxx xxxxx xxxxx 8.7 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * A * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx xxxxxx 10.2
ApproachLOS: * * * * * B

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.430
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.8
Optimal Cycle: 39 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Split Phase, Split Phase, Split Phase, Split Phase), Rights (Include, Include, Ignore, Include), Lanes (0 1 1 0 0, 0 0 0 1 0, 1 0 0 0 1, 0 0 0 0 0)

Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 194 416 0 0 290 7 17 0 508 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
Initial Bse: 194 416 0 0 290 7 17 0 508 0 0 0
Added Vol: 0 16 0 0 5 0 54 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 194 432 0 0 295 7 71 0 508 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 194 432 0 0 295 7 71 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 194 432 0 0 295 7 71 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
FinalVolume: 194 432 0 0 295 7 71 0 0 0 0 0

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.94 0.94 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00
Lanes: 0.62 1.38 0.00 0.00 0.98 0.02 1.00 0.00 1.00 0.00 0.00
Final Sat.: 1102 2454 0 0 1850 44 1805 0 1900 0 0

Capacity Analysis Module:
Vol/Sat: 0.18 0.18 0.00 0.00 0.16 0.16 0.04 0.00 0.00 0.00 0.00
Crit Moves: **** *
Green/Cycle: 0.38 0.38 0.00 0.00 0.35 0.35 0.14 0.00 0.00 0.00 0.00
Volume/Cap: 0.46 0.46 0.00 0.00 0.46 0.46 0.28 0.00 0.00 0.00 0.00
Delay/Veh: 16.5 16.5 0.0 0.0 18.3 18.3 27.3 0.0 0.0 0.0 0.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 16.5 16.5 0.0 0.0 18.3 18.3 27.3 0.0 0.0 0.0 0.0
LOS by Move: B B A A B B C A A A A A
HCM2k95thQ: 11 11 0 0 11 11 3 0 0 0 0

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.350
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.8
Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.271
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.7
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.548
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.8
Optimal Cycle: 36 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and saturation flow data.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.383
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.1
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and saturation flow data.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.288
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 14.8
Optimal Cycle: 31 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.902
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 31.6
Optimal Cycle: 87 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: C[20.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module table with 11 columns and 11 rows showing traffic volume and adjustment factors.

Critical Gap Module table with 11 columns and 2 rows showing gap and follow-up time.

Capacity Module table with 11 columns and 5 rows showing conflict volume and capacity.

Level of Service Module table with 11 columns and 10 rows showing delay, LOS, and approach details.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: F[66.1]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module table with 11 columns and 11 rows showing traffic volume and adjustment factors.

Critical Gap Module table with 11 columns and 2 rows showing gap and follow-up time.

Capacity Module table with 11 columns and 5 rows showing conflict volume and capacity.

Level of Service Module table with 11 columns and 10 rows showing delay, LOS, and approach details.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.743
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 24.5
Optimal Cycle: 61 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various metrics like Base Vol, Growth Adj, 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, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.120
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 68.0
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various metrics like Base Vol, Growth Adj, 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, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.875
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 27.1
Optimal Cycle: 81 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and growth data across different approaches and movements.

Saturation Flow Module: Table with 12 columns for saturation flow data across different approaches and movements.

Capacity Analysis Module: Table with 12 columns for capacity analysis data across different approaches and movements.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.732
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.0
Optimal Cycle: 51 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and growth data across different approaches and movements.

Saturation Flow Module: Table with 12 columns for saturation flow data across different approaches and movements.

Capacity Analysis Module: Table with 12 columns for capacity analysis data across different approaches and movements.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.216
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.6
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 0 49 0 0 78 0 0 0 0 0 0 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 49 0 0 78 0 0 0 0 0 0 0 0 0
Added Vol: 4 178 23 4 224 3 4 13 2 31 14 6
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 4 227 23 4 302 3 4 13 2 31 14 6
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 4 254 26 4 338 3 4 15 2 35 16 7
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 4 254 26 4 338 3 4 15 2 35 16 7
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
FinalVolume: 4 254 26 4 338 3 4 15 2 35 16 7
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.54 1.00 0.85 0.60 1.00 0.85 0.75 0.98 0.98 0.75 0.96 0.96
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.87 0.13 1.00 0.70 0.30
Final Sat.: 1030 1900 1615 1131 1900 1615 1425 1614 248 1433 1270 544
Capacity Analysis Module:
Vol/Sat: 0.00 0.13 0.02 0.00 0.18 0.00 0.00 0.01 0.01 0.02 0.01 0.01
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.01 0.20 0.02 0.01 0.26 0.00 0.02 0.05 0.05 0.12 0.06 0.06
Delay/Veh: 2.6 3.0 2.6 2.6 3.2 2.6 16.1 16.2 16.2 16.6 16.3 16.3
User DelAdj: 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: 2.6 3.0 2.6 2.6 3.2 2.6 16.1 16.2 16.2 16.6 16.3 16.3
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 3 0 0 4 0 0 0 0 1 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.7]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 49 0 0 78 0 0 0 0 0 0 0 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 1.00
Initial Bse: 0 49 0 0 78 0 0 0 0 0 0 0 0 0 0
Added Vol: 8 201 0 0 254 3 4 0 6 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 250 0 0 332 3 4 0 6 0 0 0 0 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 9 280 0 0 372 3 4 0 7 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 280 0 0 372 3 4 0 7 0 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 375 xxxx xxxxx xxxx xxxx xxxxx 671 671 374 675 673 280
Potent Cap.: 1194 xxxx xxxxx xxxx xxxx xxxxx 425 380 677 371 379 764
Move Cap.: 1194 xxxx xxxxx xxxx xxxx xxxxx 422 377 677 365 376 764
Volume/Cap: 0.01 xxxx xxxxx xxxx xxxx xxxxx 0.01 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 8.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 545 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 8.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 11.7 xxxxx xxxxx xxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxx xxxxxx 11.7 xxxxxx
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1
Cycle (sec): 70 Critical Vol./Cap.(X): 0.794
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 53 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Lanes: 1 0 1 0 0 0 0 1 0 1 0 0 0 0 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 4 58 0 0 106 0 0 0 12 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: 4 58 0 0 106 0 0 0 12 0 0 0
Added Vol: 311 296 0 0 232 41 56 0 88 0 0 0
PasserByVol: 170 38 0 0 38 0 0 0 57 0 0 0
Initial Fut: 485 392 0 0 376 41 56 0 157 0 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 543 439 0 0 421 46 63 0 176 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 543 439 0 0 421 46 63 0 176 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
FinalVolume: 543 439 0 0 421 46 63 0 176 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.49 1.00 1.00 1.00 1.00 0.85 0.89 1.00 0.89 1.00 1.00 1.00
Lanes: 1.00 1.00 0.00 0.00 1.00 1.00 0.26 0.00 0.74 0.00 0.00 0.00
Final Sat.: 929 1900 0 0 1900 1615 444 0 1245 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.58 0.23 0.00 0.00 0.22 0.03 0.14 0.00 0.14 0.00 0.00 0.00
Crit Moves: ****
Green/Cycle: 0.74 0.74 0.00 0.00 0.74 0.74 0.18 0.00 0.18 0.00 0.00 0.00
Volume/Cap: 0.79 0.31 0.00 0.00 0.30 0.04 0.79 0.00 0.79 0.00 0.00 0.00
Delay/Veh: 12.2 3.3 0.0 0.0 3.2 2.5 41.1 0.0 41.1 0.0 0.0 0.0
User DelAdj: 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: 12.2 3.3 0.0 0.0 3.2 2.5 41.1 0.0 41.1 0.0 0.0 0.0
LOS by Move: B A A A A A D A D A A A
HCM2k95thQ: 18 7 0 0 6 1 14 0 14 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2
Average Delay (sec/veh): 4.3 Worst Case Level Of Service: D[29.4]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 58 0 0 106 0 0 0 0 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 58 0 0 106 0 0 0 0 0 0 0
Added Vol: 35 275 42 0 208 106 60 0 29 35 0 0
PasserByVol: 19 0 19 0 0 0 0 0 19 19 0 0
Initial Fut: 54 333 61 0 314 106 60 0 48 54 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 60 373 68 0 352 119 67 0 54 60 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 60 373 68 0 352 119 67 0 54 60 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 7.1 6.5 6.2 7.1 xxxx xxxxx
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 xxxx xxxxx
Capacity Module:
Cnflct Vol: 470 xxxx xxxxx xxxx xxxx xxxxx 939 973 411 966 xxxx xxxxx
Potent Cap.: 1102 xxxx xxxxx xxxx xxxx xxxxx 246 254 645 236 xxxx xxxxx
Move Cap.: 1102 xxxx xxxxx xxxx xxxx xxxxx 235 240 645 207 xxxx xxxxx
Volume/Cap: 0.05 xxxx xxxxx xxxx xxxx xxxxx 0.29 0.00 0.08 0.29 xxxx xxxxx
Level Of Service Module:
2Way95thQ: 0.2 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx 1.2 xxxx xxxxx
Control Del: 8.5 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx 29.4 xxxx xxxxx
LOS by Move: A * * * * * D * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 328 xxxxx xxxx xxxx xxxxx
SharedQueue:xxxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 1.6 xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 22.2 xxxxx xxxxx xxxx xxxxx
Shared LOS: * * * * * * * C * * *
ApproachDel: xxxxxxx xxxxxxx 22.2 29.4
ApproachLOS: * * C D
Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Option 3 10th-11th Avenue
 Baseline Saturday Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[14.2]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module: >> Count Date: 29 Mar 2005 <<

Base Vol:	14	254	0	0	280	16	7	0	9	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:	14	254	0	0	280	16	7	0	9	0	0	0
Added Vol:	0	28	0	0	37	52	44	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	282	0	0	317	68	51	0	9	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:	14	282	0	0	317	68	51	0	9	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	14	282	0	0	317	68	51	0	9	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	385	xxxx	xxxxx	xxxx	xxxx	xxxxx	661	661	351	xxxx	xxxx	xxxxx
Potent Cap.:	1185	xxxx	xxxxx	xxxx	xxxx	xxxxx	431	385	697	xxxx	xxxx	xxxxx
Move Cap.:	1185	xxxx	xxxxx	xxxx	xxxx	xxxxx	427	381	697	xxxx	xxxx	xxxxx
Volume/Cap:	0.01	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.12	0.00	0.01	xxxx	xxxx	xxxxx

Level Of Service Module:

2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	453	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.5	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	14.2	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			14.2		xxxxxxx			
ApproachLOS:	*			*			B		*			*

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.405
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 55 184 39 75 208 38 24 470 45 74 728 78
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: 55 184 39 75 208 38 24 470 45 74 728 78
Added Vol: 17 12 6 0 6 0 0 0 8 3 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 72 196 45 75 214 38 24 470 53 77 728 78
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: 72 196 45 75 214 38 24 470 53 77 728 78
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 72 196 45 75 214 38 24 470 53 77 728 78
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
FinalVolume: 72 196 45 75 214 38 24 470 53 77 728 78
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.49 1.00 0.85 0.52 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.80 0.20 1.00 1.81 0.19
Final Sat.: 931 1900 1615 988 1900 1615 1805 3196 360 1805 3212 344
Capacity Analysis Module:
Vol/Sat: 0.08 0.10 0.03 0.08 0.11 0.02 0.01 0.15 0.15 0.04 0.23 0.23
Crit Moves: ****
Green/Cycle: 0.27 0.27 0.27 0.27 0.27 0.27 0.06 0.50 0.50 0.10 0.54 0.54
Volume/Cap: 0.29 0.38 0.10 0.28 0.42 0.09 0.23 0.29 0.29 0.43 0.42 0.42
Delay/Veh: 20.8 21.3 19.3 20.7 21.6 19.2 32.7 10.3 10.3 31.2 9.6 9.6
User DelAdj: 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: 20.8 21.3 19.3 20.7 21.6 19.2 32.7 10.3 10.3 31.2 9.6 9.6
LOS by Move: C C B C C B C B B C A A
HCM2k95thQ: 3 7 2 3 8 1 2 7 7 4 11 11
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.534
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 20.2
Optimal Cycle: 33 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:0745

Table with 12 columns for traffic volumes and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.466
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.8
Optimal Cycle: 26 Level of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 0.618
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Phases.

Volume Module: >> Count Date: 18 Sep 2007 <<. Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for different lane configurations.

Capacity Analysis Module: Grid of capacity analysis data including delay, LOS, and approach delay.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th AV

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[12.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Volume Module: Grid of traffic volume data for various approaches and movements.

Critical Gap Module: Grid of critical gap data for different lane configurations.

Capacity Module: Grid of capacity analysis data including conflict volume, potential capacity, and move capacity.

Level of Service Module: Grid of level of service data including delay, LOS, and approach delay.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.581
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 16.9
Optimal Cycle: 39 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements and 10 rows of volume and adjustment factors.

Saturation Flow Module:

Table with 12 columns representing different traffic movements and 5 rows of saturation flow and adjustment factors.

Capacity Analysis Module:

Table with 12 columns representing different traffic movements and 10 rows of capacity analysis metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.601
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.1
Optimal Cycle: 32 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements and 10 rows of volume and adjustment factors.

Saturation Flow Module:

Table with 12 columns representing different traffic movements and 5 rows of saturation flow and adjustment factors.

Capacity Analysis Module:

Table with 12 columns representing different traffic movements and 10 rows of capacity analysis metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.477
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 10.0
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and adjustment factors.

Saturation Flow Module table with 12 columns and 4 rows showing adjustment factors and saturation flow.

Capacity Analysis Module table with 12 columns and 14 rows showing delay, LOS, and approach delay.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B[11.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and adjustment factors.

Critical Gap Module table with 12 columns and 3 rows showing critical gap and follow-up time.

Capacity Module table with 12 columns and 5 rows showing conflict volume, potential capacity, and move capacity.

Level of Service Module table with 12 columns and 10 rows showing delay, LOS, and approach delay.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy
Average Delay (sec/veh): 3.8 Worst Case Level Of Service: B[10.1]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 0 275 13 10 131 0 0 0 0 6 0 18
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: 0 275 13 10 131 0 0 0 0 6 0 18
Added Vol: 1 0 1 0 0 0 0 39 8 0 15 0
Diverted Tr: 0 -163 0 0 -118 0 0 0 0 -5 0 5
Initial Fut: 1 112 14 10 13 0 0 39 8 1 15 23
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: 1 112 14 10 13 0 0 39 8 1 15 23
Reduct Vol: 0 0 0 0 0 0 0 0 5 0 0 0
FinalVolume: 1 112 14 10 13 0 0 39 3 1 15 23
Critical Gap Module:
Critical Gap: 4.1 xxx xxx 4.1 xxx xxx xxx 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxx xxx 2.2 xxx xxx xxx 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Conflict Vol: 13 xxx xxx 126 xxx xxx xxx 161 13 175 154 119
Potent Cap.: 1619 xxx xxx 1473 xxx xxx xxx 735 1073 792 741 938
Move Cap.: 1619 xxx xxx 1473 xxx xxx xxx 729 1073 753 736 938
Volume/Cap: 0.00 xxx xxx 0.01 xxx xxx xxx 0.05 0.00 0.00 0.02 0.02
Level Of Service Module:
2Way95thQ: 0.0 xxx xxx 0.0 xxx xxx xxx xxx xxx xxx xxx
Control Del: 7.2 xxx xxx 7.5 xxx xxx xxx xxx xxx xxx xxx
LOS by Move: A * * A * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxx xxx xxx xxx xxx xxx 747 xxx 844 xxx
SharedQueue: xxx xxx xxx 0.0 xxx xxx xxx xxx 0.2 xxx 0.1 xxx
Shrd ConDel: xxx xxx xxx 7.5 xxx xxx xxx xxx 10.1 xxx 9.5 xxx
Shared LOS: * * * A * * * * * B * A *
ApproachDel: xxx xxx xxx 10.1 xxx 9.5
ApproachLOS: * * B A
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.536
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.8
Optimal Cycle: 27 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 10 0 0 10 0 0 0 0 0 4 0 10
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 523 143 25 188 0 0 0 0 43 0 29
Growth Adj: 1.14 1.14 1.14 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 596 163 25 188 0 0 0 0 43 0 29
Added Vol: 0 36 0 0 21 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 632 163 25 209 0 0 0 0 43 0 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: 0 632 163 25 209 0 0 0 0 43 0 29
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 632 163 25 209 0 0 0 0 43 0 29
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
FinalVolume: 0 632 163 25 209 0 0 0 0 43 0 29
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.97 0.97 0.92 0.92 1.00 1.00 1.00 1.00 0.92 1.00 0.92
Lanes: 0.00 0.80 0.20 0.11 0.89 0.00 0.00 0.00 0.00 0.60 0.00 0.40
Final Sat.: 0 1468 379 186 1553 0 0 0 0 1042 0 703
Capacity Analysis Module:
Vol/Sat: 0.00 0.43 0.43 0.13 0.13 0.00 0.00 0.00 0.00 0.04 0.00 0.04
Crit Moves: ****
Green/Cycle: 0.00 0.68 0.68 0.68 0.68 0.00 0.00 0.00 0.00 0.20 0.00 0.20
Volume/Cap: 0.00 0.63 0.63 0.20 0.20 0.00 0.00 0.00 0.00 0.21 0.00 0.21
Delay/Veh: 0.0 5.6 5.6 3.0 3.0 0.0 0.0 0.0 0.0 17.0 0.0 17.0
User DelAdj: 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 5.6 5.6 3.0 3.0 0.0 0.0 0.0 0.0 17.0 0.0 17.0
LOS by Move: A A A A A A A A A B A B
HCM2k95thQ: 0 15 15 3 3 0 0 0 0 2 0 2
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: A[9.1]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0).

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 3 columns for Critical Gap, FollowUpTim, and other metrics.

Capacity Module:

Table with 3 columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 3 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: A[9.2]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0).

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 3 columns for Critical Gap, FollowUpTim, and other metrics.

Capacity Module:

Table with 3 columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 3 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.807
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.9
Optimal Cycle: 63 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0715. Table with 10 columns for volume and 10 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 10 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 10 columns for Vol/Sat and 10 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.453
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.1
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 10 columns for volume and 10 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 10 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 10 columns for Vol/Sat and 10 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.660
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 21.0
Optimal Cycle: 50 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0715. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.754
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 16.0
Optimal Cycle: 54 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Apr 2005 << except thru movements. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: F[77.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 10 columns for volume counts and 10 rows for various traffic metrics.

Critical Gap Module: Table with 10 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 10 columns for capacity metrics and 5 rows for various capacity-related metrics.

Level of Service Module: Table with 10 columns for LOS metrics and 10 rows for various LOS-related metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: D[31.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 10 columns for volume counts and 10 rows for various traffic metrics.

Critical Gap Module: Table with 10 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 10 columns for capacity metrics and 5 rows for various capacity-related metrics.

Level of Service Module: Table with 10 columns for LOS metrics and 10 rows for various LOS-related metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.810
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 29.4
Optimal Cycle: 71 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.883
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 29.2
Optimal Cycle: 83 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.760
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.8
Optimal Cycle: 56 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.695
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.6
Optimal Cycle: 47 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0730. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.257
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.0
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 0 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 0 163 0 23 118 0 0 0 0 5 0 130
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: 0 163 0 23 118 0 0 0 0 5 0 130
Added Vol: 4 75 12 0 51 2 14 34 10 5 10 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 4 238 12 23 169 2 14 34 10 10 10 131
User Adj: 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07
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: 4 255 13 25 181 2 15 36 11 11 11 140
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 4 255 13 25 181 2 15 36 11 11 11 140
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
FinalVolume: 4 255 13 25 181 2 15 36 11 11 11 140
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.64 1.00 0.85 0.57 1.00 0.85 0.66 0.97 0.97 0.73 0.86 0.86
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.77 0.23 1.00 0.07 0.93
Final Sat.: 1208 1900 1615 1089 1900 1615 1245 1418 417 1387 116 1520
Capacity Analysis Module:
Vol/Sat: 0.00 0.13 0.01 0.02 0.10 0.00 0.01 0.03 0.03 0.01 0.09 0.09
Crit Moves: ****
Green/Cycle: 0.52 0.52 0.52 0.52 0.52 0.52 0.36 0.36 0.36 0.36 0.36 0.36
Volume/Cap: 0.01 0.26 0.02 0.04 0.18 0.00 0.03 0.07 0.07 0.02 0.26 0.26
Delay/Veh: 5.8 6.8 5.8 5.9 6.4 5.7 10.4 10.6 10.6 10.4 11.6 11.6
User DelAdj: 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: 5.8 6.8 5.8 5.9 6.4 5.7 10.4 10.6 10.6 10.4 11.6 11.6
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 5 0 0 3 0 0 1 1 0 4 4
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.5 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: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 163 0 0 123 0 0 0 0 0 0 0 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 1.00
Initial Bse: 0 163 0 0 123 0 0 0 0 0 0 0 0 0 0
Added Vol: 4 80 0 0 76 1 7 0 13 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 4 243 0 0 199 1 7 0 13 0 0 0 0
User Adj: 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07
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: 4 260 0 0 213 1 7 0 14 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 4 260 0 0 213 1 7 0 14 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 214 xxxx xxxxx xxxx xxxx xxxxx 482 482 213 489 483 260
Potent Cap.: 1368 xxxx xxxxx xxxx xxxx xxxxx 547 487 832 493 486 784
Move Cap.: 1368 xxxx xxxxx xxxx xxxx xxxxx 546 485 832 483 485 784
Volume/Cap: 0.00 xxxx xxxxx xxxx xxxx xxxxx 0.01 0.00 0.02 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 7.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A * * * * * * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 703 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 7.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 10.3 xxxxx xxxxx xxxx xxxxx
Shared LOS: A * * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 10.3 xxxxxx
ApproachLOS: * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3
Average Delay (sec/veh): 2.6 Worst Case Level Of Service: B[11.9]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
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: 0 163 0 0 123 0 0 0 0 0 0 0 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 1.00
Initial Bse: 0 163 0 0 123 0 0 0 0 0 0 0 0 0 0
Added Vol: 13 29 4 9 72 11 38 0 28 15 0 15
PasserByVol: 4 0 0 0 0 0 0 0 4 0 0 0 0 0
Initial Fut: 17 192 4 9 195 11 38 0 32 15 0 15
User Adj: 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07
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: 18 205 4 10 209 12 41 0 34 16 0 16
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 18 205 4 10 209 12 41 0 34 16 0 16
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxxx 4.1 xxxx xxxxxx 7.1 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxxx 2.2 xxxx xxxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 220 xxxx xxxxxx 210 xxxx xxxxxx 486 480 215 495 484 208
Potent Cap.: 1361 xxxx xxxxxx 1373 xxxx xxxxxx 495 488 830 488 486 838
Move Cap.: 1361 xxxx xxxxxx 1373 xxxx xxxxxx 478 478 830 461 476 838
Volume/Cap: 0.01 xxxx xxxxxx 0.01 xxxx xxxxxx 0.09 0.00 0.04 0.03 0.00 0.02
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxxx 0.0 xxxx xxxxxx xxxx xxxx xxxxxx xxxx xxxx xxxxxx
Control Del: 7.7 xxxx xxxxxx 7.6 xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx
LOS by Move: A * * A * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxxx xxxx xxxx xxxxxx xxxx 593 xxxxxx xxxx 595 xxxxxx
SharedQueue:xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx 0.4 xxxxxx xxxxxx 0.2 xxxxxx
Shrd ConDel:xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx 11.9 xxxxxx xxxxxx 11.4 xxxxxx
Shared LOS: * * * * * * * * * * * * * * * *
ApproachDel: xxxxxxx xxxxxxx 11.9 xxxxxxx 11.4
ApproachLOS: * * * * * * * * * * * * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C
Average Delay (sec/veh): 3.8 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: Yield Sign Yield Sign Yield Sign Yield Sign
Lanes: 1 1 1 1
Volume Module:
Base Vol: 13 163 0 0 123 0 0 0 65 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: 13 163 0 0 123 0 0 0 65 0 0 0
Added Vol: 6 46 0 0 115 0 0 0 22 0 0 0
PasserByVol: 0 4 0 0 4 0 0 0 0 0 0 0
Initial Fut: 19 213 0 0 242 0 0 0 87 0 0 0
User Adj: 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07 1.07
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: 20 228 0 0 259 0 0 0 93 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 20 228 0 0 259 0 0 0 93 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
FinalVolume: 20 228 0 0 259 0 0 0 93 0 0 0
PCE Module:
AutoPCE: 20 228 0 0 259 0 0 0 93 0 0 0
TruckPCE: 0 0 0 0 0 0 0 0 0 0 0 0
ComboPCE: 0 0 0 0 0 0 0 0 0 0 0 0
BicyclePCE: 0 0 0 0 0 0 0 0 0 0 0 0
AdjVolume: 20 228 0 0 259 0 0 0 93 0 0 0
Delay Module: >> Time Period: 0.25 hours <<
CircVolume: 0 20 259 248
MaxVolume: 1200 1189 1060 xxxxxxx
PedVolume: 0 0 0 0
AdjMaxVol: 1200 1189 1060 xxxxxxx
ApproachVol: 248 259 93 xxxxxxx
ApproachDel: 3.8 3.9 3.7 xxxxxxx
Queue: 0.8 0.8 0.3 xxxxx

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: B[11.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns and 12 rows of volume and adjustment data.

Critical Gap Module:

Table with 12 columns and 2 rows of critical gap and follow-up time data.

Capacity Module:

Table with 12 columns and 5 rows of capacity and volume/capacity data.

Level Of Service Module:

Table with 12 columns and 10 rows of level of service, delay, and LOS data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[14.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns and 12 rows of volume and adjustment data.

Critical Gap Module:

Table with 12 columns and 2 rows of critical gap and follow-up time data.

Capacity Module:

Table with 12 columns and 5 rows of capacity and volume/capacity data.

Level Of Service Module:

Table with 12 columns and 10 rows of level of service, delay, and LOS data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[15.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 10 660 0 0 225 6 6 0 14 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

Critical Gap Module:
Critical Gap: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 6.4 6.5 6.2 xxxxx xxxxx xxxxx
FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 xxxxx xxxxx xxxxx

Capacity Module:
Conflict Vol: 252 xxxxx xxxxx xxxxx xxxxx xxxxx 941 941 242 xxxxx xxxxx xxxxx
Potent Cap.: 1325 xxxxx xxxxx xxxxx xxxxx xxxxx 295 265 802 xxxxx xxxxx xxxxx

Level Of Service Module:
2Way95thQ: 0.0 xxxxx xxxxx
Control Del: 7.7 xxxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 389 xxxxx xxxxx xxxxx xxxxx
SharedQueue: 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.3 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 7.7 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 15.2 xxxxx xxxxx xxxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxxx xxxxxxx 15.2 xxxxxxx
ApproachLOS: * * * * *

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.621
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.2
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 56 162 71 158 409 36 35 790 101 101 905 80
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: 56 162 71 158 409 36 35 790 101 101 905 80
Added Vol: 16 11 5 0 16 0 0 0 22 7 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 72 173 76 158 425 36 35 790 123 108 905 80
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: 72 173 76 158 425 36 35 790 123 108 905 80
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 72 173 76 158 425 36 35 790 123 108 905 80
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
FinalVolume: 72 173 76 158 425 36 35 790 123 108 905 80
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.29 1.00 0.85 0.60 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.73 0.27 1.00 1.84 0.16
Final Sat.: 555 1900 1615 1132 1900 1615 1805 3061 477 1805 3277 290
Capacity Analysis Module:
Vol/Sat: 0.13 0.09 0.05 0.14 0.22 0.02 0.02 0.26 0.26 0.06 0.28 0.28
Crit Moves: ****
Green/Cycle: 0.36 0.36 0.36 0.36 0.36 0.36 0.09 0.42 0.42 0.10 0.43 0.43
Volume/Cap: 0.36 0.25 0.13 0.39 0.62 0.06 0.23 0.62 0.62 0.62 0.65 0.65
Delay/Veh: 17.6 16.0 15.2 17.3 20.2 14.7 30.6 17.0 17.0 37.2 16.9 16.9
User DelAdj: 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: 17.6 16.0 15.2 17.3 20.2 14.7 30.6 17.0 17.0 37.2 16.9 16.9
LOS by Move: B B B B C B C B D B B
HCM2k95thQ: 3 5 2 6 16 1 2 17 17 7 18 18
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.911
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 39.2
Optimal Cycle: 89 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:1700. Table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.514
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 27 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module. Table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 0.808
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Table with 12 columns for traffic flow. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module table with 12 columns for flow and 4 rows for Adjustment, Lanes, Final Sat., and Saturation Flow.

Capacity Analysis Module table with 12 columns for flow and 14 rows for Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: A[9.9]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Critical Gap Module table with 12 columns for flow and 2 rows for Critical Gap and FollowUpTim.

Capacity Module table with 12 columns for flow and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for flow and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.619
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.9
Optimal Cycle: 40 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach and movement.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for each approach and movement.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ for each approach and movement.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.573
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.1
Optimal Cycle: 30 Level of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach and movement.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for each approach and movement.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ for each approach and movement.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.728
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 15.1
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Phases.

Volume Module: >> Count Date: 18 Sep 2007 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for adjustment, lanes, and final saturation.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 12 rows for various performance metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[14.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Volume Module: Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Critical Gap Module: Table with 12 columns for critical gap and 3 rows for gap and follow-up time.

Capacity Module: Table with 12 columns for capacity and 4 rows for conflict, potential, and volume/capacity.

Level of Service Module: Table with 12 columns for LOS and 12 rows for various performance metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 5.9 Worst Case Level Of Service: A[9.9]

Table with 4 columns: Approach, Movement, Control, Rights, Lanes. Rows include North Bound, South Bound, East Bound, West Bound with various movement and control details.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume across four approaches.

Critical Gap Module table with columns for Critical Gap, FollowUpTim across four approaches.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap across four approaches.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS across four approaches.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.579
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.5
Optimal Cycle: 29 Level Of Service: A

Table with 4 columns: Approach, Movement, Control, Rights, Lanes. Rows include North Bound, South Bound, East Bound, West Bound with various movement and control details.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume across four approaches.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, Final Sat. across four approaches.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ across four approaches.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: A[8.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module table with columns for Critical Gp, FollowUpTim, and values (4.1, 2.2, 6.4, 3.5).

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. and values (32, 1593, 957, 0.00).

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: A[8.6]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module table with columns for Critical Gp, FollowUpTim, and values (4.1, 2.2, 6.4, 3.5).

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. and values (32, 1593, 949, 0.00).

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.735
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.2
Optimal Cycle: 52 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.516
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.0
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.812
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 25.5
Optimal Cycle: 70 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.996
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 37.7
Optimal Cycle: 141 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Apr 2005 << except thru movements. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.7]

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 columns for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with columns for Critical Gp, FollowUpTim, and various gap values.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[18.9]

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 columns for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with columns for Critical Gp, FollowUpTim, and various gap values.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.778
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 26.9
Optimal Cycle: 66 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.002
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 43.3
Optimal Cycle: 157 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.735
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 20.8
Optimal Cycle: 53 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.829
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.2
Optimal Cycle: 67 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1630. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.394
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.0
Optimal Cycle: 26 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 0 71 0 56 408 0 0 0 0 0 14 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
Initial Bse: 0 71 0 56 408 0 0 0 0 0 14 0 0
Added Vol: 8 100 8 1 125 6 7 16 8 13 29 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 171 8 57 533 6 7 16 8 27 29 1
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 9 200 9 67 624 7 8 19 9 32 34 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 9 200 9 67 624 7 8 19 9 32 34 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
FinalVolume: 9 200 9 67 624 7 8 19 9 32 34 1
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.36 1.00 0.85 0.63 1.00 0.85 0.74 0.95 0.95 0.75 1.00 1.00
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.67 0.33 1.00 0.97 0.03
Final Sat.: 675 1900 1615 1188 1900 1615 1404 1203 602 1416 1827 63
Capacity Analysis Module:
Vol/Sat: 0.01 0.11 0.01 0.06 0.33 0.00 0.01 0.02 0.02 0.02 0.02 0.02
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.02 0.15 0.01 0.08 0.48 0.01 0.03 0.08 0.08 0.11 0.09 0.09
Delay/Veh: 2.6 2.9 2.6 2.8 4.1 2.6 16.1 16.3 16.3 16.5 16.4 16.4
User DelAdj: 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: 2.6 2.9 2.6 2.8 4.1 2.6 16.1 16.3 16.3 16.5 16.4 16.4
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 2 0 1 10 0 0 1 1 1 1 1

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.3 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: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0
Volume Module:
Base Vol: 0 71 0 0 422 0 0 0 0 0 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 71 0 0 422 0 0 0 0 0 0 0 0
Added Vol: 11 121 0 0 141 4 3 0 6 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 11 192 0 0 563 4 3 0 6 0 0 0 0
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 13 225 0 0 659 5 4 0 7 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 13 225 0 0 659 5 4 0 7 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxx xxxx xxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxx xxxx xxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 663 xxxx xxxx xxxx xxxx 911 911 661 915 914 225
Potent Cap.: 935 xxxx xxxx xxxx xxxx 307 276 466 256 275 820
Move Cap.: 935 xxxx xxxx xxxx xxxx 304 272 466 249 271 820
Volume/Cap: 0.01 xxxx xxxx xxxx xxxx 0.01 0.00 0.02 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
Control Del: 8.9 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
LOS by Move: A * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx 395 xxxx xxxx 0 xxxx
SharedQueue: 0.0 xxxx xxxx xxxx xxxx xxxx 0.1 xxxx xxxx xxxx
Shrd ConDel: 8.9 xxxx xxxx xxxx xxxx xxxx 14.4 xxxx xxxx xxxx
Shared LOS: A * * * * * * B * * *
ApproachDel: xxxxxx xxxxxx 14.4 xxxxxx
ApproachLOS: * * B *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 5.5 Worst Case Level Of Service: D[34.8]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (1, 0, 2, 0, 0)

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: D[31.6]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0, 0, 1, 0, 0)

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[19.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 3 333 0 0 655 23 2 0 12 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

Critical Gap Module:
Critical Gap: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 6.4 6.5 6.2 xxxxx xxxxx xxxxx
FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 xxxxx xxxxx xxxxx

Capacity Module:
Cnflct Vol: 730 xxxxx xxxxx xxxxx xxxxx xxxxx 1053 1053 702 xxxxx xxxxx xxxxx
Potent Cap.: 883 xxxxx xxxxx xxxxx xxxxx xxxxx 253 228 442 xxxxx xxxxx xxxxx

Level Of Service Module:
2Way95thQ: 0.0 xxxxx xxxxx
Control Del: 9.1 xxxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 287 xxxxx xxxxx xxxxx xxxxx
SharedQueue: 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.5 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 9.1 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 19.7 xxxxx xxxxx xxxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxxx xxxxxxx 19.7 xxxxxxx
ApproachLOS: * * * * *

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.341
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 11.4
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 37 80 29 49 100 38 25 612 44 41 713 80
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 80 29 49 100 38 25 612 44 41 713 80
Added Vol: 18 13 6 0 15 0 0 0 0 21 7 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 55 93 35 49 115 38 25 612 65 48 713 80
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: 55 93 35 49 115 38 25 612 65 48 713 80
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 55 93 35 49 115 38 25 612 65 48 713 80
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
FinalVolume: 55 93 35 49 115 38 25 612 65 48 713 80
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.63 1.00 0.85 0.69 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.81 0.19 1.00 1.80 0.20
Final Sat.: 1189 1900 1615 1303 1900 1615 1805 3218 342 1805 3197 359
Capacity Analysis Module:
Vol/Sat: 0.05 0.05 0.02 0.04 0.06 0.02 0.01 0.19 0.19 0.03 0.22 0.22
Crit Moves: ****
Green/Cycle: 0.17 0.17 0.17 0.17 0.17 0.17 0.06 0.58 0.58 0.12 0.64 0.64
Volume/Cap: 0.27 0.28 0.12 0.22 0.35 0.14 0.24 0.33 0.33 0.23 0.35 0.35
Delay/Veh: 25.7 25.6 24.6 25.3 26.1 24.7 32.8 7.7 7.7 28.6 5.9 5.9
User DelAdj: 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: 25.7 25.6 24.6 25.3 26.1 24.7 32.8 7.7 7.7 28.6 5.9 5.9
LOS by Move: C C C C C C C A A C A A
HCM2k95thQ: 3 4 1 2 5 2 2 8 8 2 8 8
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.465
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 17.1
Optimal Cycle: 29 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.264
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.4
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: A[10.0]

Table with 4 columns: Approach, Movement, Control, Rights, Lanes. Rows include North Bound, South Bound, East Bound, West Bound with various control and lane configurations.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and growth factors across different approaches.

Critical Gap Module: Table with 2 columns for Critical Gap and FollowUpTim, with values ranging from 4.1 to 6.2.

Capacity Module: Table with 12 columns for various capacity metrics like Cnflct Vol, Potent Cap, Move Cap, Volume/Cap.

Level Of Service Module: Table with 12 columns for LOS by Move, Shared Cap, Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.410
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.5
Optimal Cycle: 39 Level Of Service: B

Table with 4 columns: Approach, Movement, Control, Rights, Lanes. Rows include North Bound, South Bound, East Bound, West Bound with various control and lane configurations.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and growth factors across different approaches.

Saturation Flow Module: Table with 12 columns for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.333
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.7
Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.249
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.534
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.6
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for saturation flow values and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis values and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.370
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.1
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for saturation flow values and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis values and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.269
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 12.7
Optimal Cycle: 31 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.675
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.8
Optimal Cycle: 45 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: D[25.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns for volume components and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: D[33.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 2 Apr 2005 << Table with 11 columns for volume components and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.698
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 24.3
Optimal Cycle: 55 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.042
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 50.6
Optimal Cycle: 180 Level of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.783
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.8
Optimal Cycle: 60 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow values and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis values and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.721
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.9
Optimal Cycle: 50 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow values and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis values and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G

Cycle (sec): 50 Critical Vol./Cap.(X): 0.165
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.9
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[10.6]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for Critical Gp and FollowUpTim.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3
Average Delay (sec/veh): 3.0 Worst Case Level Of Service: B[12.0]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
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: 0 49 0 0 78 0 0 0 0 0 0 0 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 49 0 0 78 0 0 0 0 0 0 0 0 0 0
Added Vol: 33 98 10 22 109 27 23 0 28 8 0 19
PasserByVol: 12 0 0 0 0 0 0 0 12 0 0 0
Initial Fut: 45 147 10 22 187 27 23 0 40 8 0 19
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 53 172 12 26 219 32 27 0 47 9 0 22
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 53 172 12 26 219 32 27 0 47 9 0 22
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxxx 4.1 xxxx xxxxxx 7.1 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxxx 2.2 xxxx xxxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 250 xxxx xxxxxx 184 xxxx xxxxxx 580 575 235 593 585 178
Potent Cap.: 1327 xxxx xxxxxx 1403 xxxx xxxxxx 428 431 809 421 426 870
Move Cap.: 1327 xxxx xxxxxx 1403 xxxx xxxxxx 399 406 809 378 401 870
Volume/Cap: 0.04 xxxx xxxxxx 0.02 xxxx xxxxxx 0.07 0.00 0.06 0.02 0.00 0.03
Level Of Service Module:
2Way95thQ: 0.1 xxxx xxxxxx 0.1 xxxx xxxxxx xxxx xxxx xxxxxx xxxx xxxx xxxxxx
Control Del: 7.8 xxxx xxxxxx 7.6 xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx
LOS by Move: A * * A * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxxx xxxx xxxx xxxxxx xxxx 588 xxxxxx xxxx 628 xxxxxx
SharedQueue:xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx 0.4 xxxxxx xxxxxx 0.2 xxxxxx
Shrd ConDel:xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx 12.0 xxxxxx xxxxxx 11.0 xxxxxx
Shared LOS: * * * * * * * * * * * * * * * *
ApproachDel: xxxxxxx xxxxxxx 12.0 11.0
ApproachLOS: * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C
Average Delay (sec/veh): 3.9 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: Yield Sign Yield Sign Yield Sign Yield Sign
Lanes: 1 1 1 1
Volume Module:
Base Vol: 9 49 0 0 78 0 0 0 28 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: 9 49 0 0 78 0 0 0 28 0 0 0
Added Vol: 14 141 0 0 145 0 0 0 9 0 0 0
PasserByVol: 0 12 0 0 12 0 0 0 0 0 0 0
Initial Fut: 23 202 0 0 235 0 0 0 37 0 0 0
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 27 236 0 0 275 0 0 0 43 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 27 236 0 0 275 0 0 0 43 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
FinalVolume: 27 236 0 0 275 0 0 0 43 0 0 0
PCE Module:
AutoPCE: 27 236 0 0 275 0 0 0 43 0 0 0
TruckPCE: 0 0 0 0 0 0 0 0 0 0 0 0
ComboPCE: 0 0 0 0 0 0 0 0 0 0 0 0
BicyclePCE: 0 0 0 0 0 0 0 0 0 0 0 0
AdjVolume: 27 236 0 0 275 0 0 0 43 0 0 0
Delay Module: >> Time Period: 0.25 hours <<
CircVolume: 0 275 263
MaxVolume: 1200 1185 1052 xxxxxxx
PedVolume: 0 0 0
AdjMaxVol: 1200 1185 1052 xxxxxxx
ApproachVol: 263 275 43 xxxxxxx
ApproachDel: 3.8 4.0 3.6 xxxxxxx
Queue: 0.8 0.9 0.1 xxxxx

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 5.5 Worst Case Level Of Service: C[19.5]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (1 0 2 0 0, 0 0 1 0 1, 0 0 1 0 0, 0 0 0 0 0)

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: C[16.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0, 0 0 0 1 0, 0 0 1 0 0, 1 0 0 0 0)

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Baseline Saturday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: B[13.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 14 254 0 0 280 16 7 0 9 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

Critical Gap Module:
Critical Gap: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 6.4 6.5 6.2 xxxxx xxxxx xxxxx
FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 xxxxx xxxxx xxxxx

Capacity Module:
Conflict Vol: 348 xxxxx xxxxx xxxxx xxxxx xxxxx 618 618 322 xxxxx xxxxx xxxxx
Potent Cap.: 1222 xxxxx xxxxx xxxxx xxxxx xxxxx 456 408 724 xxxxx xxxxx xxxxx

Level Of Service Module:
2Way95thQ: 0.0 xxxxx xxxxx
Control Del: 8.0 xxxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 487 xxxxx xxxxx xxxxx xxxxx
SharedQueue: 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.3 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 8.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 13.2 xxxxx xxxxx xxxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxxx xxxxxxx 13.2 xxxxxxx
ApproachLOS: * * * * *

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.405
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 55 184 39 75 208 38 24 470 45 74 728 78
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: 55 184 39 75 208 38 24 470 45 74 728 78
Added Vol: 17 12 6 0 6 0 0 0 8 3 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 72 196 45 75 214 38 24 470 53 77 728 78
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: 72 196 45 75 214 38 24 470 53 77 728 78
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 72 196 45 75 214 38 24 470 53 77 728 78
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
FinalVolume: 72 196 45 75 214 38 24 470 53 77 728 78
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.49 1.00 0.85 0.52 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.80 0.20 1.00 1.81 0.19
Final Sat.: 931 1900 1615 988 1900 1615 1805 3196 360 1805 3212 344
Capacity Analysis Module:
Vol/Sat: 0.08 0.10 0.03 0.08 0.11 0.02 0.01 0.15 0.15 0.04 0.23 0.23
Crit Moves: ****
Green/Cycle: 0.27 0.27 0.27 0.27 0.27 0.27 0.06 0.50 0.50 0.10 0.54 0.54
Volume/Cap: 0.29 0.38 0.10 0.28 0.42 0.09 0.23 0.29 0.29 0.43 0.42 0.42
Delay/Veh: 20.8 21.3 19.3 20.7 21.6 19.2 32.7 10.3 10.3 31.2 9.6 9.6
User DelAdj: 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: 20.8 21.3 19.3 20.7 21.6 19.2 32.7 10.3 10.3 31.2 9.6 9.6
LOS by Move: C C B C C B C B B C A A
HCM2kAvgQ: 2 4 1 2 4 1 1 4 4 2 6 6
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.535
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 20.3
Optimal Cycle: 33 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:0745

Table with 12 columns for traffic volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.468
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.8
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 0.624
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 12.7
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Min. Green.

Table with 12 columns for volume and saturation flow. Rows include Volume Module and Saturation Flow Module.

Table with 12 columns for capacity analysis. Rows include Capacity Analysis Module.

Table with 12 columns for delay and LOS. Rows include Delay/Veh, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th AV

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[12.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Table with 12 columns for volume and saturation flow. Rows include Volume Module and Saturation Flow Module.

Table with 12 columns for capacity analysis. Rows include Capacity Analysis Module.

Table with 12 columns for delay and LOS. Rows include Delay/Veh, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

Table with 12 columns for delay and LOS. Rows include Delay/Veh, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.582
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 16.9
Optimal Cycle: 39 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.601
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.1
Optimal Cycle: 32 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.479
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for movement counts and 12 columns for volume module data. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for adjustment factors and 12 columns for final saturation values.

Capacity Analysis Module table with 12 columns for delay and LOS by approach, and 12 columns for LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B[11.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for movement counts and 12 columns for volume module data. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for gap values and 12 columns for follow-up time values.

Capacity Module table with 12 columns for conflict volume, potential capacity, move capacity, and volume/capacity.

Level of Service Module table with 12 columns for delay and LOS by approach, and 12 columns for LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: A[9.1]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0).

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume counts and 12 rows for various adjustments like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 3 columns for gap values (4.1, 6.4, 6.5, 6.2) and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 12 columns for capacity values and 5 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module: Table with 12 columns for LOS values and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: A[9.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0).

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume counts and 12 rows for various adjustments like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 3 columns for gap values (4.1, 6.4, 6.5, 6.2) and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 12 columns for capacity values and 5 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module: Table with 12 columns for LOS values and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.807
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.9
Optimal Cycle: 63 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0715. Table with 12 columns for volume and 12 columns for growth/initial BSE/added volume/passers by volume/initial future volume/user adjustment/PHF adjustment/PHF volume/reduced volume/PCE adjustment/MLF adjustment/final volume.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.452
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.1
Optimal Cycle: 44 Level of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 columns for growth/initial BSE/added volume/passers by volume/initial future volume/user adjustment/PHF adjustment/PHF volume/reduced volume/PCE adjustment/MLF adjustment/final volume.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.591
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 20.2
Optimal Cycle: 54 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0715. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.747
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.8
Optimal Cycle: 53 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Apr 2005 << except thru movements. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: F[76.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 10 columns for volume counts and 10 rows for various traffic metrics.

Critical Gap Module: Table with 10 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 10 columns for capacity metrics and 4 rows for Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 10 columns for LOS metrics and 6 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., and Shared Queue.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: D[31.5]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 10 columns for volume counts and 10 rows for various traffic metrics.

Critical Gap Module: Table with 10 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 10 columns for capacity metrics and 4 rows for Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 10 columns for LOS metrics and 6 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., and Shared Queue.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.763
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 27.9
Optimal Cycle: 63 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume and 12 columns for various adjustment factors.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.881
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 29.1
Optimal Cycle: 83 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume and 12 columns for various adjustment factors.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.760
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.8
Optimal Cycle: 56 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume and 12 columns for saturation flow.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.695
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.6
Optimal Cycle: 47 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0730. Table with 12 columns for volume and 12 columns for saturation flow.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.258
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.0
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 0 4 10 0 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 0 163 0 23 118 0 0 0 0 5 0 130
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: 0 163 0 23 118 0 0 0 0 5 0 130
Added Vol: 4 79 12 0 48 2 14 34 10 3 11 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 4 242 12 23 166 2 14 34 10 8 11 131
User Adj: 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06
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: 4 257 13 24 176 2 15 36 11 8 12 139
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 4 257 13 24 176 2 15 36 11 8 12 139
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
FinalVolume: 4 257 13 24 176 2 15 36 11 8 12 139
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.64 1.00 0.85 0.57 1.00 0.85 0.66 0.97 0.97 0.73 0.86 0.86
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.77 0.23 1.00 0.08 0.92
Final Sat.: 1214 1900 1615 1085 1900 1615 1245 1418 417 1387 127 1511
Capacity Analysis Module:
Vol/Sat: 0.00 0.14 0.01 0.02 0.09 0.00 0.01 0.03 0.03 0.01 0.09 0.09
Crit Moves: ****
Green/Cycle: 0.52 0.52 0.52 0.52 0.52 0.52 0.36 0.36 0.36 0.36 0.36 0.36
Volume/Cap: 0.01 0.26 0.02 0.04 0.18 0.00 0.03 0.07 0.07 0.02 0.26 0.26
Delay/Veh: 5.7 6.7 5.7 5.8 6.3 5.7 10.5 10.7 10.7 10.4 11.6 11.6
User DelAdj: 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: 5.7 6.7 5.7 5.8 6.3 5.7 10.5 10.7 10.7 10.4 11.6 11.6
LOS by Move: A A A A A A B B B B B B
HCM2kAvgQ: 0 2 0 0 1 0 0 1 1 0 2 2
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[10.4]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1! 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 0 163 0 0 123 0 0 0 0 0 0 0 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: 0 163 0 0 123 0 0 0 0 0 0 0 0 0 0
Added Vol: 6 79 0 0 76 2 10 0 18 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 6 242 0 0 199 2 10 0 18 0 0 0
User Adj: 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06
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: 6 257 0 0 211 2 11 0 19 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 6 257 0 0 211 2 11 0 19 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 213 xxxx xxxxx xxxx xxxx xxxxx 481 481 212 491 482 257
Potent Cap.: 1369 xxxx xxxxx xxxx xxxx xxxxx 547 487 833 491 487 787
Move Cap.: 1369 xxxx xxxxx xxxx xxxx xxxxx 545 485 833 478 484 787
Volume/Cap: 0.00 xxxx xxxxx xxxx xxxx xxxxx 0.02 0.00 0.02 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 7.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A * * * * * * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 701 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 7.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 10.4 xxxxx xxxxx xxxx xxxxx
Shared LOS: A * * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 10.4 xxxxxx
ApproachLOS: * * * * * * * * * * * * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: B[11.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 3.8 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

PCE Module:

Table with 12 columns for PCE metrics and 5 rows for AutoPCE, TruckPCE, ComboPCE, BicyclePCE, AdjVolume.

Delay Module: >> Time Period: 0.25 hours <<

Table with 4 columns for delay metrics and 5 rows for CircVolume, MaxVolume, PedVolume, AdjMaxVol, etc.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: B[11.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (1 0 2 0 0, 0 0 1 0 1, 0 0 1 0 0, 0 0 0 0 0)

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[14.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0, 0 0 0 1 0, 0 0 1 0 0, 1 0 0 0 0)

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative B
 Baseline AM Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: C[15.3]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module: >> Count Date: 29 Mar 2005 <<

Base Vol:	10	660	0	0	225	6	6	0	14	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:	10	660	0	0	225	6	6	0	14	0	0	0
Added Vol:	0	20	0	0	6	14	17	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	680	0	0	231	20	23	0	14	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:	10	680	0	0	231	20	23	0	14	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	10	680	0	0	231	20	23	0	14	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	251	xxxx	xxxxx	xxxx	xxxx	xxxxx	941	941	241	xxxx	xxxx	xxxxx
Potent Cap.:	1326	xxxx	xxxxx	xxxx	xxxx	xxxxx	295	265	803	xxxx	xxxx	xxxxx
Move Cap.:	1326	xxxx	xxxxx	xxxx	xxxx	xxxxx	293	263	803	xxxx	xxxx	xxxxx
Volume/Cap:	0.01	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.08	0.00	0.02	xxxx	xxxx	xxxxx

Level Of Service Module:

2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	386	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	15.3	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			15.3			xxxxxxx		
ApproachLOS:	*			*			C			*		

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.621
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.2
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 56 162 71 158 409 36 35 790 101 101 905 80
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: 56 162 71 158 409 36 35 790 101 101 905 80
Added Vol: 15 10 5 0 15 0 0 0 22 7 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 71 172 76 158 424 36 35 790 123 108 905 80
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: 71 172 76 158 424 36 35 790 123 108 905 80
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 71 172 76 158 424 36 35 790 123 108 905 80
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
FinalVolume: 71 172 76 158 424 36 35 790 123 108 905 80
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.29 1.00 0.85 0.60 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.73 0.27 1.00 1.84 0.16
Final Sat.: 557 1900 1615 1134 1900 1615 1805 3061 477 1805 3277 290
Capacity Analysis Module:
Vol/Sat: 0.13 0.09 0.05 0.14 0.22 0.02 0.02 0.26 0.26 0.06 0.28 0.28
Crit Moves: ****
Green/Cycle: 0.36 0.36 0.36 0.36 0.36 0.36 0.09 0.42 0.42 0.10 0.43 0.43
Volume/Cap: 0.35 0.25 0.13 0.39 0.62 0.06 0.23 0.62 0.62 0.62 0.65 0.65
Delay/Veh: 17.5 16.0 15.2 17.3 20.3 14.7 30.6 16.9 16.9 37.1 16.9 16.9
User DelAdj: 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: 17.5 16.0 15.2 17.3 20.3 14.7 30.6 16.9 16.9 37.1 16.9 16.9
LOS by Move: B B B B C B C B D B B
HCM2k95thQ: 3 5 2 6 16 1 2 17 17 7 18 18
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.909
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 39.2
Optimal Cycle: 88 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: 1700. Table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.512
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 27 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module. Table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 0.806
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 18.3
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Min. Green.

Volume Module: >> Count Date: 18 Sep 2007 << 1645. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for adjustment, lanes, and final saturation.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 12 rows for various traffic metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: A[9.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module: Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Critical Gap Module: Table with 12 columns for critical gap and 2 rows for gap and follow-up time.

Capacity Module: Table with 12 columns for capacity and 4 rows for conflict, potent, move, and volume/capacity.

Level of Service Module: Table with 12 columns for level of service and 12 rows for various traffic metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.619
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.9
Optimal Cycle: 40 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns representing different traffic movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing different traffic movements. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.573
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.1
Optimal Cycle: 30 Level of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns representing different traffic movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing different traffic movements. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.718
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 14.8
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for movement counts and 12 columns for volume module data. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for movement counts and 12 columns for saturation flow data.

Capacity Analysis Module table with 12 columns for movement counts and 12 columns for capacity analysis data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[14.2]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for movement counts and 12 columns for volume module data. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for movement counts and 12 columns for critical gap data.

Capacity Module table with 12 columns for movement counts and 12 columns for capacity module data.

Level of Service Module table with 12 columns for movement counts and 12 columns for level of service data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 5.9 Worst Case Level Of Service: A[9.9]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0, 1, 0, 0).

Table with 12 columns: Volume Module, Count, Date (29 Mar 2005), Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Table with 12 columns: Critical Gap Module, Critical Gap, FollowUpTim.

Table with 12 columns: Capacity Module, Conflict Vol, Potent Cap., Move Cap., Volume/Cap.

Table with 12 columns: Level of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.578
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.5
Optimal Cycle: 29 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Permitted, Split Phase), Rights (Include), Lanes (0, 1, 0, 0).

Table with 12 columns: Volume Module, Count, Date (29 Mar 2005), Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with 12 columns: Saturation Flow Module, Sat/Lane, Adjustment, Lanes, Final Sat.

Table with 12 columns: Capacity Analysis Module, Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: A[8.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0)

Volume Module: >> Count Date: 1 Sep 1997 <<
Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Critical Gap Module:
Table with 3 columns for gap values and 3 rows for Critical Gp and FollowUpTim.

Capacity Module:
Table with 3 columns for capacity values and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:
Table with 12 columns for LOS values and 12 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[12.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0)

Volume Module: >> Count Date: 29 Mar 2005 <<
Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Critical Gap Module:
Table with 3 columns for gap values and 3 rows for Critical Gp and FollowUpTim.

Capacity Module:
Table with 3 columns for capacity values and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:
Table with 12 columns for LOS values and 12 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.733
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.1
Optimal Cycle: 51 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for various capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.513
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.0
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for various capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.609
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 54 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.964
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 32.5
Optimal Cycle: 116 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements. Table with 12 columns for volume and 12 columns for adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[12.6]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with columns for Critical Gp, FollowUpTim, and various delay values.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[18.6]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with columns for Critical Gp, FollowUpTim, and various delay values.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.717
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 25.2
Optimal Cycle: 57 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.995
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 41.9
Optimal Cycle: 149 Level of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.730
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 20.6
Optimal Cycle: 52 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and 3 rows: Movement (L, T, R), Control (Permitted, Protected), and Rights (Include).

Volume Module: >> Count Date: 19 Sep 2007 << 1700

Table with 12 columns for traffic volume and 12 columns for saturation flow, including rows for 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, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.827
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.1
Optimal Cycle: 67 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and 3 rows: Movement (L, T, R), Control (Protected, Split Phase), and Rights (Include).

Volume Module: >> Count Date: 18 Sep 2007 << 1630

Table with 12 columns for traffic volume and 12 columns for saturation flow, including rows for 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, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.387
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.0
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 0 4 10 0 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0
Volume Module:
Base Vol: 0 71 0 56 408 0 0 0 0 14 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 71 0 56 408 0 0 0 0 14 0 0
Added Vol: 8 90 6 1 117 6 7 17 9 11 32 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 161 6 57 525 6 7 17 9 25 32 1
User Adj: 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16
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: 9 187 7 66 609 7 8 20 10 29 37 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 9 187 7 66 609 7 8 20 10 29 37 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
FinalVolume: 9 187 7 66 609 7 8 20 10 29 37 1
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.37 1.00 0.85 0.63 1.00 0.85 0.74 0.95 0.95 0.74 1.00 1.00
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.65 0.35 1.00 0.97 0.03
Final Sat.: 694 1900 1615 1203 1900 1615 1400 1178 623 1412 1835 57
Capacity Analysis Module:
Vol/Sat: 0.01 0.10 0.00 0.05 0.32 0.00 0.01 0.02 0.02 0.02 0.02 0.02
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.02 0.14 0.01 0.08 0.47 0.01 0.03 0.08 0.08 0.10 0.10 0.10
Delay/Veh: 2.6 2.9 2.6 2.8 4.0 2.6 16.1 16.4 16.4 16.5 16.4 16.4
User DelAdj: 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: 2.6 2.9 2.6 2.8 4.0 2.6 16.1 16.4 16.4 16.5 16.4 16.4
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 2 0 1 10 0 0 1 1 1 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.4 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: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0
Volume Module:
Base Vol: 0 71 0 0 422 0 0 0 0 0 0 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 1.00
Initial Bse: 0 71 0 0 422 0 0 0 0 0 0 0 0 0
Added Vol: 16 111 0 0 130 6 5 0 9 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 16 182 0 0 552 6 5 0 9 0 0 0 0
User Adj: 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16
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: 19 211 0 0 640 7 6 0 10 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 19 211 0 0 640 7 6 0 10 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxx xxxx xxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxx xxxx xxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 647 xxxx xxxx xxxx xxxx 892 892 644 897 896 211
Potent Cap.: 948 xxxx xxxx xxxx xxxx 315 283 477 263 282 834
Move Cap.: 948 xxxx xxxx xxxx xxxx 310 278 477 253 276 834
Volume/Cap: 0.02 xxxx xxxx xxxx xxxx 0.02 0.00 0.02 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.1 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
Control Del: 8.9 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx
LOS by Move: A * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxx xxxx xxxx xxxx xxxx 400 xxxx xxxx 0 xxxx
SharedQueue: 0.1 xxxx xxxx xxxx xxxx xxxx xxxx 0.1 xxxx xxxx xxxx xxxx
Shrd ConDel: 8.9 xxxx xxxx xxxx xxxx xxxx xxxx 14.4 xxxx xxxx xxxx xxxx
Shared LOS: A * * * * * B * * * *
ApproachDel: xxxxxx xxxxxx 14.4 xxxxxx
ApproachLOS: * * B *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: C[17.9]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), and Lanes (0, 1, 0, 0).

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each approach.

Critical Gap Module table showing Critical Gap and FollowUpTim for each approach.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for each approach.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 5.6 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L-T-R), Control (Yield Sign), and Lanes (1).

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach.

PCE Module table showing AutoPCE, TruckPCE, ComboPCE, BicyclePCE, and AdjVolume for each approach.

Delay Module table showing CircVolume, MaxVolume, PedVolume, AdjMaxVol, ApproachVol, ApproachDel, and Queue for each approach.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 5.4 Worst Case Level Of Service: D[28.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: C[24.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: C[19.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<
Table with 11 columns for different traffic movements and 11 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:
Table with 11 columns for traffic movements and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:
Table with 11 columns for traffic movements and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:
Table with 11 columns for traffic movements and 10 rows for various LOS metrics like 2Way95thQ, Control Del, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Reduced Commercial - Alternative B
 Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

Curtis Park Village
 Reduced Commercial - Alternative B
 Baseline Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #1 24th St / Broadway

 Cycle (sec): 70 Critical Vol./Cap.(X): 0.341
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 11.3
 Optimal Cycle: 43 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: Permitted Permitted Protected Protected
 Rights: Include Include Include Include
 Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
 Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
 -----|-----|-----|-----|
 Volume Module: >> Count Date: 2 Apr 2005 <<
 Base Vol: 37 80 29 49 100 38 25 612 44 41 713 80
 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 80 29 49 100 38 25 612 44 41 713 80
 Added Vol: 17 12 6 0 14 0 0 0 19 7 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 54 92 35 49 114 38 25 612 63 48 713 80
 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: 54 92 35 49 114 38 25 612 63 48 713 80
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 54 92 35 49 114 38 25 612 63 48 713 80
 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
 FinalVolume: 54 92 35 49 114 38 25 612 63 48 713 80
 -----|-----|-----|-----|
 Saturation Flow Module:
 Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
 Adjustment: 0.63 1.00 0.85 0.69 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
 Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.81 0.19 1.00 1.80 0.20
 Final Sat.: 1193 1900 1615 1309 1900 1615 1805 3227 332 1805 3197 359
 -----|-----|-----|-----|
 Capacity Analysis Module:
 Vol/Sat: 0.05 0.05 0.02 0.04 0.06 0.02 0.01 0.19 0.19 0.03 0.22 0.22
 Crit Moves: **** *
 Green/Cycle: 0.17 0.17 0.17 0.17 0.17 0.17 0.06 0.58 0.58 0.12 0.64 0.64
 Volume/Cap: 0.26 0.28 0.13 0.22 0.35 0.14 0.24 0.33 0.33 0.23 0.35 0.35
 Delay/Veh: 25.8 25.6 24.7 25.4 26.1 24.8 32.8 7.6 7.6 28.6 5.9 5.9
 User DelAdj: 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: 25.8 25.6 24.7 25.4 26.1 24.8 32.8 7.6 7.6 28.6 5.9 5.9
 LOS by Move: C C C C C C C A A C A A
 HCM2k95thQ: 3 4 1 2 5 2 2 8 8 2 8 8

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 0.463
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 17.1
Optimal Cycle: 29 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 20 175 9 16 457 16 19 25 13 25 47 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

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.99 0.99 0.95 1.00 1.00 0.67 0.94 0.94 0.73 0.94 0.94

Capacity Analysis Module:
Vol/Sat: 0.01 0.10 0.10 0.01 0.26 0.26 0.02 0.02 0.02 0.02 0.05 0.05
Crit Moves: ****
Green/Cycle: 0.20 0.20 0.20 0.54 0.54 0.54 0.14 0.14 0.14 0.14 0.14 0.14

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 0.261
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.4
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:
Base Vol: 12 388 34 28 197 31 6 37 6 64 43 67
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

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.89 0.89 0.89 0.93 0.93 0.93 0.63 0.98 0.98 0.73 0.92 0.92

Capacity Analysis Module:
Vol/Sat: 0.13 0.13 0.13 0.16 0.16 0.16 0.01 0.02 0.02 0.05 0.08 0.08
Crit Moves: ****
Green/Cycle: 0.61 0.61 0.61 0.61 0.61 0.61 0.31 0.31 0.31 0.31 0.31 0.31

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: A[10.0]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include, Include), Lanes (0 0 1 1 0, etc.)

Volume Module: >> Count Date: 2 Apr 2005 <<
Table with 12 columns for volume counts and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:
Table with 2 columns for Critical Gap and FollowUpTim, and 12 rows for various metrics.

Capacity Module:
Table with 12 columns for capacity metrics and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:
Table with 12 columns for LOS metrics and 4 rows for 2Way95thQ, Control Del, LOS by Move, and Movement.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.409
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.5
Optimal Cycle: 39 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Split Phase, Split Phase, Split Phase, Split Phase), Rights (Include, Include, Ignore, Include), Lanes (0 1 1 0 0, etc.)

Volume Module: >> Count Date: 2 Apr 2005 <<
Table with 12 columns for volume counts and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:
Table with 12 columns for Sat/Lane and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:
Table with 12 columns for capacity metrics and 4 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.344
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.5
Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.246
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.531
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.5
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.367
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.1
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.271
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 12.0
Optimal Cycle: 54 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.624
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 16.3
Optimal Cycle: 41 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume counts and 12 rows for various traffic metrics like Base Vol, Growth Adj, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: D[25.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns for traffic volumes and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: D[30.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 2 Apr 2005 << Table with 11 columns for traffic volumes and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.688
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 24.0
Optimal Cycle: 54 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.029
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 48.3
Optimal Cycle: 180 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.776
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.0
Optimal Cycle: 59 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and saturation flow data.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.719
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.9
Optimal Cycle: 50 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and saturation flow data.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.156
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.1
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 0 1 0 1 0 0 1 0 1 0 0
Volume Module:
Base Vol: 0 49 0 0 78 0 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 49 0 0 78 0 0 0 0 0 0 0 0 0 0 0
Added Vol: 7 101 7 1 116 5 9 20 9 8 24 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 7 150 7 1 194 5 9 20 9 8 24 1
User Adj: 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16
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
PHF Volume: 8 174 8 1 225 6 10 23 10 9 28 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 8 174 8 1 225 6 10 23 10 9 28 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 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 1.00 1.00
FinalVolume: 8 174 8 1 225 6 10 23 10 9 28 1
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.61 1.00 0.85 0.64 1.00 0.85 0.74 0.95 0.95 0.74 0.99 0.99
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.69 0.31 1.00 0.96 0.04
Final Sat.: 1161 1900 1615 1218 1900 1615 1414 1250 563 1406 1813 76
Capacity Analysis Module:
Vol/Sat: 0.01 0.09 0.01 0.00 0.12 0.00 0.01 0.02 0.02 0.01 0.02 0.02
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.01 0.13 0.01 0.00 0.17 0.01 0.04 0.09 0.09 0.03 0.08 0.08
Delay/Veh: 2.6 2.9 2.6 2.6 3.0 2.6 16.2 16.4 16.4 16.2 16.3 16.3
User DelAdj: 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: 2.6 2.9 2.6 2.6 3.0 2.6 16.2 16.4 16.4 16.2 16.3 16.3
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 2 0 0 3 0 0 1 1 0 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[10.4]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0
Volume Module:
Base Vol: 0 49 0 0 78 0 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 49 0 0 78 0 0 0 0 0 0 0 0 0 0 0
Added Vol: 14 114 0 0 130 5 7 0 12 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 14 163 0 0 208 5 7 0 12 0 0 0 0
User Adj: 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16
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
PHF Volume: 16 189 0 0 241 6 8 0 14 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 16 189 0 0 241 6 8 0 14 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 247 xxxx xxxxx xxxxx xxxxx xxxxx 466 466 244 473 469 189
Potent Cap.: 1331 xxxx xxxxx xxxxx xxxxx xxxxx 559 497 800 505 495 858
Move Cap.: 1331 xxxx xxxxx xxxxx xxxxx xxxxx 554 491 800 492 489 858
Volume/Cap: 0.01 xxxx xxxxx xxxxx xxxxx xxxxx 0.01 0.00 0.02 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: 7.7 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxxx xxxxx xxxxx 687 xxxxx xxxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 7.7 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx 10.4 xxxxx xxxxx xxxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxx xxxxxx 10.4 xxxxxx
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3
Average Delay (sec/veh): 1.6 Worst Case Level Of Service: B[11.6]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
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: 0 49 0 0 78 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 49 0 0 78 0 0 0 0 0 0 0 0 0 0
Added Vol: 14 106 11 9 115 20 17 0 12 9 0 8
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 14 155 11 9 193 20 17 0 12 9 0 8
User Adj: 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16
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
PHF Volume: 16 180 13 10 224 23 20 0 14 10 0 9
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 16 180 13 10 224 23 20 0 14 10 0 9
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx 4.1 xxxx xxxxx 7.1 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx 2.2 xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 247 xxxx xxxxx 193 xxxx xxxxx 480 481 235 482 487 186
Potent Cap.: 1331 xxxx xxxxx 1393 xxxx xxxxx 500 487 809 498 484 861
Move Cap.: 1331 xxxx xxxxx 1393 xxxx xxxxx 487 478 809 482 474 861
Volume/Cap: 0.01 xxxx xxxxx 0.01 xxxx xxxxx 0.04 0.00 0.02 0.02 0.00 0.01
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 7.7 xxxx xxxxx 7.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A * * A * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 583 xxxxx xxxx 608 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.2 xxxxx xxxxx 0.1 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 11.6 xxxxx xxxxx 11.1 xxxxx
Shared LOS: * * * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 11.6 xxxxxx 11.1
ApproachLOS: * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C
Average Delay (sec/veh): 3.8 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: Yield Sign Yield Sign Yield Sign Yield Sign
Lanes: 1 1 1 1
Volume Module:
Base Vol: 9 49 0 0 78 0 0 0 28 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: 9 49 0 0 78 0 0 0 28 0 0 0
Added Vol: 16 130 0 0 136 0 0 0 11 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 25 179 0 0 214 0 0 0 39 0 0 0
User Adj: 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16
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: 29 208 0 0 248 0 0 0 45 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 29 208 0 0 248 0 0 0 45 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
FinalVolume: 29 208 0 0 248 0 0 0 45 0 0 0
PCE Module:
AutoPCE: 29 208 0 0 248 0 0 0 45 0 0 0
TruckPCE: 0 0 0 0 0 0 0 0 0 0 0 0
ComboPCE: 0 0 0 0 0 0 0 0 0 0 0 0
BicyclePCE: 0 0 0 0 0 0 0 0 0 0 0 0
AdjVolume: 29 208 0 0 248 0 0 0 45 0 0 0
Delay Module: >> Time Period: 0.25 hours <<
CircVolume: 0 29 248 237
MaxVolume: 1200 1184 1066 xxxxxx
PedVolume: 0 0 0 0
AdjMaxVol: 1200 1184 1066 xxxxxx
ApproachVol: 237 248 45 xxxxxx
ApproachDel: 3.7 3.8 3.5 xxxxxx
Queue: 0.7 0.8 0.1 xxxxx

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 5.7 Worst Case Level Of Service: C[15.9]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Volume Module table with 12 columns for traffic volume and 12 columns for adjustment factors.

Critical Gap Module table with 12 columns for gap and follow-up times.

Capacity Module table with 12 columns for conflict, potent, and move capacity.

Level of Service Module table with 12 columns for delay, LOS, and approach details.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: B[13.7]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Volume Module table with 12 columns for traffic volume and 12 columns for adjustment factors.

Critical Gap Module table with 12 columns for gap and follow-up times.

Capacity Module table with 12 columns for conflict, potent, and move capacity.

Level of Service Module table with 12 columns for delay, LOS, and approach details.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative B
 Baseline Saturday Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[13.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module: >> Count Date: 29 Mar 2005 <<

Base Vol:	14	254	0	0	280	16	7	0	9	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:	14	254	0	0	280	16	7	0	9	0	0	0
Added Vol:	0	11	0	0	13	34	29	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	265	0	0	293	50	36	0	9	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:	14	265	0	0	293	50	36	0	9	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	14	265	0	0	293	50	36	0	9	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	343	xxxx	xxxxx	xxxx	xxxx	xxxxx	611	611	318	xxxx	xxxx	xxxxx
Potent Cap.:	1227	xxxx	xxxxx	xxxx	xxxx	xxxxx	460	411	727	xxxx	xxxx	xxxxx
Move Cap.:	1227	xxxx	xxxxx	xxxx	xxxx	xxxxx	456	407	727	xxxx	xxxx	xxxxx
Volume/Cap:	0.01	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.08	0.00	0.01	xxxx	xxxx	xxxxx

Level Of Service Module:

2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	493	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	13.0	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			13.0		xxxxxxx			
ApproachLOS:	*			*			B		*			*

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.405
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 55 184 39 75 208 38 24 470 45 74 728 78
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: 55 184 39 75 208 38 24 470 45 74 728 78
Added Vol: 16 12 6 0 7 0 0 0 10 3 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 71 196 45 75 215 38 24 470 55 77 728 78
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: 71 196 45 75 215 38 24 470 55 77 728 78
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 71 196 45 75 215 38 24 470 55 77 728 78
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
FinalVolume: 71 196 45 75 215 38 24 470 55 77 728 78
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.49 1.00 0.85 0.52 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.79 0.21 1.00 1.81 0.19
Final Sat.: 929 1900 1615 990 1900 1615 1805 3180 372 1805 3212 344
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.08 0.10 0.03 0.08 0.11 0.02 0.01 0.15 0.15 0.04 0.23 0.23
Crit Moves: **** *
Green/Cycle: 0.27 0.27 0.27 0.27 0.27 0.27 0.06 0.50 0.50 0.10 0.54 0.54
Volume/Cap: 0.28 0.38 0.10 0.28 0.42 0.09 0.23 0.30 0.30 0.43 0.42 0.42
Delay/Veh: 20.7 21.2 19.2 20.7 21.5 19.1 32.7 10.4 10.4 31.2 9.6 9.6
User DelAdj: 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: 20.7 21.2 19.2 20.7 21.5 19.1 32.7 10.4 10.4 31.2 9.6 9.6
LOS by Move: C C B C C B C B B C A A
HCM2k95thQ: 3 7 2 3 8 1 2 7 7 4 11 11

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.535
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 20.3
Optimal Cycle: 33 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:0745
Table with 12 columns for traffic volumes and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, Reduced, PCE, MLF, Final).

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.466
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.8
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:
Table with 12 columns for traffic volumes and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, Reduced, PCE, MLF, Final).

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 0.619
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 12.6
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module table with 12 columns and 4 rows including Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 14 rows including Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th AV

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[12.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Volume Module table with 12 columns and 14 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Critical Gap Module table with 12 columns and 2 rows including Critical Gap and FollowUpTim.

Capacity Module table with 12 columns and 4 rows including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns and 10 rows including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.583
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 16.9
Optimal Cycle: 39 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns representing different traffic movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing different traffic movements. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.601
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.2
Optimal Cycle: 32 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns representing different traffic movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing different traffic movements. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.478
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 0 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Table with 12 columns for traffic flow. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for flow and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for flow and 14 rows for Vol/Sat, Crit Moves, Delay/Veh, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[11.9]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for flow and 2 rows for Critical Gp and FollowUpTim.

Capacity Module table with 12 columns for flow and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for flow and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy
Average Delay (sec/veh): 3.8 Worst Case Level Of Service: B[10.1]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 0 275 13 10 131 0 0 0 0 6 0 18
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: 0 275 13 10 131 0 0 0 0 6 0 18
Added Vol: 1 0 0 0 0 0 0 38 8 0 15 0
Diverted Tr: 0 -163 0 0 -118 0 0 0 0 -5 0 5
Initial Fut: 1 112 13 10 13 0 0 38 8 1 15 23
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: 1 112 13 10 13 0 0 38 8 1 15 23
Reduct Vol: 0 0 0 0 0 0 0 0 5 0 0 0
FinalVolume: 1 112 13 10 13 0 0 38 3 1 15 23
Critical Gap Module:
Critical Gap: 4.1 xxx xxx 4.1 xxx xxx xxx 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxx xxx 2.2 xxx xxx xxx 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Conflict Vol: 13 xxx xxx 125 xxx xxx xxx 160 13 174 154 119
Potent Cap.: 1619 xxx xxx 1474 xxx xxx xxx 736 1073 793 742 939
Move Cap.: 1619 xxx xxx 1474 xxx xxx xxx 730 1073 755 736 939
Volume/Cap: 0.00 xxx xxx 0.01 xxx xxx xxx 0.05 0.00 0.00 0.02 0.02
Level Of Service Module:
2Way95thQ: 0.0 xxx xxx 0.0 xxx xxx xxx xxx xxx xxx xxx
Control Del: 7.2 xxx xxx 7.5 xxx xxx xxx xxx xxx xxx xxx
LOS by Move: A * * A * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxx xxx xxx xxx xxx xxx 748 xxx 844 xxx
SharedQueue: xxx xxx xxx 0.0 xxx xxx xxx xxx 0.2 xxx 0.1 xxx
Shrd ConDel: xxx xxx xxx 7.5 xxx xxx xxx xxx 10.1 xxx 9.5 xxx
Shared LOS: * * * A * * * * * B * A *
ApproachDel: xxx xxx xxx 10.1 xxx 9.5
ApproachLOS: * * B A

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.536
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.8
Optimal Cycle: 27 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 10 0 0 10 0 0 0 0 4 0 10
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 523 143 25 188 0 0 0 0 43 0 29
Growth Adj: 1.14 1.14 1.14 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 596 163 25 188 0 0 0 0 43 0 29
Added Vol: 0 36 0 0 25 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 632 163 25 213 0 0 0 0 43 0 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: 0 632 163 25 213 0 0 0 0 43 0 29
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 632 163 25 213 0 0 0 0 43 0 29
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
FinalVolume: 0 632 163 25 213 0 0 0 0 43 0 29
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.97 0.97 0.92 0.92 1.00 1.00 1.00 1.00 0.92 1.00 0.92
Lanes: 0.00 0.80 0.20 0.11 0.89 0.00 0.00 0.00 0.00 0.60 0.00 0.40
Final Sat.: 0 1468 379 183 1559 0 0 0 0 1042 0 703
Capacity Analysis Module:
Vol/Sat: 0.00 0.43 0.43 0.14 0.14 0.00 0.00 0.00 0.00 0.04 0.00 0.04
Crit Moves: ****
Green/Cycle: 0.00 0.68 0.68 0.68 0.68 0.00 0.00 0.00 0.00 0.20 0.00 0.20
Volume/Cap: 0.00 0.63 0.63 0.20 0.20 0.00 0.00 0.00 0.00 0.21 0.00 0.21
Delay/Veh: 0.0 5.6 5.6 3.0 3.0 0.0 0.0 0.0 0.0 17.0 0.0 17.0
User DelAdj: 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 5.6 5.6 3.0 3.0 0.0 0.0 0.0 0.0 17.0 0.0 17.0
LOS by Move: A A A A A A A A A B A B
HCM2k95thQ: 0 15 15 3 3 0 0 0 0 2 0 2

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: A[9.1]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0).

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 3 columns for Critical Gap, FollowUpTim, and other metrics.

Capacity Module:

Table with 3 columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 3 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: A[9.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0).

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 3 columns for Critical Gap, FollowUpTim, and other metrics.

Capacity Module:

Table with 3 columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 3 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.807
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.9
Optimal Cycle: 63 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0715. Table with 12 columns for volume and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for various capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.454
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.1
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for various capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.666
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 21.1
Optimal Cycle: 51 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Table with 12 columns: Volume Module, Count, Date, and 10 traffic flow metrics. Includes Base Vol, Growth Adj, Initial Bse, etc.

Table with 12 columns: Sat/Lane, Adjustment, Lanes, Final Sat. for Saturation Flow Module.

Table with 12 columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ for Capacity Analysis Module.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.785
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.2
Optimal Cycle: 59 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Table with 12 columns: Volume Module, Count, Date, and 10 traffic flow metrics. Includes Base Vol, Growth Adj, Initial Bse, etc.

Table with 12 columns: Sat/Lane, Adjustment, Lanes, Final Sat. for Saturation Flow Module.

Table with 12 columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ for Capacity Analysis Module.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: F[80.4]

Table with 5 columns: Approach, Movement, Control, Rights, Lanes. Rows include North Bound, South Bound, East Bound, West Bound with various traffic movements and lane configurations.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table showing traffic volume data for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module: Table showing Critical Gap and FollowUpTim values for different approaches and movements.

Capacity Module: Table showing Conflict Vol, Potent Cap., Move Cap., and Volume/Cap. for various traffic movements.

Level of Service Module: Table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: D[32.8]

Table with 5 columns: Approach, Movement, Control, Rights, Lanes. Rows include North Bound, South Bound, East Bound, West Bound with various traffic movements and lane configurations.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table showing traffic volume data for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module: Table showing Critical Gap and FollowUpTim values for different approaches and movements.

Capacity Module: Table showing Conflict Vol, Potent Cap., Move Cap., and Volume/Cap. for various traffic movements.

Level of Service Module: Table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.816
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 29.6
Optimal Cycle: 72 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.889
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 29.5
Optimal Cycle: 85 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume and 12 rows for various traffic metrics.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.764
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.0
Optimal Cycle: 57 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715. Table with 12 columns for volume and 12 columns for saturation flow.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.696
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.6
Optimal Cycle: 47 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 0730. Table with 12 columns for volume and 12 columns for saturation flow.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.261
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.0
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0 0
Volume Module:
Base Vol: 0 163 0 23 118 0 0 0 0 5 0 130
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: 0 163 0 23 118 0 0 0 0 5 0 130
Added Vol: 4 77 12 0 64 2 14 34 9 5 10 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 4 240 12 23 182 2 14 34 9 10 10 131
User Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
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: 4 259 13 25 197 2 15 37 10 11 11 141
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 4 259 13 25 197 2 15 37 10 11 11 141
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
FinalVolume: 4 259 13 25 197 2 15 37 10 11 11 141
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.63 1.00 0.85 0.57 1.00 0.85 0.65 0.97 0.97 0.73 0.86 0.86
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.79 0.21 1.00 0.07 0.93
Final Sat.: 1191 1900 1615 1081 1900 1615 1243 1456 385 1387 116 1520
Capacity Analysis Module:
Vol/Sat: 0.00 0.14 0.01 0.02 0.10 0.00 0.01 0.03 0.03 0.01 0.09 0.09
Crit Moves: ****
Green/Cycle: 0.52 0.52 0.52 0.52 0.52 0.52 0.36 0.36 0.36 0.36 0.36 0.36
Volume/Cap: 0.01 0.26 0.02 0.04 0.20 0.00 0.03 0.07 0.07 0.02 0.26 0.26
Delay/Veh: 5.7 6.7 5.7 5.9 6.4 5.7 10.5 10.7 10.7 10.4 11.6 11.6
User DelAdj: 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: 5.7 6.7 5.7 5.9 6.4 5.7 10.5 10.7 10.7 10.4 11.6 11.6
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 5 0 0 3 0 0 1 1 0 4 4
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[10.4]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 163 0 0 123 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 163 0 0 123 0 0 0 0 0 0 0 0 0 0
Added Vol: 3 83 0 0 86 1 6 0 10 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 3 246 0 0 209 1 6 0 10 0 0 0 0 0 0
User Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
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
PHF Volume: 3 266 0 0 226 1 6 0 11 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 3 266 0 0 226 1 6 0 11 0 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 227 xxxx xxxxx xxxxx xxxxx xxxxx 498 498 226 504 499 266
Potent Cap.: 1353 xxxx xxxxx xxxxx xxxxx xxxxx 534 477 818 482 476 778
Move Cap.: 1353 xxxx xxxxx xxxxx xxxxx xxxxx 534 475 818 474 475 778
Volume/Cap: 0.00 xxxx xxxxx xxxxx xxxxx xxxxx 0.01 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: 7.7 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxxx xxxxx xxxxx 682 xxxxx xxxxx 0 xxxxx
SharedQueue: 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 7.7 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx 10.4 xxxxx xxxxx xxxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxx xxxxxx 10.4 xxxxxx
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: B[12.2]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Volume Module table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module table with 12 columns for gap and 2 rows for Critical Gap and FollowUpTim.

Capacity Module table with 12 columns for capacity and 5 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for LOS and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 3.9 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Volume Module table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

PCE Module table with 12 columns for PCE and 5 rows for AutoPCE, TruckPCE, ComboPCE, BicyclePCE, and AdjVolume.

Delay Module table with 12 columns for delay and 7 rows for Time Period, CircVolume, MaxVolume, PedVolume, AdjMaxVol, ApproachVol, ApproachDel, and Queue.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: B[11.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: C[15.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 FranklinBl/5th Av (South)

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: C[15.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for different traffic movements and 12 rows for various volume metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 12 columns for traffic movements and 2 rows for Critical Gap 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 various LOS metrics like 2Way95thQ, Control Del, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.625
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.3
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 56 162 71 158 409 36 35 790 101 101 905 80
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: 56 162 71 158 409 36 35 790 101 101 905 80
Added Vol: 19 14 6 0 18 0 0 0 25 9 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 75 176 77 158 427 36 35 790 126 110 905 80
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: 75 176 77 158 427 36 35 790 126 110 905 80
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 75 176 77 158 427 36 35 790 126 110 905 80
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
FinalVolume: 75 176 77 158 427 36 35 790 126 110 905 80
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.29 1.00 0.85 0.59 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.72 0.28 1.00 1.84 0.16
Final Sat.: 549 1900 1615 1125 1900 1615 1805 3048 486 1805 3277 290
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.14 0.09 0.05 0.14 0.22 0.02 0.02 0.26 0.26 0.06 0.28 0.28
Crit Moves: **** ****
Green/Cycle: 0.36 0.36 0.36 0.36 0.36 0.36 0.09 0.41 0.41 0.10 0.43 0.43
Volume/Cap: 0.38 0.26 0.13 0.39 0.63 0.06 0.23 0.63 0.63 0.63 0.65 0.65
Delay/Veh: 17.9 16.0 15.2 17.3 20.4 14.7 30.6 17.1 17.1 37.3 16.9 16.9
User DelAdj: 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: 17.9 16.0 15.2 17.3 20.4 14.7 30.6 17.1 17.1 37.3 16.9 16.9
LOS by Move: B B B B C B C B B D B B
HCM2k95thQ: 3 6 2 6 16 1 2 17 17 7 18 18

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.918
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 39.7
Optimal Cycle: 92 Level of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: 1700. Table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.521
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.2
Optimal Cycle: 28 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module. Table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 0.823
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 19.2
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic counts and 12 columns for saturation flow. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for adjustment factors and 12 columns for final saturation flow values.

Capacity Analysis Module table with 12 columns for delay and LOS by approach, and 12 columns for LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: A[9.9]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic counts and 12 columns for saturation flow. Includes rows for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for critical gap and follow-up time values.

Capacity Module table with 12 columns for conflict volume, potential capacity, move capacity, and volume/capacity.

Level of Service Module table with 12 columns for delay and LOS by approach, and 12 columns for LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.624
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.9
Optimal Cycle: 41 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.574
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.2
Optimal Cycle: 30 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.762
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 16.4
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Table with 12 columns for volume counts. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Table with 12 columns for saturation flow. Rows include Saturation Flow Module, Adjustment, Lanes, and Final Sat.

Table with 12 columns for capacity analysis. Rows include Capacity Analysis Module, Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 1.1 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, Lanes, and Volume Module.

Table with 12 columns for volume counts. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Table with 12 columns for critical gap module. Rows include Critical Gap Module, Critical Gp, and FollowUpTim.

Table with 12 columns for capacity module. Rows include Capacity Module, Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Table with 12 columns for level of service module. Rows include Level of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 5.9 Worst Case Level Of Service: A[9.9]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0, 1, 0, 0).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module table with columns for Critical Gap, FollowUpTim.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.586
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.6
Optimal Cycle: 30 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L-T-R), Control (Permitted, Split Phase), Rights (Include), Lanes (0, 1, 0, 0).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat., Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: A[8.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module table with columns for Critical Gp, FollowUpTim, and values for different approaches.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: A[8.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module table with columns for Critical Gp, FollowUpTim, and values for different approaches.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.741
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 53 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700
Base Vol: 0 548 499 493 950 0 0 0 0 712 0 380
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

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.95 1.00 0.95 0.95 1.00 1.00 1.00 1.00 0.92 1.00 0.85

Capacity Analysis Module:
Vol/Sat: 0.00 0.15 0.00 0.27 0.26 0.00 0.00 0.00 0.00 0.22 0.00 0.24
Crit Moves: ****
Green/Cycle: 0.00 0.20 0.00 0.37 0.57 0.00 0.00 0.00 0.00 0.30 0.00 0.67

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.523
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.1
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 33 0 43 81 0 61 48 855 9 50 1244 49
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.17 1.17 1.17 1.00 1.00 1.00

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.82 1.00 0.82 0.76 1.00 0.76 0.16 0.95 0.95 0.23 0.95 0.95

Capacity Analysis Module:
Vol/Sat: 0.06 0.00 0.06 0.10 0.00 0.10 0.18 0.30 0.30 0.15 0.38 0.38
Crit Moves: ****
Green/Cycle: 0.19 0.00 0.19 0.19 0.00 0.19 0.73 0.73 0.73 0.73 0.73 0.73

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.830
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 26.2
Optimal Cycle: 73 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1700. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 1.096
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 59.1
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: B[13.1]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module table with 11 columns and 13 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with 11 columns and 2 rows: Critical Gp, FollowUpTim.

Capacity Module table with 11 columns and 5 rows: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with 11 columns and 10 rows including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[19.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module table with 11 columns and 13 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with 11 columns and 2 rows: Critical Gp, FollowUpTim.

Capacity Module table with 11 columns and 5 rows: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with 11 columns and 10 rows including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.797
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 27.8
Optimal Cycle: 69 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for various approaches and movements.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.029
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 48.8
Optimal Cycle: 180 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for various approaches and movements.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.747
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.6
Optimal Cycle: 54 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700. Table with 12 columns for volume and 12 columns for growth/initial Bse/added volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.833
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.4
Optimal Cycle: 68 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 18 Sep 2007 << 1630. Table with 12 columns for volume and 12 columns for growth/initial Bse/added volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.419
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.9
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 0 71 0 56 408 0 0 0 0 14 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 71 0 56 408 0 0 0 0 14 0 0
Added Vol: 7 130 10 1 161 5 5 11 6 15 28 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 7 201 10 57 569 5 5 11 6 29 28 1
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 8 235 12 67 666 6 6 13 7 34 33 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 8 235 12 67 666 6 6 13 7 34 33 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
FinalVolume: 8 235 12 67 666 6 6 13 7 34 33 1
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.33 1.00 0.85 0.61 1.00 0.85 0.74 0.95 0.95 0.75 1.00 1.00
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.65 0.35 1.00 0.97 0.03
Final Sat.: 625 1900 1615 1150 1900 1615 1406 1164 635 1429 1825 65
Capacity Analysis Module:
Vol/Sat: 0.01 0.12 0.01 0.06 0.35 0.00 0.00 0.01 0.01 0.02 0.02 0.02
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.02 0.18 0.01 0.09 0.52 0.01 0.02 0.06 0.06 0.12 0.09 0.09
Delay/Veh: 2.6 3.0 2.6 2.8 4.3 2.6 16.1 16.2 16.2 16.6 16.4 16.4
User DelAdj: 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: 2.6 3.0 2.6 2.8 4.3 2.6 16.1 16.2 16.2 16.6 16.4 16.4
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 3 0 1 11 0 0 1 1 1 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.2 Worst Case Level Of Service: C[15.3]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0
Volume Module:
Base Vol: 0 71 0 0 422 0 0 0 0 0 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 71 0 0 422 0 0 0 0 0 0 0 0
Added Vol: 8 151 0 0 177 3 2 0 3 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 222 0 0 599 3 2 0 3 0 0 0 0
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 9 260 0 0 701 4 2 0 4 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 260 0 0 701 4 2 0 4 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 704 xxxxx xxxxx xxxxx xxxxx xxxxx 981 981 703 983 983 260
Potent Cap.: 903 xxxxx xxxxx xxxxx xxxxx xxxxx 279 251 441 230 251 784
Move Cap.: 903 xxxxx xxxxx xxxxx xxxxx xxxxx 277 249 441 226 248 784
Volume/Cap: 0.01 xxxxx xxxxx xxxxx xxxxx xxxxx 0.01 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: 9.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: A * * * * * * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 356 xxxxx xxxxx 0 xxxxx
SharedQueue: 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 9.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 15.3 xxxxx xxxxx xxxxx xxxxx
Shared LOS: A * * * * * * * * * * * * * * * *
ApproachDel: xxxxxxx xxxxxxx 15.3 xxxxxxx
ApproachLOS: * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: C[21.1]

Table with 4 columns: Approach, Movement, Control, Lanes. Rows include North Bound, South Bound, East Bound, West Bound with various movement and control details.

Volume Module:

Table with 12 columns for traffic volume and delay metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 12 columns for critical gap and follow-up time metrics. Rows include Critical Gap, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity and volume metrics. Rows include Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service and delay metrics. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 6.3 Level Of Service: A

Table with 4 columns: Approach, Movement, Control, Lanes. Rows include North Bound, South Bound, East Bound, West Bound with various movement and control details.

Volume Module:

Table with 12 columns for traffic volume and delay metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

PCE Module:

Table with 12 columns for PCE module metrics. Rows include AutoPCE, TruckPCE, ComboPCE, BicyclePCE, AdjVolume.

Delay Module: >> Time Period: 0.25 hours <<

Table with 4 columns for delay module metrics. Rows include CircVolume, MaxVolume, PedVolume, AdjMaxVol, ApproachVol, ApproachDel, Queue.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 23.0 Worst Case Level Of Service: F[178.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (1-0-2-0-0, etc.)

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 5.2 Worst Case Level Of Service: E[47.0]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1!-0-0, etc.)

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 FranklinBl/5th Av (South)

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: C[20.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<
Table with 11 columns for different traffic movements and 11 rows for various volume metrics like Base Vol, Growth Adj, etc.

Critical Gap Module:
Table with 11 columns for different traffic movements and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:
Table with 11 columns for different traffic movements and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:
Table with 11 columns for different traffic movements and 10 rows for various LOS metrics like 2Way95thQ, Control Del, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.344
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 37 80 29 49 100 38 25 612 44 41 713 80
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 80 29 49 100 38 25 612 44 41 713 80
Added Vol: 22 16 7 0 19 0 0 0 26 9 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 59 96 36 49 119 38 25 612 70 50 713 80
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: 59 96 36 49 119 38 25 612 70 50 713 80
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 59 96 36 49 119 38 25 612 70 50 713 80
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
FinalVolume: 59 96 36 49 119 38 25 612 70 50 713 80
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.62 1.00 0.85 0.68 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.79 0.21 1.00 1.80 0.20
Final Sat.: 1174 1900 1615 1290 1900 1615 1805 3191 365 1805 3197 359
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.05 0.05 0.02 0.04 0.06 0.02 0.01 0.19 0.19 0.03 0.22 0.22
Crit Moves: **** *
Green/Cycle: 0.18 0.18 0.18 0.18 0.18 0.18 0.06 0.58 0.58 0.12 0.64 0.64
Volume/Cap: 0.28 0.28 0.12 0.21 0.35 0.13 0.24 0.33 0.33 0.24 0.35 0.35
Delay/Veh: 25.6 25.3 24.4 25.0 25.8 24.4 32.8 7.8 7.8 28.8 6.1 6.1
User DelAdj: 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: 25.6 25.3 24.4 25.0 25.8 24.4 32.8 7.8 7.8 28.8 6.1 6.1
LOS by Move: C C C C C C C A A C A A
HCM2k95thQ: 3 4 2 2 5 2 2 8 8 2 9 9

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.474
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 17.2
Optimal Cycle: 30 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, 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, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.274
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.6
Optimal Cycle: 26 Level of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, 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, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av
Average Delay (sec/veh): 1.6 Worst Case Level Of Service: B[10.1]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 1 0 0 0 0 0 0 0 0 0 1
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 0 406 37 33 321 0 0 0 0 0 0 0 54
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.17 1.17 1.17
Initial Bse: 0 406 37 33 321 0 0 0 0 0 0 0 63
Added Vol: 0 0 49 39 2 0 0 0 0 0 0 0 27
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 406 86 72 323 0 0 0 0 0 0 0 90
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
PHF Volume: 0 406 86 72 323 0 0 0 0 0 0 0 90
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 406 86 72 323 0 0 0 0 0 0 0 90
Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 6.2
FollowUpTim:xxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 3.3
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 492 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 246
Potent Cap.: xxxxx xxxxx xxxxxx 1082 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 798
Move Cap.: xxxxx xxxxx xxxxxx 1082 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 798
Volume/Cap: xxxxx xxxxx xxxxxx 0.07 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.11
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.4
Control Del:xxxxx xxxxx xxxxxx 8.6 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 10.1
LOS by Move: * * * A * * * * * * * * * B
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 8.6 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: * * * A * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx 10.1
ApproachLOS: * * * * B
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St
Cycle (sec): 70 Critical Vol./Cap.(X): 0.417
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.6
Optimal Cycle: 39 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: Split Phase Split Phase Split Phase Split Phase
Rights: Include Include Ignore Include
Min. Green: 10 10 0 0 10 10 10 0 0 10 0 0 0 0
Lanes: 0 1 1 0 0 0 0 0 1 0 1 0 0 0 0 0
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 194 416 0 0 290 7 17 0 508 0 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: 194 416 0 0 290 7 17 0 508 0 0 0 0
Added Vol: 0 11 0 0 2 0 38 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 194 427 0 0 292 7 55 0 508 0 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 194 427 0 0 292 7 55 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 194 427 0 0 292 7 55 0 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
FinalVolume: 194 427 0 0 292 7 55 0 0 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.94 0.94 1.00 1.00 1.00 1.00 0.95 1.00 1.00 1.00 1.00 1.00
Lanes: 0.62 1.38 0.00 0.00 0.98 0.02 1.00 0.00 1.00 0.00 0.00 0.00
Final Sat.: 1111 2445 0 0 1850 44 1805 0 1900 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.17 0.17 0.00 0.00 0.16 0.16 0.03 0.00 0.00 0.00 0.00 0.00
Crit Moves: ****
Green/Cycle: 0.38 0.38 0.00 0.00 0.35 0.35 0.14 0.00 0.00 0.00 0.00 0.00
Volume/Cap: 0.46 0.46 0.00 0.00 0.46 0.46 0.21 0.00 0.00 0.00 0.00 0.00
Delay/Veh: 16.4 16.4 0.0 0.0 18.3 18.3 26.9 0.0 0.0 0.0 0.0 0.0
User DelAdj: 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: 16.4 16.4 0.0 0.0 18.3 18.3 26.9 0.0 0.0 0.0 0.0 0.0
LOS by Move: B B A A B B C A A A A A
HCM2k95thQ: 11 11 0 0 10 10 3 0 0 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.334
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.8
Optimal Cycle: 21 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.258
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.7
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume counts and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.540
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.7
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.377
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.1
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.278
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 13.6
Optimal Cycle: 31 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.800
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.9
Optimal Cycle: 61 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: D[29.5]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Stop Sign, Uncontrolled), Rights (Include), Lanes (0-2).

Volume Module: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module: Critical Gp, FollowUpTim.

Capacity Module: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: E[39.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Stop Sign, Uncontrolled), Rights (Include), Lanes (0-2).

Volume Module: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module: Critical Gp, FollowUpTim.

Capacity Module: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.719
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 24.3
Optimal Cycle: 58 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and growth data.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.075
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 57.6
Optimal Cycle: 180 Level of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and growth data.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.835
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.5
Optimal Cycle: 70 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.726
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.0
Optimal Cycle: 51 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<. Table with 12 columns for volume and 12 rows for various metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.188
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.7
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 0 49 0 0 78 0 0 0 0 0 0 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 49 0 0 78 0 0 0 0 0 0 0 0 0
Added Vol: 6 147 12 1 178 4 7 17 7 14 22 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 6 196 12 1 256 4 7 17 7 14 22 1
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 7 220 13 1 287 4 8 19 8 16 25 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 7 220 13 1 287 4 8 19 8 16 25 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
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 7 220 13 1 287 4 8 19 8 16 25 1
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.58 1.00 0.85 0.61 1.00 0.85 0.75 0.96 0.96 0.75 0.99 0.99
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.71 0.29 1.00 0.96 0.04
Final Sat.: 1096 1900 1615 1165 1900 1615 1419 1287 530 1417 1806 82
Capacity Analysis Module:
Vol/Sat: 0.01 0.12 0.01 0.00 0.15 0.00 0.01 0.01 0.01 0.01 0.01 0.01
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.01 0.17 0.01 0.00 0.22 0.00 0.03 0.07 0.07 0.06 0.07 0.07
Delay/Veh: 2.6 3.0 2.6 2.6 3.1 2.6 16.1 16.3 16.3 16.3 16.3 16.3
User DelAdj: 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: 2.6 3.0 2.6 2.6 3.1 2.6 16.1 16.3 16.3 16.3 16.3 16.3
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 3 0 0 4 0 0 1 1 0 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.0]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0
Volume Module:
Base Vol: 0 49 0 0 78 0 0 0 0 0 0 0 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 49 0 0 78 0 0 0 0 0 0 0 0 0 0
Added Vol: 8 165 0 0 197 3 4 0 6 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 214 0 0 275 3 4 0 6 0 0 0 0 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 9 240 0 0 308 3 4 0 7 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 240 0 0 308 3 4 0 7 0 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 311 xxxx xxxxx xxxxx xxxxx xxxxx 567 567 310 571 569 240
Potent Cap.: 1260 xxxx xxxxx xxxxx xxxxx xxxxx 488 436 735 435 435 804
Move Cap.: 1260 xxxx xxxxx xxxxx xxxxx xxxxx 485 433 735 429 432 804
Volume/Cap: 0.01 xxxx xxxxx xxxxx xxxxx xxxxx 0.01 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: 7.9 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: A * * * * * * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxxx xxxxx xxxxx xxxxx 610 xxxxx xxxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 7.9 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx 11.0 xxxxx xxxxx xxxxx xxxxx
Shared LOS: A * * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 11.0 xxxxxx
ApproachLOS: * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3
Average Delay (sec/veh): 3.5 Worst Case Level Of Service: B[13.1]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
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: 0 49 0 0 78 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 49 0 0 78 0 0 0 0 0 0 0 0 0 0
Added Vol: 49 124 10 27 143 34 28 0 42 9 0 22
PasserByVol: 21 0 0 0 0 0 0 0 21 0 0 0 0 0 0
Initial Fut: 70 173 10 27 221 34 28 0 63 9 0 22
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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
PHF Volume: 78 194 11 30 248 38 31 0 71 10 0 25
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 78 194 11 30 248 38 31 0 71 10 0 25
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxxx 4.1 xxxx xxxxxx 7.1 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxxx 2.2 xxxx xxxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 286 xxxx xxxxxx 205 xxxx xxxxxx 696 689 267 718 702 199
Potent Cap.: 1288 xxxx xxxxxx 1379 xxxx xxxxxx 359 371 777 347 365 847
Move Cap.: 1288 xxxx xxxxxx 1379 xxxx xxxxxx 326 340 777 295 334 847
Volume/Cap: 0.06 xxxx xxxxxx 0.02 xxxx xxxxxx 0.10 0.00 0.09 0.03 0.00 0.03
Level Of Service Module:
2Way95thQ: 0.2 xxxx xxxxxx 0.1 xxxx xxxxxx xxxx xxxx xxxxxx xxxx xxxx xxxxxx
Control Del: 8.0 xxxx xxxxxx 7.7 xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx
LOS by Move: A * * A * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxxx xxxx xxxx xxxxxx xxxx 545 xxxxxx xxxx 548 xxxxxx
SharedQueue:xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx 0.7 xxxxxx xxxxxx 0.2 xxxxxx
Shrd ConDel:xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx 13.1 xxxxxx xxxxxx 12.0 xxxxxx
Shared LOS: * * * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 13.1 12.0
ApproachLOS: * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C
Average Delay (sec/veh): 4.1 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: Yield Sign Yield Sign Yield Sign Yield Sign
Lanes: 1 1 1 1
Volume Module:
Base Vol: 9 49 0 0 78 0 0 0 28 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: 9 49 0 0 78 0 0 0 28 0 0 0
Added Vol: 14 183 0 0 194 0 0 0 11 0 0 0
PasserByVol: 0 21 0 0 21 0 0 0 0 0 0 0
Initial Fut: 23 253 0 0 293 0 0 0 39 0 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 26 283 0 0 328 0 0 0 44 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 26 283 0 0 328 0 0 0 44 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
FinalVolume: 26 283 0 0 328 0 0 0 44 0 0 0
PCE Module:
AutoPCE: 26 283 0 0 328 0 0 0 44 0 0 0
TruckPCE: 0 0 0 0 0 0 0 0 0 0 0 0
ComboPCE: 0 0 0 0 0 0 0 0 0 0 0 0
BicyclePCE: 0 0 0 0 0 0 0 0 0 0 0 0
AdjVolume: 26 283 0 0 328 0 0 0 44 0 0 0
Delay Module: >> Time Period: 0.25 hours <<
CircVolume: 0 26 328 309
MaxVolume: 1200 1186 1023 xxxxxx
PedVolume: 0 0 0 0
AdjMaxVol: 1200 1186 1023 xxxxxx
ApproachVol: 309 328 44 xxxxxx
ApproachDel: 4.0 4.2 3.7 xxxxxx
Queue: 1.0 1.1 0.1 xxxxx

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 10.9 Worst Case Level Of Service: F[51.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns and 12 rows showing traffic volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns and 2 rows showing Critical Gap and FollowUpTim values.

Capacity Module:

Table with 12 columns and 5 rows showing Capacity metrics like Cnflct Vol, Potent Cap, etc.

Level Of Service Module:

Table with 12 columns and 10 rows showing Level of Service metrics like 2Way95thQ, Control Del, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 4.0 Worst Case Level Of Service: C[21.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns and 12 rows showing traffic volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns and 2 rows showing Critical Gap and FollowUpTim values.

Capacity Module:

Table with 12 columns and 5 rows showing Capacity metrics like Cnflct Vol, Potent Cap, etc.

Level Of Service Module:

Table with 12 columns and 10 rows showing Level of Service metrics like 2Way95thQ, Control Del, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C
Baseline Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 FranklinBl/5th Av (South)

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[13.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Table with 12 columns: Volume Module, Count, Date, and 11 columns of traffic volume data.

Table with 12 columns: Critical Gap Module, Critical Gap, FollowUpTim, and 10 columns of gap data.

Table with 12 columns: Capacity Module, Cnflct Vol, Potent Cap., Move Cap., Volume/Cap, and 10 columns of capacity data.

Table with 12 columns: Level Of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS, and 10 columns of level of service data.

Note: Queue reported is the number of cars per lane.

LOS Worksheets
Baseline Conditions
Mitigated

Curtis Park Village
Proposed Project (Mitigated)
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Proposed Project (Mitigated)
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #2 Freeport Bl / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 0.293
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 12.2
Optimal Cycle: 29 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: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 10 10 10 0 10 10 4 10 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
Volume Module:0745
Base Vol: 31 302 20 20 403 10 40 50 14 40 40 30
Growth Adj: 1.12 1.12 1.12 1.03 1.03 1.03 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 35 338 22 21 415 10 40 50 14 40 40 30
Added Vol: 0 0 0 1 16 0 0 0 3 0 4 17
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 35 338 22 22 431 10 40 50 17 40 44 47
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: 35 338 22 22 431 10 40 50 17 40 44 47
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 35 338 22 22 431 10 40 50 17 40 44 47
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
FinalVolume: 35 338 22 22 431 10 40 50 17 40 44 47
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.99 0.99 0.95 1.00 1.00 0.69 0.96 0.96 0.71 0.92 0.92
Lanes: 1.00 0.94 0.06 1.00 0.98 0.02 1.00 0.75 0.25 1.00 0.48 0.52
Final Sat.: 1805 1766 117 1805 1850 44 1305 1364 464 1357 848 906
Capacity Analysis Module:
Vol/Sat: 0.02 0.19 0.19 0.01 0.23 0.23 0.03 0.04 0.04 0.03 0.05 0.05
Crit Moves: ****
Green/Cycle: 0.05 0.57 0.57 0.14 0.66 0.66 0.16 0.16 0.16 0.16 0.16 0.16
Volume/Cap: 0.35 0.33 0.33 0.08 0.35 0.35 0.20 0.24 0.24 0.19 0.33 0.33
Delay/Veh: 34.1 8.1 8.1 26.2 5.4 5.4 26.2 26.4 26.4 26.2 27.1 27.1
User DelAdj: 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: 34.1 8.1 8.1 26.2 5.4 5.4 26.2 26.4 26.4 26.2 27.1 27.1
LOS by Move: C A A C A A C C C C C C
HCM2k95thQ: 2 8 8 1 9 9 2 3 3 2 4 4
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.632
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.8
Optimal Cycle: 41 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:except thru movements

Table with 12 columns representing different movement volumes and adjustments (Base Vol, Growth Adj, Initial Bse, etc.).

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.698
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.1
Optimal Cycle: 48 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715

Table with 12 columns representing different movement volumes and adjustments (Base Vol, Growth Adj, Initial Bse, etc.).

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Proposed Project (Mitigated)
 Baseline AM Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 3.9 Worst Case Level Of Service: C[17.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	0	1	0	0	1	0	0	1

Volume Module:

Base Vol:	0	163	0	0	123	0	0	0	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
Initial Bse:	0	163	0	0	123	0	0	0	0	0	0
Added Vol:	77	26	8	5	65	41	39	0	78	27	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	77	189	8	5	188	41	39	0	78	27	0
User Adj:	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	85	208	9	6	207	45	43	0	86	30	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	85	208	9	6	207	45	43	0	86	30	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	xxxx	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	3.3	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	252	xxxx	xxxxx	217	xxxx	xxxxx	623	xxxx	229	665	645	212
Potent Cap.:	1325	xxxx	xxxxx	1365	xxxx	xxxxx	401	xxxx	815	376	394	833
Move Cap.:	1325	xxxx	xxxxx	1365	xxxx	xxxxx	379	xxxx	815	318	366	833
Volume/Cap:	0.06	xxxx	xxxxx	0.00	xxxx	xxxxx	0.11	xxxx	0.11	0.09	0.00	0.00

Level Of Service Module:

2Way95thQ:	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx	0.4	xxxx	0.4	xxxx	xxxx	xxxxx			
Control Del:	7.9	xxxx	xxxxx	7.6	xxxx	xxxxx	15.7	xxxx	9.9	xxxxx	xxxx	xxxxx			
LOS by Move:	A	*	*	A	*	*	C	*	A	*	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	333	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	17.0	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*	*	C	*			
ApproachDel:	xxxxxx			xxxxxx			11.9			17.0					
ApproachLOS:	*			*			B			C					

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Proposed Project (Mitigated)
Baseline PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #2 Freeport Bl / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 0.804
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.9
Optimal Cycle: 62 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: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 10 10 10 0 10 10 4 10 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
Volume Module:1700
Base Vol: 32 259 10 30 1031 40 20 30 23 40 110 20
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: 32 259 10 30 1031 40 20 30 23 40 110 20
Added Vol: 0 0 0 2 40 0 0 0 8 0 7 35
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 32 259 10 32 1071 40 20 30 31 40 117 55
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: 32 259 10 32 1071 40 20 30 31 40 117 55
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 32 259 10 32 1071 40 20 30 31 40 117 55
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
FinalVolume: 32 259 10 32 1071 40 20 30 31 40 117 55
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.99 0.99 0.95 1.00 1.00 0.43 0.92 0.92 0.72 0.95 0.95
Lanes: 1.00 0.96 0.04 1.00 0.96 0.04 1.00 0.49 0.51 1.00 0.68 0.32
Final Sat.: 1805 1818 70 1805 1822 68 811 863 892 1366 1230 578
Capacity Analysis Module:
Vol/Sat: 0.02 0.14 0.14 0.02 0.59 0.59 0.02 0.03 0.03 0.03 0.10 0.10
Crit Moves: **** ****
Green/Cycle: 0.02 0.36 0.36 0.36 0.71 0.71 0.14 0.14 0.14 0.14 0.14 0.14
Volume/Cap: 0.83 0.39 0.39 0.05 0.83 0.83 0.17 0.24 0.24 0.20 0.67 0.67
Delay/Veh: 115.2 16.9 16.9 14.4 11.8 11.8 27.1 27.1 27.1 27.0 34.9 34.9
User DelAdj: 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: 115.2 16.9 16.9 14.4 11.8 11.8 27.1 27.1 27.1 27.0 34.9 34.9
LOS by Move: F B B B B B C C C C C C
HCM2k95thQ: 5 9 9 1 33 33 1 3 3 2 10 10
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.774
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 26.2
Optimal Cycle: 57 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:except thru movements

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.797
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.2
Optimal Cycle: 62 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Proposed Project (Mitigated)
 Baseline PM Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 10.6 Worst Case Level Of Service: F[51.7]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	0	1	0	0	0	1	0	0

Volume Module:

Base Vol:	0	71	0	0	422	0	0	0	0	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	71	0	0	422	0	0	0	0	0	0	0
Added Vol:	191	123	20	12	125	89	65	0	143	7	0	11
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	191	194	20	12	547	89	65	0	143	7	0	11
User Adj:	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
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:	220	223	23	14	629	102	75	0	164	8	0	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	220	223	23	14	629	102	75	0	164	8	0	13

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	xxxx	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	3.3	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	731	xxxx	xxxxx	246	xxxx	xxxxx	1388	xxxx	680	1464	1433	235
Potent Cap.:	882	xxxx	xxxxx	1332	xxxx	xxxxx	121	xxxx	454	107	135	809
Move Cap.:	882	xxxx	xxxxx	1332	xxxx	xxxxx	93	xxxx	454	53	96	809
Volume/Cap:	0.25	xxxx	xxxxx	0.01	xxxx	xxxxx	0.81	xxxx	0.36	0.15	0.00	0.02

Level Of Service Module:

2Way95thQ:	1.0	xxxx	xxxxx	0.0	xxxx	xxxxx	4.3	xxxx	1.6	xxxx	xxxx	xxxxx	
Control Del:	10.4	xxxx	xxxxx	7.7	xxxx	xxxxx	127.2	xxxx	17.3	xxxxx	xxxx	xxxxx	
LOS by Move:	B	*	*	A	*	*	F	*	C	*	*	*	
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	124	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	39.8	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	E	*	
ApproachDel:	xxxxxx			xxxxxx			51.7			39.8			
ApproachLOS:	*			*			F			E			

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Proposed Project (Mitigated)
Baseline Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freeport Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.398
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 13.3
Optimal Cycle: 29 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: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 10 10 10 0 10 10 4 10 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 20 175 9 16 457 16 19 25 13 25 47 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: 20 175 9 16 457 16 19 25 13 25 47 16
Added Vol: 0 0 0 3 44 0 0 1 9 0 8 38
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 20 175 9 19 501 16 19 26 22 25 55 54
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: 20 175 9 19 501 16 19 26 22 25 55 54
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 20 175 9 19 501 16 19 26 22 25 55 54
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
FinalVolume: 20 175 9 19 501 16 19 26 22 25 55 54
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.99 0.99 0.95 1.00 1.00 0.63 0.93 0.93 0.73 0.93 0.93
Lanes: 1.00 0.95 0.05 1.00 0.97 0.03 1.00 0.54 0.46 1.00 0.50 0.50
Final Sat.: 1805 1794 92 1805 1832 59 1203 958 811 1385 888 872
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.01 0.10 0.10 0.01 0.27 0.27 0.02 0.03 0.03 0.02 0.06 0.06
Crit Moves: **** ****
Green/Cycle: 0.03 0.29 0.29 0.43 0.69 0.69 0.16 0.16 0.16 0.16 0.16 0.16
Volume/Cap: 0.40 0.34 0.34 0.02 0.40 0.40 0.10 0.17 0.17 0.12 0.40 0.40
Delay/Veh: 38.5 19.9 19.9 11.7 4.9 4.9 25.6 25.9 25.9 25.6 27.5 27.5
User DelAdj: 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: 38.5 19.9 19.9 11.7 4.9 4.9 25.6 25.9 25.9 25.6 27.5 27.5
LOS by Move: D B B B A A C C C C C C
HCM2k95thQ: 2 7 7 1 10 10 1 2 2 1 5 5

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.801
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 27.6
Optimal Cycle: 62 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module:

Table with 12 columns for saturation flow metrics: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.868
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 25.6
Optimal Cycle: 79 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<

Table with 12 columns for volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module:

Table with 12 columns for saturation flow metrics: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Proposed Project (Mitigated)
 Baseline Saturday Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 6.7 Worst Case Level Of Service: C[23.6]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	0	1	0	0	1	0	0	1

Volume Module:

Base Vol:	0	49	0	0	78	0	0	0	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
Initial Bse:	0	49	0	0	78	0	0	0	0	0	0
Added Vol:	198	129	17	15	156	90	68	0	146	14	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	178	17	15	234	90	68	0	146	14	0
User Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	216	194	19	16	255	98	74	0	159	15	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	216	194	19	16	255	98	74	0	159	15	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	xxxx	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	3.3	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	353	xxxx	xxxxx	213	xxxx	xxxxx	978	xxxx	304	1051	1021	203
Potent Cap.:	1217	xxxx	xxxxx	1370	xxxx	xxxxx	232	xxxx	740	207	238	843
Move Cap.:	1217	xxxx	xxxxx	1370	xxxx	xxxxx	191	xxxx	740	136	188	843
Volume/Cap:	0.18	xxxx	xxxxx	0.01	xxxx	xxxxx	0.39	xxxx	0.21	0.11	0.00	0.02

Level Of Service Module:

2Way95thQ:	0.6	xxxx	xxxxx	0.0	xxxx	xxxxx	1.7	xxxx	0.8	xxxx	xxxx	xxxxx			
Control Del:	8.6	xxxx	xxxxx	7.7	xxxx	xxxxx	35.4	xxxx	11.2	xxxxx	xxxx	xxxxx			
LOS by Move:	A	*	*	A	*	*	E	*	B	*	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	222	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	23.6	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*	*	C	*			
ApproachDel:	xxxxxx			xxxxxx			18.9			23.6					
ApproachLOS:	*			*			C			C					

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freeport Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.292
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 12.2
Optimal Cycle: 29 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: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 10 10 10 0 10 10 4 10 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
-----|-----|-----|-----|
Volume Module:0745
Base Vol: 31 302 20 20 403 10 40 50 14 40 40 30
Growth Adj: 1.12 1.12 1.12 1.03 1.03 1.03 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 35 338 22 21 415 10 40 50 14 40 40 30
Added Vol: 0 0 0 1 16 0 0 0 3 0 4 16
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 35 338 22 22 431 10 40 50 17 40 44 46
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: 35 338 22 22 431 10 40 50 17 40 44 46
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 35 338 22 22 431 10 40 50 17 40 44 46
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
FinalVolume: 35 338 22 22 431 10 40 50 17 40 44 46
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.99 0.99 0.95 1.00 1.00 0.69 0.96 0.96 0.71 0.92 0.92
Lanes: 1.00 0.94 0.06 1.00 0.98 0.02 1.00 0.75 0.25 1.00 0.49 0.51
Final Sat.: 1805 1766 117 1805 1850 44 1309 1364 464 1357 857 896
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.02 0.19 0.19 0.01 0.23 0.23 0.03 0.04 0.04 0.03 0.05 0.05
Crit Moves: ****
Green/Cycle: 0.05 0.57 0.57 0.14 0.66 0.66 0.15 0.15 0.15 0.15 0.15 0.15
Volume/Cap: 0.35 0.33 0.33 0.08 0.35 0.35 0.20 0.24 0.24 0.19 0.33 0.33
Delay/Veh: 34.0 8.0 8.0 26.2 5.4 5.4 26.3 26.4 26.4 26.3 27.1 27.1
User DelAdj: 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: 34.0 8.0 8.0 26.2 5.4 5.4 26.3 26.4 26.4 26.3 27.1 27.1
LOS by Move: C A A C A A C C C C C C
HCM2k95thQ: 2 8 8 1 9 9 2 3 3 2 4 4

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.632
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.8
Optimal Cycle: 41 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:except thru movements

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.697
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.1
Optimal Cycle: 48 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 0715

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Option 2 5th Avenue (Mitigated)
 Baseline AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #26 Road A/Area 3

Average Delay (sec/veh): 3.8 Worst Case Level Of Service: C[16.7]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	0	1	0	0	0	1	0	0

Volume Module:

Base Vol:	0	163	0	0	123	0	0	0	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
Initial Bse:	0	163	0	0	123	0	0	0	0	0	0
Added Vol:	77	26	8	5	65	41	39	0	78	27	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	77	189	8	5	188	41	39	0	78	27	0
User Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	204	9	5	203	44	42	0	84	29	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	83	204	9	5	203	44	42	0	84	29	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	xxxx	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	3.3	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	247	xxxx	xxxxx	213	xxxx	xxxxx	612	xxxx	225	653	633	208
Potent Cap.:	1330	xxxx	xxxxx	1370	xxxx	xxxxx	408	xxxx	819	383	400	837
Move Cap.:	1330	xxxx	xxxxx	1370	xxxx	xxxxx	386	xxxx	819	326	372	837
Volume/Cap:	0.06	xxxx	xxxxx	0.00	xxxx	xxxxx	0.11	xxxx	0.10	0.09	0.00	0.00

Level Of Service Module:

2Way95thQ:	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx	0.4	xxxx	0.3	xxxx	xxxx	xxxxx			
Control Del:	7.9	xxxx	xxxxx	7.6	xxxx	xxxxx	15.5	xxxx	9.9	xxxxx	xxxx	xxxxx			
LOS by Move:	A	*	*	A	*	*	C	*	A	*	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	340	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	16.7	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*	*	C	*			
ApproachDel:	xxxxxx			xxxxxx			11.8			16.7					
ApproachLOS:	*			*			B			C					

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Baseline PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #2 Freeport Bl / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 0.804
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.9
Optimal Cycle: 62 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: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 10 10 10 0 10 10 4 10 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
Volume Module:1700
Base Vol: 32 259 10 30 1031 40 20 30 23 40 110 20
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: 32 259 10 30 1031 40 20 30 23 40 110 20
Added Vol: 0 0 0 2 40 0 0 0 8 0 7 35
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 32 259 10 32 1071 40 20 30 31 40 117 55
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: 32 259 10 32 1071 40 20 30 31 40 117 55
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 32 259 10 32 1071 40 20 30 31 40 117 55
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
FinalVolume: 32 259 10 32 1071 40 20 30 31 40 117 55
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.99 0.99 0.95 1.00 1.00 0.43 0.92 0.92 0.72 0.95 0.95
Lanes: 1.00 0.96 0.04 1.00 0.96 0.04 1.00 0.49 0.51 1.00 0.68 0.32
Final Sat.: 1805 1818 70 1805 1822 68 811 863 892 1366 1230 578
Capacity Analysis Module:
Vol/Sat: 0.02 0.14 0.14 0.02 0.59 0.59 0.02 0.03 0.03 0.03 0.10 0.10
Crit Moves: **** ****
Green/Cycle: 0.02 0.36 0.36 0.36 0.71 0.71 0.14 0.14 0.14 0.14 0.14 0.14
Volume/Cap: 0.83 0.39 0.39 0.05 0.83 0.83 0.17 0.24 0.24 0.20 0.67 0.67
Delay/Veh: 115.2 16.9 16.9 14.4 11.8 11.8 27.1 27.1 27.1 27.0 34.9 34.9
User DelAdj: 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: 115.2 16.9 16.9 14.4 11.8 11.8 27.1 27.1 27.1 27.0 34.9 34.9
LOS by Move: F B B B B B C C C C C C
HCM2k95thQ: 5 9 9 1 33 33 1 3 3 2 10 10
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.774
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 26.3
Optimal Cycle: 57 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.797
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.2
Optimal Cycle: 62 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Option 2 5th Avenue (Mitigated)
 Baseline PM Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 11.5 Worst Case Level Of Service: F[57.6]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	0	1	0	0	1	0	0	1

Volume Module:

Base Vol:	0	71	0	0	422	0	0	0	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
Initial Bse:	0	71	0	0	422	0	0	0	0	0	0
Added Vol:	191	123	20	12	125	89	65	0	143	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	191	194	20	12	547	89	65	0	143	6	0
User Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	223	227	23	14	640	104	76	0	167	7	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	223	227	23	14	640	104	76	0	167	7	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	xxxx	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	3.3	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	744	xxxx	xxxxx	250	xxxx	xxxxx	1413	xxxx	692	1489	1458	239
Potent Cap.:	873	xxxx	xxxxx	1327	xxxx	xxxxx	117	xxxx	447	103	131	805
Move Cap.:	873	xxxx	xxxxx	1327	xxxx	xxxxx	88	xxxx	447	50	92	805
Volume/Cap:	0.26	xxxx	xxxxx	0.01	xxxx	xxxxx	0.86	xxxx	0.37	0.14	0.00	0.02

Level Of Service Module:

2Way95thQ:	1.0	xxxx	xxxxx	0.0	xxxx	xxxxx	4.6	xxxx	1.7	xxxx	xxxx	xxxxx			
Control Del:	10.5	xxxx	xxxxx	7.7	xxxx	xxxxx	145.2	xxxx	17.8	xxxxx	xxxx	xxxxx			
LOS by Move:	B	*	*	A	*	*	F	*	C	*	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	132	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.5	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	37.2	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*	*	E	*			
ApproachDel:	xxxxxx			xxxxxx			57.6			37.2					
ApproachLOS:	*			*			F			E					

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Baseline Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freeport Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.398
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 13.3
Optimal Cycle: 29 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: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 10 10 10 0 10 10 4 10 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 20 175 9 16 457 16 19 25 13 25 47 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: 20 175 9 16 457 16 19 25 13 25 47 16
Added Vol: 0 0 0 3 44 0 0 1 9 0 8 38
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 20 175 9 19 501 16 19 26 22 25 55 54
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: 20 175 9 19 501 16 19 26 22 25 55 54
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 20 175 9 19 501 16 19 26 22 25 55 54
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
FinalVolume: 20 175 9 19 501 16 19 26 22 25 55 54
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.99 0.99 0.95 1.00 1.00 0.63 0.93 0.93 0.73 0.93 0.93
Lanes: 1.00 0.95 0.05 1.00 0.97 0.03 1.00 0.54 0.46 1.00 0.50 0.50
Final Sat.: 1805 1794 92 1805 1832 59 1203 958 811 1385 888 872
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.01 0.10 0.10 0.01 0.27 0.27 0.02 0.03 0.03 0.02 0.06 0.06
Crit Moves: **** ****
Green/Cycle: 0.03 0.29 0.29 0.43 0.69 0.69 0.16 0.16 0.16 0.16 0.16 0.16
Volume/Cap: 0.40 0.34 0.34 0.02 0.40 0.40 0.10 0.17 0.17 0.12 0.40 0.40
Delay/Veh: 38.5 19.9 19.9 11.7 4.9 4.9 25.6 25.9 25.9 25.6 27.5 27.5
User DelAdj: 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: 38.5 19.9 19.9 11.7 4.9 4.9 25.6 25.9 25.9 25.6 27.5 27.5
LOS by Move: D B B B A A C C C C C C
HCM2kAvgQ: 1 3 3 0 5 5 0 1 1 1 3 3

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.801
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 27.6
Optimal Cycle: 62 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns representing different traffic movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing different traffic movements. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.868
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 25.6
Optimal Cycle: 79 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns representing different traffic movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing different traffic movements. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Option 2 5th Avenue (Mitigated)
 Baseline Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 6.9 Worst Case Level Of Service: C[23.8]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	0	1	0	0	1	0	0	1

Volume Module:

Base Vol:	0	49	0	0	78	0	0	0	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
Initial Bse:	0	49	0	0	78	0	0	0	0	0	0
Added Vol:	198	129	17	15	157	90	68	0	146	13	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	178	17	15	235	90	68	0	146	13	0
User Adj:	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	222	199	19	17	263	101	76	0	164	15	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	222	199	19	17	263	101	76	0	164	15	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	xxxx	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	3.3	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	364	xxxx	xxxxx	218	xxxx	xxxxx	1007	xxxx	314	1081	1050	209
Potent Cap.:	1206	xxxx	xxxxx	1363	xxxx	xxxxx	221	xxxx	731	197	229	837
Move Cap.:	1206	xxxx	xxxxx	1363	xxxx	xxxxx	181	xxxx	731	127	179	837
Volume/Cap:	0.18	xxxx	xxxxx	0.01	xxxx	xxxxx	0.42	xxxx	0.22	0.11	0.00	0.02

Level Of Service Module:

2Way95thQ:	0.7	xxxx	xxxxx	0.0	xxxx	xxxxx	1.9	xxxx	0.9	xxxx	xxxx	xxxxx			
Control Del:	8.7	xxxx	xxxxx	7.7	xxxx	xxxxx	38.7	xxxx	11.3	xxxxx	xxxx	xxxxx			
LOS by Move:	A	*	*	A	*	*	E	*	B	*	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	221	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	23.8	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*	*	C	*			
ApproachDel:	xxxxxx			xxxxxx			20.0			23.8					
ApproachLOS:	*			*			C			C					

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Baseline AM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #2 Freeport Bl / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 0.292
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 12.2
Optimal Cycle: 29 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: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 10 10 10 0 10 10 4 10 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
Volume Module:0745
Base Vol: 31 302 20 20 403 10 40 50 14 40 40 30
Growth Adj: 1.12 1.12 1.12 1.03 1.03 1.03 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 35 338 22 21 415 10 40 50 14 40 40 30
Added Vol: 0 0 0 1 16 0 0 0 3 0 4 16
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 35 338 22 22 431 10 40 50 17 40 44 46
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: 35 338 22 22 431 10 40 50 17 40 44 46
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 35 338 22 22 431 10 40 50 17 40 44 46
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
FinalVolume: 35 338 22 22 431 10 40 50 17 40 44 46
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.99 0.99 0.95 1.00 1.00 0.69 0.96 0.96 0.71 0.92 0.92
Lanes: 1.00 0.94 0.06 1.00 0.98 0.02 1.00 0.75 0.25 1.00 0.49 0.51
Final Sat.: 1805 1766 117 1805 1850 44 1309 1364 464 1357 857 896
Capacity Analysis Module:
Vol/Sat: 0.02 0.19 0.19 0.01 0.23 0.23 0.03 0.04 0.04 0.03 0.05 0.05
Crit Moves: ****
Green/Cycle: 0.05 0.57 0.57 0.14 0.66 0.66 0.15 0.15 0.15 0.15 0.15 0.15
Volume/Cap: 0.35 0.33 0.33 0.08 0.35 0.35 0.20 0.24 0.24 0.19 0.33 0.33
Delay/Veh: 34.0 8.0 8.0 26.2 5.4 5.4 26.3 26.4 26.4 26.3 27.1 27.1
User DelAdj: 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: 34.0 8.0 8.0 26.2 5.4 5.4 26.3 26.4 26.4 26.3 27.1 27.1
LOS by Move: C A A C A A C C C C C C
HCM2k95thQ: 2 8 8 1 9 9 2 3 3 2 4 4
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.627
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.5
Optimal Cycle: 41 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Table with 12 columns: Volume Module, Count, Date, and 10 movement categories. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table with 12 columns: Sat/Lane, Adjustment, Lanes, and Final Sat. for 10 movement categories.

Table with 12 columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ for 10 movement categories.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Baseline AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.697
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.1
Optimal Cycle: 48 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Table with 12 columns: Volume Module, Count, Date, and 10 movement categories. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table with 12 columns: Sat/Lane, Adjustment, Lanes, and Final Sat. for 10 movement categories.

Table with 12 columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ for 10 movement categories.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Option 3 10th-11th Avenue (Mitigated)
 Baseline AM Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: C[15.5]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	0	1	0	0	1	0	0	1

Volume Module:

Base Vol:	0	163	0	0	123	0	0	0	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
Initial Bse:	0	163	0	0	123	0	0	0	0	0	0
Added Vol:	77	26	1	8	62	41	39	0	78	12	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	77	189	1	8	185	41	39	0	78	12	0
User Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	204	1	9	200	44	42	0	84	13	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	83	204	1	9	200	44	42	0	84	13	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	xxxx	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	3.3	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	244	xxxx	xxxxx	205	xxxx	xxxxx	611	xxxx	222	652	632	205
Potent Cap.:	1334	xxxx	xxxxx	1378	xxxx	xxxxx	409	xxxx	823	384	400	841
Move Cap.:	1334	xxxx	xxxxx	1378	xxxx	xxxxx	385	xxxx	823	326	372	841
Volume/Cap:	0.06	xxxx	xxxxx	0.01	xxxx	xxxxx	0.11	xxxx	0.10	0.04	0.00	0.00

Level Of Service Module:

2Way95thQ:	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx	0.4	xxxx	0.3	xxxx	xxxx	xxxxx			
Control Del:	7.9	xxxx	xxxxx	7.6	xxxx	xxxxx	15.5	xxxx	9.9	xxxxx	xxxx	xxxxx			
LOS by Move:	A	*	*	A	*	*	C	*	A	*	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	357	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	15.5	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*	*	C	*			
ApproachDel:	xxxxxx			xxxxxx			11.7			15.5					
ApproachLOS:	*			*			B			C					

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Baseline PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #2 Freeport Bl / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 0.804
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.9
Optimal Cycle: 62 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: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 10 10 10 0 10 10 4 10 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
Volume Module:1700
Base Vol: 32 259 10 30 1031 40 20 30 23 40 110 20
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: 32 259 10 30 1031 40 20 30 23 40 110 20
Added Vol: 0 0 0 2 40 0 0 0 8 0 7 35
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 32 259 10 32 1071 40 20 30 31 40 117 55
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: 32 259 10 32 1071 40 20 30 31 40 117 55
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 32 259 10 32 1071 40 20 30 31 40 117 55
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
FinalVolume: 32 259 10 32 1071 40 20 30 31 40 117 55
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.99 0.99 0.95 1.00 1.00 0.43 0.92 0.92 0.72 0.95 0.95
Lanes: 1.00 0.96 0.04 1.00 0.96 0.04 1.00 0.49 0.51 1.00 0.68 0.32
Final Sat.: 1805 1818 70 1805 1822 68 811 863 892 1366 1230 578
Capacity Analysis Module:
Vol/Sat: 0.02 0.14 0.14 0.02 0.59 0.59 0.02 0.03 0.03 0.03 0.10 0.10
Crit Moves: **** ****
Green/Cycle: 0.02 0.36 0.36 0.36 0.71 0.71 0.14 0.14 0.14 0.14 0.14 0.14
Volume/Cap: 0.83 0.39 0.39 0.05 0.83 0.83 0.17 0.24 0.24 0.20 0.67 0.67
Delay/Veh: 115.2 16.9 16.9 14.4 11.8 11.8 27.1 27.1 27.1 27.0 34.9 34.9
User DelAdj: 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: 115.2 16.9 16.9 14.4 11.8 11.8 27.1 27.1 27.1 27.0 34.9 34.9
LOS by Move: F B B B B B C C C C C C
HCM2k95thQ: 5 9 9 1 33 33 1 3 3 2 10 10
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.771
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 25.6
Optimal Cycle: 57 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements

Table with 12 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume).

Saturation Flow Module:

Table with 12 columns for saturation flow metrics (Sat/Lane, Adjustment, Lanes, Final Sat).

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Baseline PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.797
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.2
Optimal Cycle: 62 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 19 Sep 2007 << 1700

Table with 12 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume).

Saturation Flow Module:

Table with 12 columns for saturation flow metrics (Sat/Lane, Adjustment, Lanes, Final Sat).

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ).

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Option 3 10th-11th Avenue (Mitigated)
 Baseline PM Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 11.3 Worst Case Level Of Service: F[56.1]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	0	1	0	0	1	0	0	1

Volume Module:

Base Vol:	0	71	0	0	422	0	0	0	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
Initial Bse:	0	71	0	0	422	0	0	0	0	0	0
Added Vol:	191	123	2	13	124	89	65	0	143	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	191	194	2	13	546	89	65	0	143	3	0
User Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	223	227	2	15	639	104	76	0	167	4	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	223	227	2	15	639	104	76	0	167	4	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	xxxx	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	3.3	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	743	xxxx	xxxxx	229	xxxx	xxxxx	1403	xxxx	691	1480	1448	228
Potent Cap.:	874	xxxx	xxxxx	1351	xxxx	xxxxx	118	xxxx	448	105	132	816
Move Cap.:	874	xxxx	xxxxx	1351	xxxx	xxxxx	89	xxxx	448	50	93	816
Volume/Cap:	0.26	xxxx	xxxxx	0.01	xxxx	xxxxx	0.85	xxxx	0.37	0.07	0.00	0.02

Level Of Service Module:

2Way95thQ:	1.0	xxxx	xxxxx	0.0	xxxx	xxxxx	4.6	xxxx	1.7	xxxx	xxxx	xxxxx			
Control Del:	10.5	xxxx	xxxxx	7.7	xxxx	xxxxx	140.6	xxxx	17.7	xxxxx	xxxx	xxxxx			
LOS by Move:	B	*	*	A	*	*	F	*	C	*	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	202	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	24.5	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*	*	C	*			
ApproachDel:	xxxxxx			xxxxxx			56.1			24.5					
ApproachLOS:	*			*			F			C					

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Baseline Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freeport Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.398
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 13.3
Optimal Cycle: 29 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: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 10 10 10 0 10 10 4 10 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 20 175 9 16 457 16 19 25 13 25 47 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: 20 175 9 16 457 16 19 25 13 25 47 16
Added Vol: 0 0 0 3 45 0 0 1 9 0 8 38
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 20 175 9 19 502 16 19 26 22 25 55 54
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: 20 175 9 19 502 16 19 26 22 25 55 54
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 20 175 9 19 502 16 19 26 22 25 55 54
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
FinalVolume: 20 175 9 19 502 16 19 26 22 25 55 54
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.99 0.99 0.95 1.00 1.00 0.63 0.93 0.93 0.73 0.93 0.93
Lanes: 1.00 0.95 0.05 1.00 0.97 0.03 1.00 0.54 0.46 1.00 0.50 0.50
Final Sat.: 1805 1794 92 1805 1832 58 1201 958 811 1385 888 872
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.01 0.10 0.10 0.01 0.27 0.27 0.02 0.03 0.03 0.02 0.06 0.06
Crit Moves: **** ****
Green/Cycle: 0.03 0.29 0.29 0.43 0.69 0.69 0.16 0.16 0.16 0.16 0.16 0.16
Volume/Cap: 0.40 0.34 0.34 0.02 0.40 0.40 0.10 0.17 0.17 0.12 0.40 0.40
Delay/Veh: 38.6 19.9 19.9 11.7 4.9 4.9 25.6 26.0 26.0 25.7 27.6 27.6
User DelAdj: 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: 38.6 19.9 19.9 11.7 4.9 4.9 25.6 26.0 26.0 25.7 27.6 27.6
LOS by Move: D B B B A A C C C C C C
HCM2k95thQ: 2 7 7 1 10 10 1 2 2 1 5 5

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.788
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 26.4
Optimal Cycle: 59 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Baseline Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.868
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 25.6
Optimal Cycle: 79 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<

Table with 12 columns for traffic volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Option 3 10th-11th Avenue (Mitigated)
 Baseline Saturday Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 6.8 Worst Case Level Of Service: C[19.9]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	0	1	0	0	1	0	0	1

Volume Module:

Base Vol:	0	49	0	0	78	0	0	0	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
Initial Bse:	0	49	0	0	78	0	0	0	0	0	0
Added Vol:	198	130	2	17	155	90	68	0	146	6	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	179	2	17	233	90	68	0	146	6	13
User Adj:	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	222	200	2	19	261	101	76	0	164	7	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	222	200	2	19	261	101	76	0	164	7	15

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	xxxx	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	3.3	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	362	xxxx	xxxxx	203	xxxx	xxxxx	1002	xxxx	311	1076	1045	202
Potent Cap.:	1208	xxxx	xxxxx	1381	xxxx	xxxxx	223	xxxx	734	199	231	844
Move Cap.:	1208	xxxx	xxxxx	1381	xxxx	xxxxx	182	xxxx	734	128	180	844
Volume/Cap:	0.18	xxxx	xxxxx	0.01	xxxx	xxxxx	0.42	xxxx	0.22	0.05	0.00	0.02

Level Of Service Module:

2Way95thQ:	0.7	xxxx	xxxxx	0.0	xxxx	xxxxx	1.9	xxxx	0.9	xxxx	xxxx	xxxxx			
Control Del:	8.6	xxxx	xxxxx	7.6	xxxx	xxxxx	38.3	xxxx	11.3	xxxxx	xxxx	xxxxx			
LOS by Move:	A	*	*	A	*	*	E	*	B	*	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	305	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	17.7	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*	*	C	*			
ApproachDel:	xxxxxx			xxxxxx			19.9			17.7					
ApproachLOS:	*			*			C			C					

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Baseline AM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 70 Critical Vol./Cap.(X): 0.693
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 13.0
Optimal Cycle: 47 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: Protected Protected Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 0 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 0 0 0 1 0 0 0 1 1 0 2 0 0 0 0 1 1 0
Volume Module: >> Count Date: 19 Apr 2005 << except thru movements
Base Vol: 0 0 0 48 0 168 142 1039 0 0 1240 48
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 0 0 48 0 168 142 1039 0 0 1240 48
Added Vol: 0 0 0 112 0 53 43 0 0 0 1 84
PasserByVol: 0 0 0 23 0 28 23 -23 0 0 -28 28
Initial Fut: 0 0 0 183 0 249 208 1016 0 0 1213 160
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 0 0 183 0 249 208 1016 0 0 1213 160
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 183 0 249 208 1016 0 0 1213 160
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
FinalVolume: 0 0 0 183 0 249 208 1016 0 0 1213 160
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.95 1.00 0.85 0.95 0.95 1.00 1.00 0.93 0.93
Lanes: 0.00 0.00 0.00 1.00 0.00 1.00 1.00 2.00 0.00 0.00 1.77 0.23
Final Sat.: 0 0 0 1805 0 1615 1805 3610 0 0 3132 413
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.10 0.00 0.15 0.12 0.28 0.00 0.00 0.39 0.39
Crit Moves: ****
Green/Cycle: 0.00 0.00 0.00 0.15 0.00 0.31 0.17 0.73 0.00 0.00 0.56 0.56
Volume/Cap: 0.00 0.00 0.00 0.69 0.00 0.49 0.69 0.39 0.00 0.00 0.69 0.69
Delay/Veh: 0.0 0.0 0.0 36.1 0.0 20.3 34.3 3.8 0.0 0.0 12.2 12.2
User DelAdj: 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 0.0 0.0 36.1 0.0 20.3 34.3 3.8 0.0 0.0 12.2 12.2
LOS by Move: A A A D A C C A A A B B
HCM2k95thQ: 0 0 0 10 0 10 11 9 0 0 22 22
Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative A (Mitigated)
 Baseline AM Peak Hour

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.688
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.8
 Optimal Cycle: 47 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:	Split Phase				Split Phase				Protected				Protected			
Rights:	Ovl				Include				Include				Include			
Min. Green:	0	0	10		7	10	10		0	10	10		7	10	0	
Lanes:	0	0	0	1	1	1	0	2	0	0	1	1	0	1	0	0

Volume Module: >> Count Date: 19 Sep 2007 << 0715

Base Vol:	0	0	162	402	32	600	0	844	77	124	612	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	0	162	402	32	600	0	844	77	124	612	0
Added Vol:	0	0	0	0	0	41	0	81	1	0	46	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	162	402	32	641	0	925	78	124	658	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	0	162	402	32	641	0	925	78	124	658	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	162	402	32	641	0	925	78	124	658	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
FinalVolume:	0	0	162	402	32	641	0	925	78	124	658	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.87	0.96	0.96	0.75	1.00	0.94	0.94	0.95	0.95	1.00
Lanes:	0.00	0.00	1.00	1.85	0.15	2.00	0.00	1.84	0.16	1.00	2.00	0.00
Final Sat.:	0	0	1644	3365	268	2842	0	3289	277	1805	3610	0

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.10	0.12	0.12	0.23	0.00	0.28	0.28	0.07	0.18	0.00
Crit Moves:	****		****	****		****	****		****	****		****
Green/Cycle:	0.00	0.00	0.11	0.33	0.33	0.33	0.00	0.41	0.41	0.10	0.51	0.00
Volume/Cap:	0.00	0.00	0.92	0.36	0.36	0.69	0.00	0.69	0.69	0.69	0.36	0.00
Delay/Veh:	0.0	0.0	77.7	19.4	19.4	24.1	0.0	19.6	19.6	43.3	11.2	0.0
User DelAdj:	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	0.0	77.7	19.4	19.4	24.1	0.0	19.6	19.6	43.3	11.2	0.0
LOS by Move:	A	A	E	B	B	C	A	B	B	D	B	A
HCM2k95thQ:	0	0	13	8	8	16	0	20	20	8	10	0

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative A (Mitigated)
 Baseline PM Peak Hour

Scenario Report

Scenario: PM
 Command: PM
 Volume: PM
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: PM
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: PM

 Curtis Park Village
 Reduced Commercial - Alternative A (Mitigated)
 Baseline PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #17 Road A/Sutterville Road

 Cycle (sec): 70 Critical Vol./Cap.(X): 0.860
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.2
 Optimal Cycle: 74 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: Protected Protected Protected Protected
 Rights: Include Ovl Include Include
 Min. Green: 0 0 0 4 0 10 4 10 0 0 10 10
 Lanes: 0 0 0 0 0 1 0 0 0 1 1 0 2 0 0 0 0 1 1 0

 Volume Module: >> Count Date: 19 Apr 2005 << except thru movements
 Base Vol: 0 0 0 76 0 387 54 939 0 0 1193 38
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.08 1.00 1.00 1.00 1.00
 Initial Bse: 0 0 0 76 0 387 54 1014 0 0 1193 38
 Added Vol: 0 0 0 166 0 90 103 1 0 0 0 204
 PasserByVol: 0 0 0 57 0 69 57 -57 0 0 -69 69
 Initial Fut: 0 0 0 299 0 546 214 958 0 0 1124 311
 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 0 0 299 0 546 214 958 0 0 1124 311
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 0 0 0 299 0 546 214 958 0 0 1124 311
 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
 FinalVolume: 0 0 0 299 0 546 214 958 0 0 1124 311

 Saturation Flow Module:
 Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
 Adjustment: 1.00 1.00 1.00 0.95 1.00 0.85 0.95 0.95 1.00 1.00 0.92 0.92
 Lanes: 0.00 0.00 0.00 1.00 0.00 1.00 1.00 2.00 0.00 0.00 1.57 0.43
 Final Sat.: 0 0 0 1805 0 1615 1805 3610 0 0 2734 757

 Capacity Analysis Module:
 Vol/Sat: 0.00 0.00 0.00 0.17 0.00 0.34 0.12 0.27 0.00 0.00 0.41 0.41
 Crit Moves: **** *
 Green/Cycle: 0.00 0.00 0.00 0.26 0.00 0.39 0.14 0.62 0.00 0.00 0.48 0.48
 Volume/Cap: 0.00 0.00 0.00 0.65 0.00 0.86 0.86 0.43 0.00 0.00 0.86 0.86
 Delay/Veh: 0.0 0.0 0.0 26.5 0.0 30.9 54.2 7.2 0.0 0.0 20.9 20.9
 User DelAdj: 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 0.0 0.0 26.5 0.0 30.9 54.2 7.2 0.0 0.0 20.9 20.9
 LOS by Move: A A A C A C D A A A C C
 HCM2k95thQ: 0 0 0 13 0 25 14 11 0 0 31 31

 Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative A (Mitigated)
 Baseline PM Peak Hour

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.749
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 20.1
 Optimal Cycle: 55 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:	Split Phase				Split Phase				Protected				Protected			
Rights:	Ovl				Include				Include				Include			
Min. Green:	0	0	10		7	10	10		0	10	10		7	10	0	
Lanes:	0	0	0	1	1	1	0	2	0	0	1	1	0	1	0	2

Volume Module: >> Count Date: 19 Sep 2007 << 1700

Base Vol:	0	0	55	447	83	730	0	844	117	121	676	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	0	55	447	83	730	0	844	117	121	676	0
Added Vol:	0	0	0	0	0	101	0	100	4	0	112	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	55	447	83	831	0	944	121	121	788	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	0	55	447	83	831	0	944	121	121	788	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	55	447	83	831	0	944	121	121	788	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
FinalVolume:	0	0	55	447	83	831	0	944	121	121	788	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.87	0.96	0.96	0.75	1.00	0.93	0.93	0.95	0.95	1.00
Lanes:	0.00	0.00	1.00	1.69	0.31	2.00	0.00	1.77	0.23	1.00	2.00	0.00
Final Sat.:	0	0	1644	3077	571	2842	0	3145	403	1805	3610	0

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.03	0.15	0.15	0.29	0.00	0.30	0.30	0.07	0.22	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.00	0.00	0.09	0.39	0.39	0.39	0.00	0.40	0.40	0.09	0.49	0.00
Volume/Cap:	0.00	0.00	0.36	0.37	0.37	0.75	0.00	0.75	0.75	0.72	0.44	0.00
Delay/Veh:	0.0	0.0	33.3	16.6	16.6	22.8	0.0	21.7	21.7	46.9	12.6	0.0
User DelAdj:	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	0.0	33.3	16.6	16.6	22.8	0.0	21.7	21.7	46.9	12.6	0.0
LOS by Move:	A	A	C	B	B	C	A	C	C	D	B	A
HCM2k95thQ:	0	0	3	9	9	20	0	23	23	9	12	0

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Reduced Commercial - Alternative A (Mitigated)
 Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

Curtis Park Village
 Reduced Commercial - Alternative A (Mitigated)
 Baseline Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #17 Road A/Sutterville Road

 Cycle (sec): 70 Critical Vol./Cap.(X): 0.651
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.8
 Optimal Cycle: 43 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: Protected Protected Protected Protected
 Rights: Include Ovl Include Include
 Min. Green: 0 0 0 4 0 10 4 10 0 0 10 10
 Lanes: 0 0 0 0 1 0 0 0 1 1 0 2 0 0 0 0 1 1 0
 -----|-----|-----|-----|
 Volume Module:
 Base Vol: 0 0 0 21 0 97 41 700 0 0 765 21
 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 0 0 21 0 97 41 700 0 0 765 21
 Added Vol: 0 0 0 188 0 101 112 0 0 0 0 216
 PasserByVol: 0 0 0 68 0 83 68 -68 0 0 -83 83
 Initial Fut: 0 0 0 277 0 281 221 632 0 0 682 320
 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 0 0 277 0 281 221 632 0 0 682 320
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 0 0 0 277 0 281 221 632 0 0 682 320
 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
 FinalVolume: 0 0 0 277 0 281 221 632 0 0 682 320
 -----|-----|-----|-----|
 Saturation Flow Module:
 Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
 Adjustment: 1.00 1.00 1.00 0.95 1.00 0.85 0.95 0.95 1.00 1.00 0.90 0.90
 Lanes: 0.00 0.00 0.00 1.00 0.00 1.00 1.00 2.00 0.00 0.00 1.36 0.64
 Final Sat.: 0 0 0 1805 0 1615 1805 3610 0 0 2339 1098
 -----|-----|-----|-----|
 Capacity Analysis Module:
 Vol/Sat: 0.00 0.00 0.00 0.15 0.00 0.17 0.12 0.18 0.00 0.00 0.29 0.29
 Crit Moves: **** *
 Green/Cycle: 0.00 0.00 0.00 0.24 0.00 0.42 0.19 0.64 0.00 0.00 0.45 0.45
 Volume/Cap: 0.00 0.00 0.00 0.65 0.00 0.41 0.65 0.28 0.00 0.00 0.65 0.65
 Delay/Veh: 0.0 0.0 0.0 27.7 0.0 14.5 30.7 5.7 0.0 0.0 16.1 16.1
 User DelAdj: 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 0.0 0.0 27.7 0.0 14.5 30.7 5.7 0.0 0.0 16.1 16.1
 LOS by Move: A A A C A B C A A A B B
 HCM2k95thQ: 0 0 0 13 0 9 11 6 0 0 18 18

 Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative A (Mitigated)
 Baseline Saturday Peak Hour

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.813
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.5
 Optimal Cycle: 65 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:	Split Phase				Split Phase				Protected				Protected			
Rights:	Ovl				Include				Include				Include			
Min. Green:	0	0	10		7	10	10		0	10	10		7	10	0	
Lanes:	0	0	0	1	1	1	0	2	0	0	1	1	0	1	0	2

Volume Module: >> Count Date: 2 Apr 2005 <<

Base Vol:	0	0	47	377	31	571	0	757	116	183	487	0
Growth Adj:	1.00	1.00	1.00	1.14	1.14	1.14	1.12	1.12	1.32	1.32	1.00	1.00
Initial Bse:	0	0	47	430	35	651	0	848	153	242	487	0
Added Vol:	0	0	0	0	0	102	0	113	5	0	119	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	47	430	35	753	0	961	158	242	606	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	0	47	430	35	753	0	961	158	242	606	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	47	430	35	753	0	961	158	242	606	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
FinalVolume:	0	0	47	430	35	753	0	961	158	242	606	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.87	0.96	0.96	0.75	1.00	0.93	0.93	0.95	0.95	1.00
Lanes:	0.00	0.00	1.00	1.85	0.15	2.00	0.00	1.72	0.28	1.00	2.00	0.00
Final Sat.:	0	0	1644	3357	276	2842	0	3035	499	1805	3610	0

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.03	0.13	0.13	0.26	0.00	0.32	0.32	0.13	0.17	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.00	0.00	0.16	0.33	0.33	0.33	0.00	0.39	0.39	0.16	0.55	0.00
Volume/Cap:	0.00	0.00	0.17	0.39	0.39	0.81	0.00	0.81	0.81	0.81	0.30	0.00
Delay/Veh:	0.0	0.0	27.2	19.8	19.8	28.7	0.0	24.3	24.3	45.8	9.0	0.0
User DelAdj:	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	0.0	27.2	19.8	19.8	28.7	0.0	24.3	24.3	45.8	9.0	0.0
LOS by Move:	A	A	C	B	B	C	A	C	C	D	A	A
HCM2k95thQ:	0	0	2	9	9	21	0	26	26	15	8	0

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #21 SR 99 SB Ramp/Sutterville Rd
Cycle (sec): 75 Critical Vol./Cap.(X): 0.687
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.8
Optimal Cycle: 47 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: Split Phase Split Phase Protected Protected
Rights: Ovl Include Include Include
Min. Green: 0 0 10 7 10 10 0 10 10 7 10 0
Lanes: 0 0 0 0 1 1 1 0 0 2 0 0 1 1 0 1 0 2 0 0
Volume Module: >> Count Date: 19 Sep 2007 << 0715
Base Vol: 0 0 162 402 32 600 0 844 77 124 612 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 0 162 402 32 600 0 844 77 124 612 0
Added Vol: 0 0 0 0 0 38 0 83 1 0 42 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 162 402 32 638 0 927 78 124 654 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 0 162 402 32 638 0 927 78 124 654 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 162 402 32 638 0 927 78 124 654 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
FinalVolume: 0 0 162 402 32 638 0 927 78 124 654 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 0.87 0.96 0.96 0.75 1.00 0.94 0.94 0.95 0.95 1.00
Lanes: 0.00 0.00 1.00 1.85 0.15 2.00 0.00 1.84 0.16 1.00 2.00 0.00
Final Sat.: 0 0 1644 3365 268 2842 0 3290 277 1805 3610 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.10 0.12 0.12 0.22 0.00 0.28 0.28 0.07 0.18 0.00
Crit Moves: **** **** ****
Green/Cycle: 0.00 0.00 0.11 0.33 0.33 0.33 0.00 0.41 0.41 0.10 0.51 0.00
Volume/Cap: 0.00 0.00 0.92 0.37 0.37 0.69 0.00 0.69 0.69 0.69 0.36 0.00
Delay/Veh: 0.0 0.0 77.5 19.5 19.5 24.1 0.0 19.6 19.6 43.2 11.1 0.0
User DelAdj: 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 0.0 77.5 19.5 19.5 24.1 0.0 19.6 19.6 43.2 11.1 0.0
LOS by Move: A A E B B C A B B D B A
HCM2kAvgQ: 0 0 7 4 4 9 0 11 11 4 5 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Baseline PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #21 SR 99 SB Ramp/Sutterville Rd
Cycle (sec): 75 Critical Vol./Cap.(X): 0.744
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 20.0
Optimal Cycle: 54 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: Split Phase Split Phase Protected Protected
Rights: Ovl Include Include Include
Min. Green: 0 0 10 7 10 10 0 10 10 7 10 0
Lanes: 0 0 0 0 1 1 1 0 0 2 0 0 1 1 0 1 0 2 0 0
Volume Module: >> Count Date: 19 Sep 2007 << 1700
Base Vol: 0 0 55 447 83 730 0 844 117 121 676 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 0 55 447 83 730 0 844 117 121 676 0
Added Vol: 0 0 0 0 0 96 0 88 4 0 102 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 55 447 83 826 0 932 121 121 778 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 0 55 447 83 826 0 932 121 121 778 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 55 447 83 826 0 932 121 121 778 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
FinalVolume: 0 0 55 447 83 826 0 932 121 121 778 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 0.87 0.96 0.96 0.75 1.00 0.93 0.93 0.95 0.95 1.00
Lanes: 0.00 0.00 1.00 1.69 0.31 2.00 0.00 1.77 0.23 1.00 2.00 0.00
Final Sat.: 0 0 1644 3077 571 2842 0 3141 408 1805 3610 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.03 0.15 0.15 0.29 0.00 0.30 0.30 0.07 0.22 0.00
Crit Moves: **** **** ****
Green/Cycle: 0.00 0.00 0.09 0.39 0.39 0.39 0.00 0.40 0.40 0.09 0.49 0.00
Volume/Cap: 0.00 0.00 0.36 0.37 0.37 0.75 0.00 0.75 0.75 0.72 0.44 0.00
Delay/Veh: 0.0 0.0 33.3 16.5 16.5 22.6 0.0 21.6 21.6 46.9 12.6 0.0
User DelAdj: 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 0.0 33.3 16.5 16.5 22.6 0.0 21.6 21.6 46.9 12.6 0.0
LOS by Move: A A C B B C A C C D B A
HCM2k95thQ: 0 0 3 9 9 20 0 23 23 9 12 0
Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative B (Mitigated)
 Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

 Curtis Park Village
 Reduced Commercial - Alternative B (Mitigated)
 Baseline Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #21 SR 99 SB Ramp/Sutterville Rd

 Cycle (sec): 75 Critical Vol./Cap.(X): 0.804
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.2
 Optimal Cycle: 64 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: Split Phase Split Phase Protected Protected
 Rights: Ovl Include Include Include
 Min. Green: 0 0 10 7 10 10 0 10 10 7 10 0
 Lanes: 0 0 0 0 1 1 1 0 0 2 0 0 1 1 0 1 0 2 0 0
 -----|-----|-----|-----|
 Volume Module: >> Count Date: 2 Apr 2005 <<
 Base Vol: 0 0 47 377 31 571 0 757 116 183 487 0
 Growth Adj: 1.00 1.00 1.00 1.14 1.14 1.14 1.12 1.12 1.32 1.32 1.00 1.00
 Initial Bse: 0 0 47 430 35 651 0 848 153 242 487 0
 Added Vol: 0 0 0 0 0 91 0 99 5 0 101 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 0 0 47 430 35 742 0 947 158 242 588 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 0 47 430 35 742 0 947 158 242 588 0
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 0 0 47 430 35 742 0 947 158 242 588 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
 FinalVolume: 0 0 47 430 35 742 0 947 158 242 588 0
 -----|-----|-----|-----|
 Saturation Flow Module:
 Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
 Adjustment: 1.00 1.00 0.87 0.96 0.96 0.75 1.00 0.93 0.93 0.95 0.95 1.00
 Lanes: 0.00 0.00 1.00 1.85 0.15 2.00 0.00 1.71 0.29 1.00 2.00 0.00
 Final Sat.: 0 0 1644 3357 276 2842 0 3028 506 1805 3610 0
 -----|-----|-----|-----|
 Capacity Analysis Module:
 Vol/Sat: 0.00 0.00 0.03 0.13 0.13 0.26 0.00 0.31 0.31 0.13 0.16 0.00
 Crit Moves: **** **** ****
 Green/Cycle: 0.00 0.00 0.17 0.32 0.32 0.32 0.00 0.39 0.39 0.17 0.56 0.00
 Volume/Cap: 0.00 0.00 0.17 0.39 0.39 0.80 0.00 0.80 0.80 0.80 0.29 0.00
 Delay/Veh: 0.0 0.0 27.1 19.8 19.8 28.3 0.0 23.9 23.9 44.6 8.9 0.0
 User DelAdj: 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 0.0 27.1 19.8 19.8 28.3 0.0 23.9 23.9 44.6 8.9 0.0
 LOS by Move: A A C B B C A C C D A A
 HCM2k95thQ: 0 0 2 9 9 21 0 25 25 15 8 0

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Baseline AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Multifamily Alternative C (Mitigated)
Baseline AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 70 Critical Vol./Cap.(X): 0.722
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 13.8
Optimal Cycle: 50 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: Protected Protected Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 0 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 0 0 0 1 0 0 0 1 1 0 2 0 0 0 0 1 1 0
Volume Module: >> Count Date: 19 Apr 2005 << except thru movements
Base Vol: 0 0 0 48 0 168 142 1039 0 0 1240 48
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 0 0 48 0 168 142 1039 0 0 1240 48
Added Vol: 0 0 0 115 0 57 55 0 0 0 1 105
PasserByVol: 0 0 0 27 0 34 37 -27 0 0 -34 34
Initial Fut: 0 0 0 190 0 259 234 1012 0 0 1207 187
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 0 0 190 0 259 234 1012 0 0 1207 187
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 190 0 259 234 1012 0 0 1207 187
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
FinalVolume: 0 0 0 190 0 259 234 1012 0 0 1207 187
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.95 1.00 0.85 0.95 0.95 1.00 1.00 0.93 0.93
Lanes: 0.00 0.00 0.00 1.00 0.00 1.00 1.00 2.00 0.00 0.00 1.73 0.27
Final Sat.: 0 0 0 1805 0 1615 1805 3610 0 0 3063 475
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.11 0.00 0.16 0.13 0.28 0.00 0.00 0.39 0.39
Crit Moves: ****
Green/Cycle: 0.00 0.00 0.00 0.15 0.00 0.33 0.18 0.73 0.00 0.00 0.55 0.55
Volume/Cap: 0.00 0.00 0.00 0.72 0.00 0.49 0.72 0.39 0.00 0.00 0.72 0.72
Delay/Veh: 0.0 0.0 0.0 37.9 0.0 19.7 34.8 3.8 0.0 0.0 13.3 13.3
User DelAdj: 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 0.0 0.0 37.9 0.0 19.7 34.8 3.8 0.0 0.0 13.3 13.3
LOS by Move: A A A D A B C A A B B
HCM2k95thQ: 0 0 0 11 0 10 12 9 0 0 23 23
Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Multifamily Alternative C (Mitigated)
 Baseline AM Peak Hour

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.692
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.9
 Optimal Cycle: 48 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:	Split Phase				Split Phase				Protected				Protected			
Rights:	Ovl				Include				Include				Include			
Min. Green:	0	0	10		7	10	10		0	10	10		7	10	0	
Lanes:	0	0	0	1	1	1	0	2	0	0	1	1	0	1	0	2

Volume Module: >> Count Date: 19 Sep 2007 << 0715

Base Vol:	0	0	162	402	32	600	0	844	77	124	612	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	0	162	402	32	600	0	844	77	124	612	0
Added Vol:	0	0	0	0	0	49	0	83	1	0	58	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	162	402	32	649	0	927	78	124	670	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	0	162	402	32	649	0	927	78	124	670	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	162	402	32	649	0	927	78	124	670	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
FinalVolume:	0	0	162	402	32	649	0	927	78	124	670	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.87	0.96	0.96	0.75	1.00	0.94	0.94	0.95	0.95	1.00
Lanes:	0.00	0.00	1.00	1.85	0.15	2.00	0.00	1.84	0.16	1.00	2.00	0.00
Final Sat.:	0	0	1644	3365	268	2842	0	3290	277	1805	3610	0

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.10	0.12	0.12	0.23	0.00	0.28	0.28	0.07	0.19	0.00
Crit Moves:	****		****	****		****	****		****	****		****
Green/Cycle:	0.00	0.00	0.11	0.33	0.33	0.33	0.00	0.41	0.41	0.10	0.51	0.00
Volume/Cap:	0.00	0.00	0.92	0.36	0.36	0.69	0.00	0.69	0.69	0.69	0.37	0.00
Delay/Veh:	0.0	0.0	79.1	19.3	19.3	24.0	0.0	19.8	19.8	43.7	11.3	0.0
User DelAdj:	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	0.0	79.1	19.3	19.3	24.0	0.0	19.8	19.8	43.7	11.3	0.0
LOS by Move:	A	A	E	B	B	C	A	B	B	D	B	A
HCM2k95thQ:	0	0	13	8	8	16	0	20	20	8	10	0

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Baseline PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Multifamily Alternative C (Mitigated)
Baseline PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #17 Road A/Sutterville Road
Cycle (sec): 70 Critical Vol./Cap.(X): 0.926
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 27.7
Optimal Cycle: 96 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: Protected Protected Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 0 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 0 0 0 1 0 0 0 1 1 0 2 0 0 0 0 1 1 0
Volume Module:except thru movements
Base Vol: 0 0 0 76 0 387 54 939 0 0 1193 38
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.08 1.00 1.00 1.00 1.00
Initial Bse: 0 0 0 76 0 387 54 1014 0 0 1193 38
Added Vol: 0 0 0 222 0 125 136 1 0 0 0 262
PasserByVol: 0 0 0 78 0 95 78 -78 0 0 -95 95
Initial Fut: 0 0 0 376 0 607 268 937 0 0 1098 395
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 0 0 376 0 607 268 937 0 0 1098 395
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 376 0 607 268 937 0 0 1098 395
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
FinalVolume: 0 0 0 376 0 607 268 937 0 0 1098 395
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.95 1.00 0.85 0.95 0.95 1.00 1.00 0.91 0.91
Lanes: 0.00 0.00 0.00 1.00 0.00 1.00 1.00 2.00 0.00 0.00 1.47 0.53
Final Sat.: 0 0 0 1805 0 1615 1805 3610 0 0 2549 917
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.21 0.00 0.38 0.15 0.26 0.00 0.00 0.43 0.43
Crit Moves: ****
Green/Cycle: 0.00 0.00 0.00 0.25 0.00 0.41 0.16 0.63 0.00 0.00 0.47 0.47
Volume/Cap: 0.00 0.00 0.00 0.85 0.00 0.93 0.93 0.41 0.00 0.00 0.93 0.93
Delay/Veh: 0.0 0.0 0.0 39.4 0.0 38.9 62.9 6.7 0.0 0.0 27.1 27.1
User DelAdj: 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 0.0 0.0 39.4 0.0 38.9 62.9 6.7 0.0 0.0 27.1 27.1
LOS by Move: A A A D A D E A A A C C
HCM2k95thQ: 0 0 0 20 0 30 18 11 0 0 36 36
Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Multifamily Alternative C (Mitigated)
 Baseline PM Peak Hour

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.769
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 20.5
 Optimal Cycle: 58 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:	Split Phase				Split Phase				Protected				Protected			
Rights:	Ovl				Include				Include				Include			
Min. Green:	0	0	10		7	10	10		0	10	10		7	10	0	
Lanes:	0	0	0	1	1	1	0	2	0	0	1	1	0	1	0	0

Volume Module: >> Count Date: 19 Sep 2007 << 1700

Base Vol:	0	0	55	447	83	730	0	844	117	121	676	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	0	55	447	83	730	0	844	117	121	676	0
Added Vol:	0	0	0	0	0	125	0	128	7	0	145	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	55	447	83	855	0	972	124	121	821	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	0	55	447	83	855	0	972	124	121	821	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	55	447	83	855	0	972	124	121	821	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
FinalVolume:	0	0	55	447	83	855	0	972	124	121	821	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.87	0.96	0.96	0.75	1.00	0.93	0.93	0.95	0.95	1.00
Lanes:	0.00	0.00	1.00	1.69	0.31	2.00	0.00	1.77	0.23	1.00	2.00	0.00
Final Sat.:	0	0	1644	3077	571	2842	0	3147	401	1805	3610	0

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.03	0.15	0.15	0.30	0.00	0.31	0.31	0.07	0.23	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.00	0.00	0.09	0.39	0.39	0.39	0.00	0.40	0.40	0.09	0.49	0.00
Volume/Cap:	0.00	0.00	0.36	0.37	0.37	0.77	0.00	0.77	0.77	0.72	0.46	0.00
Delay/Veh:	0.0	0.0	33.3	16.6	16.6	23.6	0.0	22.4	22.4	46.9	12.7	0.0
User DelAdj:	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	0.0	33.3	16.6	16.6	23.6	0.0	22.4	22.4	46.9	12.7	0.0
LOS by Move:	A	A	C	B	B	C	A	C	C	D	B	A
HCM2k95thQ:	0	0	3	9	9	21	0	24	24	9	13	0

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Baseline Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Multifamily Alternative C (Mitigated)
Baseline Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.782
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 20.0
Optimal Cycle: 58 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: Protected Protected Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 0 0 4 0 10 4 10 0 0 10 10
Lanes: 0 0 0 0 1 0 0 0 1 1 0 2 0 0 0 0 1 1 0
-----|-----|-----|-----|
Volume Module:
Base Vol: 0 0 0 21 0 97 41 700 0 0 765 21
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 0 0 21 0 97 41 700 0 0 765 21
Added Vol: 0 0 0 249 0 138 153 0 0 0 0 292
PasserByVol: 0 0 0 96 0 118 96 -96 0 0 -118 118
Initial Fut: 0 0 0 366 0 353 290 604 0 0 647 431
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 0 0 366 0 353 290 604 0 0 647 431
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 366 0 353 290 604 0 0 647 431
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
FinalVolume: 0 0 0 366 0 353 290 604 0 0 647 431
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.95 1.00 0.85 0.95 0.95 1.00 1.00 0.89 0.89
Lanes: 0.00 0.00 0.00 1.00 0.00 1.00 1.00 2.00 0.00 0.00 1.20 0.80
Final Sat.: 0 0 0 1805 0 1615 1805 3610 0 0 2037 1357
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.20 0.00 0.22 0.16 0.17 0.00 0.00 0.32 0.32
Crit Moves: **** *
Green/Cycle: 0.00 0.00 0.00 0.26 0.00 0.46 0.21 0.61 0.00 0.00 0.41 0.41
Volume/Cap: 0.00 0.00 0.00 0.78 0.00 0.47 0.78 0.27 0.00 0.00 0.78 0.78
Delay/Veh: 0.0 0.0 0.0 32.4 0.0 13.3 36.6 6.4 0.0 0.0 21.0 21.0
User DelAdj: 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 0.0 0.0 32.4 0.0 13.3 36.6 6.4 0.0 0.0 21.0 21.0
LOS by Move: A A A C A B D A A C C
HCM2k95thQ: 0 0 0 18 0 11 15 7 0 0 23 23

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Multifamily Alternative C (Mitigated)
 Baseline Saturday Peak Hour

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.837
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.3
 Optimal Cycle: 71 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:	Split Phase				Split Phase				Protected				Protected			
Rights:	Ovl				Include				Include				Include			
Min. Green:	0	0	10		7	10	10		0	10	10		7	10	0	
Lanes:	0	0	0	1	1	1	0	2	0	0	1	1	0	1	0	2

Volume Module: >> Count Date: 2 Apr 2005 <<

Base Vol:	0	0	47	377	31	571	0	757	116	183	487	0
Growth Adj:	1.00	1.00	1.00	1.14	1.14	1.14	1.12	1.12	1.32	1.32	1.00	1.00
Initial Bse:	0	0	47	430	35	651	0	848	153	242	487	0
Added Vol:	0	0	0	0	0	134	0	146	7	0	161	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	47	430	35	785	0	994	160	242	648	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	0	47	430	35	785	0	994	160	242	648	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	47	430	35	785	0	994	160	242	648	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
FinalVolume:	0	0	47	430	35	785	0	994	160	242	648	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	0.87	0.96	0.96	0.75	1.00	0.93	0.93	0.95	0.95	1.00
Lanes:	0.00	0.00	1.00	1.85	0.15	2.00	0.00	1.72	0.28	1.00	2.00	0.00
Final Sat.:	0	0	1644	3357	276	2842	0	3044	490	1805	3610	0

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.03	0.13	0.13	0.28	0.00	0.33	0.33	0.13	0.18	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.00	0.00	0.16	0.33	0.33	0.33	0.00	0.39	0.39	0.16	0.55	0.00
Volume/Cap:	0.00	0.00	0.18	0.39	0.39	0.84	0.00	0.84	0.84	0.84	0.33	0.00
Delay/Veh:	0.0	0.0	27.6	19.5	19.5	29.9	0.0	25.4	25.4	49.4	9.4	0.0
User DelAdj:	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	0.0	27.6	19.5	19.5	29.9	0.0	25.4	25.4	49.4	9.4	0.0
LOS by Move:	A	A	C	B	B	C	A	C	C	D	A	A
HCM2k95thQ:	0	0	2	9	9	22	0	27	27	15	9	0

Note: Queue reported is the number of cars per lane.

LOS Worksheets
Cumulative Conditions

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.617
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.1
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 116 318 39 77 210 138 123 973 63 145 951 98
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: 116 318 39 77 210 138 123 973 63 145 951 98
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 116 318 39 77 210 138 123 973 63 145 951 98
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: 116 318 39 77 210 138 123 973 63 145 951 98
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 116 318 39 77 210 138 123 973 63 145 951 98
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
FinalVolume: 116 318 39 77 210 138 123 973 63 145 951 98
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.50 1.00 0.85 0.33 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.88 0.12 1.00 1.81 0.19
Final Sat.: 944 1900 1615 623 1900 1615 1805 3360 218 1805 3227 333
Capacity Analysis Module:
Vol/Sat: 0.12 0.17 0.02 0.12 0.11 0.09 0.07 0.29 0.29 0.08 0.29 0.29
Crit Moves: ****
Green/Cycle: 0.27 0.27 0.27 0.27 0.27 0.27 0.11 0.47 0.47 0.13 0.49 0.49
Volume/Cap: 0.45 0.62 0.09 0.46 0.41 0.31 0.60 0.62 0.62 0.62 0.60 0.60
Delay/Veh: 22.4 24.6 19.1 23.1 21.4 20.7 34.7 14.6 14.6 33.7 13.7 13.7
User DelAdj: 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: 22.4 24.6 19.1 23.1 21.4 20.7 34.7 14.6 14.6 33.7 13.7 13.7
LOS by Move: C C B C C C C B B C B B
HCM2k95thQ: 5 13 1 4 8 5 7 18 18 8 17 17
Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.848
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 32.0
Optimal Cycle: 69 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.605
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.9
Optimal Cycle: 32 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 1.050
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 46.2
Optimal Cycle: 0 Level Of Service: E

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 1 0 0 0

Volume Module:
Base Vol: 249 443 17 11 139 54 49 94 21 5 110 23
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: 249 443 17 11 139 54 49 94 21 5 110 23
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 249 443 17 11 139 54 49 94 21 5 110 23
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: 249 443 17 11 139 54 49 94 21 5 110 23
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 249 443 17 11 139 54 49 94 21 5 110 23
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
FinalVolume: 249 443 17 11 139 54 49 94 21 5 110 23

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: 0.35 0.63 0.02 0.07 0.93 1.00 0.30 0.57 0.13 0.03 0.80 0.17
Final Sat.: 237 422 16 41 512 624 162 311 69 20 431 90

Capacity Analysis Module:
Vol/Sat: 1.05 1.05 1.05 0.27 0.27 0.09 0.30 0.30 0.30 0.26 0.26 0.26
Crit Moves: ****
Delay/Veh: 71.1 71.1 71.1 11.2 11.2 8.8 12.1 12.1 12.1 11.6 11.6 11.6
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: 71.1 71.1 71.1 11.2 11.2 8.8 12.1 12.1 12.1 11.6 11.6 11.6
LOS by Move: F F B B A B B B B B
ApproachDel: 71.1 10.6 12.1 11.6
Delay Adj: 1.00 1.00
ApprAdjDel: 71.1 10.6 12.1 11.6
LOS by Appr: F B B B
AllWayAvgQ: 11.8 11.8 11.8 0.3 0.3 0.1 0.4 0.4 0.4 0.3 0.3 0.3

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.3 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: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 1 0 0 0 0 0 0 0 0 1

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 1044 104 20 559 0 0 0 0 0 0 0 150
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 1044 104 20 559 0 0 0 0 0 0 0 150
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 1044 104 20 559 0 0 0 0 0 0 0 150
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 1044 104 20 559 0 0 0 0 0 0 0 150
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 1044 104 20 559 0 0 0 0 0 0 0 150

Critical Gap Module:
Critical Gap:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 6.2
FollowUpTim:xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxx 3.3

Capacity Module:
Conflict Vol: xxxxx xxxxx xxxxxx 1148 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 574
Potent Cap.: xxxxx xxxxx xxxxxx 616 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 522
Move Cap.: xxxxx xxxxx xxxxxx 616 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 522
Volume/Cap: xxxxx xxxxx xxxxxx 0.03 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.29

Level of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 1.2
Control Del:xxxxxx xxxxx xxxxxx 11.0 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 14.7
LOS by Move: * * * B * * * * * * * * * B
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 11.0 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxx
Shared LOS: * * * B * * * * * * * * * *
ApproachDel: xxxxxxx xxxxxxx xxxxxxx 14.7
ApproachLOS: * * * * *

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.895
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 62.9
Optimal Cycle: 84 Level of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Grid of traffic volume and adjustment factors for various approaches and movements.

Saturation Flow Module: Grid showing saturation flow rates and adjustment factors for different lane configurations.

Capacity Analysis Module: Grid showing capacity analysis metrics such as Vol/Sat, Crit Moves, Green/Cycle, and Delay/Veh.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.952
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 19.6
Optimal Cycle: 111 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Grid of traffic volume and adjustment factors for various approaches and movements.

Saturation Flow Module: Grid showing saturation flow rates and adjustment factors for different lane configurations.

Capacity Analysis Module: Grid showing capacity analysis metrics such as Vol/Sat, Crit Moves, Green/Cycle, and Delay/Veh.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.957
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 32.6
Optimal Cycle: 0 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns for flow directions and 12 rows for various volume and adjustment factors.

Saturation Flow Module table with 12 columns for flow directions and 4 rows for adjustment factors.

Capacity Analysis Module table with 12 columns for flow directions and 12 rows for delay, LOS, and approach metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[14.5]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module table with 12 columns for flow directions and 12 rows for various volume and adjustment factors.

Critical Gap Module table with 12 columns for flow directions and 3 rows for gap and follow-up time.

Capacity Module table with 12 columns for flow directions and 5 rows for capacity and volume metrics.

Level of Service Module table with 12 columns for flow directions and 12 rows for delay, LOS, and approach metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy
Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[14.1]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 613 13 53 144 0 0 0 0 6 0 68
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: 0 613 13 53 144 0 0 0 0 6 0 68
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Diverted Tr: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 613 13 53 144 0 0 0 0 6 0 68
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: 0 613 13 53 144 0 0 0 0 6 0 68
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 613 13 53 144 0 0 0 0 6 0 68
Critical Gap Module:
Critical Gap:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 6.4 6.5 6.2
FollowUpTim:xxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 626 xxxxx xxxxxx xxxxx xxxxx xxxxxx 870 870 620
Potent Cap.: xxxxx xxxxx xxxxxx 965 xxxxx xxxxxx xxxxx xxxxx xxxxxx 325 292 492
Move Cap.: xxxxx xxxxx xxxxxx 965 xxxxx xxxxxx xxxxx xxxxx xxxxxx 311 276 492
Volume/Cap: xxxxx xxxxx xxxxxx 0.05 xxxxx xxxxxx xxxxx xxxxx xxxxxx 0.02 0.00 0.14
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxx xxxxx xxxxxx 8.9 xxxxx xxxxxx xxxxxx 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 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx 470 xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx 0.6 xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 8.9 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx 14.1 xxxxxx
Shared LOS: * * * A * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx 14.1
ApproachLOS: * * * * * B
Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.539
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.8
Optimal Cycle: 27 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 10 0 4 10 0 0 0 0 0 4 0 10
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 637 163 25 229 0 0 0 0 43 0 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: 0 637 163 25 229 0 0 0 0 43 0 29
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 637 163 25 229 0 0 0 0 43 0 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: 0 637 163 25 229 0 0 0 0 43 0 29
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 637 163 25 229 0 0 0 0 43 0 29
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
FinalVolume: 0 637 163 25 229 0 0 0 0 43 0 29
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.97 0.97 0.92 0.92 1.00 1.00 1.00 1.00 0.92 1.00 0.92
Lanes: 0.00 0.80 0.20 0.10 0.90 0.00 0.00 0.00 0.00 0.60 0.00 0.40
Final Sat.: 0 1471 376 172 1578 0 0 0 0 1042 0 703
Capacity Analysis Module:
Vol/Sat: 0.00 0.43 0.43 0.15 0.15 0.00 0.00 0.00 0.00 0.04 0.00 0.04
Crit Moves: ****
Green/Cycle: 0.00 0.68 0.68 0.68 0.68 0.00 0.00 0.00 0.00 0.20 0.00 0.20
Volume/Cap: 0.00 0.64 0.64 0.21 0.21 0.00 0.00 0.00 0.00 0.21 0.00 0.21
Delay/Veh: 0.0 5.6 5.6 3.1 3.1 0.0 0.0 0.0 0.0 17.0 0.0 17.0
User DelAdj: 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 5.6 5.6 3.1 3.1 0.0 0.0 0.0 0.0 17.0 0.0 17.0
LOS by Move: A A A A A A A A A B A B
HCM2k95thQ: 0 15 15 3 3 0 0 0 0 2 0 2
Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[13.0]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Table with 12 columns: Volume Module, Count, Date, and 11 traffic flow categories. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Table with 12 columns: Critical Gap Module, Critical Gp, FollowUpTim, and 10 traffic flow categories. Rows include Critical Gp and FollowUpTim.

Table with 12 columns: Capacity Module, Cnflct Vol, Potent Cap., Move Cap., and 10 traffic flow categories. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Table with 12 columns: Level of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: B[13.5]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Table with 12 columns: Volume Module, Count, Date, and 11 traffic flow categories. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Table with 12 columns: Critical Gap Module, Critical Gp, FollowUpTim, and 10 traffic flow categories. Rows include Critical Gp and FollowUpTim.

Table with 12 columns: Capacity Module, Cnflct Vol, Potent Cap., Move Cap., and 10 traffic flow categories. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Table with 12 columns: Level of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.112
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 68.8
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for growth/initial/added/passing/initial volume factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.562
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.2
Optimal Cycle: 44 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for growth/initial/added/passing/initial volume factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.144
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 73.8
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West), Movement (L, T, R), Control (Split Phase, Protected), Rights (Include, Ovl), and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with 12 columns showing traffic volume and delay metrics for each approach and movement.

Saturation Flow Module: Table with 12 columns showing saturation flow rates for each approach and movement.

Capacity Analysis Module: Table with 12 columns showing capacity analysis metrics like Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[20.9]

Table with 4 columns: Approach (North, South, East, West), Movement (L, T, R), Control (Stop Sign, Yield Sign, Uncontrolled), Rights (Ignore, Include, Ignore), and Lanes.

Volume Module: except thru movements

Table with 12 columns showing traffic volume and delay metrics for each approach and movement.

Critical Gap Module:

Table with 12 columns showing critical gap and follow-up time metrics.

Capacity Module:

Table with 12 columns showing capacity module metrics like Cnflct Vol, Potent Cap, etc.

Level Of Service Module:

Table with 12 columns showing level of service module metrics like 2Way95thQ, Control Del, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.911
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.9
Optimal Cycle: 90 Level Of Service: B

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: D[31.3]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for Critical Gap, FollowUpTim, and Capacity Module.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.970
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 46.7
Optimal Cycle: 123 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various adjustment factors like Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.998
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 41.1
Optimal Cycle: 153 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various adjustment factors like Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.801
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 20.4
Optimal Cycle: 63 Level Of Service: C

Table with columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Permitted, Protected), Rights (Include), and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 384 2 130 0 0 0 589 1035 0 0 565 426
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

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.89 0.89 0.85 1.00 1.00 1.00 0.95 0.95 1.00 1.00 0.95 0.85

Capacity Analysis Module:
Vol/Sat: 0.11 0.11 0.08 0.00 0.00 0.00 0.33 0.29 0.00 0.00 0.16 0.26
Crit Moves: ****
Green/Cycle: 0.14 0.14 0.14 0.00 0.00 0.00 0.41 0.74 0.00 0.00 0.33 0.33

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.995
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 44.9
Optimal Cycle: 140 Level Of Service: D

Table with columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Protected, Split Phase), Rights (Include), and Lanes.

Volume Module:
Base Vol: 504 1996 0 0 604 244 524 0 169 0 3 36
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

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.95 1.00 1.00 0.95 0.85 0.95 1.00 0.85 1.00 0.88 0.88

Capacity Analysis Module:
Vol/Sat: 0.28 0.55 0.00 0.00 0.17 0.15 0.29 0.00 0.10 0.00 0.02 0.02
Crit Moves: ****
Green/Cycle: 0.33 0.53 0.00 0.00 0.20 0.20 0.28 0.00 0.28 0.00 0.06 0.06

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (south)

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[11.4]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module:

Base Vol:	37	704	0	0	259	13	7	0	48	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:	37	704	0	0	259	13	7	0	48	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	704	0	0	259	13	7	0	48	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:	37	704	0	0	259	13	7	0	48	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	37	704	0	0	259	13	7	0	48	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	272	xxxx	xxxxx	xxxx	xxxx	xxxxx	1044	1044	266	xxxx	xxxx	xxxxx
Potent Cap.:	1303	xxxx	xxxxx	xxxx	xxxx	xxxxx	256	231	778	xxxx	xxxx	xxxxx
Move Cap.:	1303	xxxx	xxxxx	xxxx	xxxx	xxxxx	250	224	778	xxxx	xxxx	xxxxx
Volume/Cap:	0.03	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.03	0.00	0.06	xxxx	xxxx	xxxxx

Level Of Service Module:

2Way95thQ:	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	614	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.4	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			11.4		xxxxxxx			
ApproachLOS:	*			*			B		*			*

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 1.003
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 41.0
Optimal Cycle: 148 Level of Service: D
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 78 316 71 238 597 36 239 790 116 101 1416 81
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: 78 316 71 238 597 36 239 790 116 101 1416 81
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 78 316 71 238 597 36 239 790 116 101 1416 81
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: 78 316 71 238 597 36 239 790 116 101 1416 81
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 78 316 71 238 597 36 239 790 116 101 1416 81
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
FinalVolume: 78 316 71 238 597 36 239 790 116 101 1416 81
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.18 1.00 0.85 0.39 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.74 0.26 1.00 1.89 0.11
Final Sat.: 336 1900 1615 735 1900 1615 1805 3088 453 1805 3387 194
Capacity Analysis Module:
Vol/Sat: 0.23 0.17 0.04 0.32 0.31 0.02 0.13 0.26 0.26 0.06 0.42 0.42
Crit Moves: ****
Green/Cycle: 0.32 0.32 0.32 0.32 0.32 0.32 0.13 0.46 0.46 0.09 0.42 0.42
Volume/Cap: 0.72 0.52 0.14 1.00 0.97 0.07 1.00 0.56 0.56 0.61 1.00 1.00
Delay/Veh: 41.5 20.0 16.9 82.9 53.1 16.5 89.5 14.3 14.3 37.2 44.5 44.5
User DelAdj: 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: 41.5 20.0 16.9 82.9 53.1 16.5 89.5 14.3 14.3 37.2 44.5 44.5
LOS by Move: D C B F D B F B B D D D
HCM2k95thQ: 6 12 2 19 33 1 19 15 15 6 42 42
Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 1.145
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 100.1
Optimal Cycle: 180 Level Of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various adjustment factors like Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.750
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 14.6
Optimal Cycle: 46 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various adjustment factors like Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 1.057
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 39.3
Optimal Cycle: 0 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and growth factors for each approach.

Saturation Flow Module table with 12 columns and 4 rows showing adjustment factors and final saturation values.

Capacity Analysis Module table with 12 columns and 14 rows showing delay, LOS, and approach delay values.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

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, Lanes, and Volume Module.

Volume Module table with 12 columns and 14 rows showing traffic volume and growth factors for each approach.

Critical Gap Module table with 12 columns and 3 rows showing critical gap and follow-up time values.

Capacity Module table with 12 columns and 5 rows showing conflict volume, potential capacity, and move capacity.

Level of Service Module table with 12 columns and 10 rows showing delay, LOS, and approach delay values.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.943
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 84.5
Optimal Cycle: 104 Level Of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.830
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.0
Optimal Cycle: 60 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 0.867
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 22.4
Optimal Cycle: 0 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic flow and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for flow and 4 rows for Adjustment, Lanes, Final Sat., and Final Volume.

Capacity Analysis Module table with 12 columns for flow and 12 rows for Vol/Sat, Crit Moves, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 1.2 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, Lanes.

Volume Module table with 12 columns for traffic flow and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module table with 12 columns for flow and 2 rows for Critical Gap and FollowUpTim.

Capacity Module table with 12 columns for flow and 4 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with 12 columns for flow and 12 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[13.1]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0 0 0 1 0).

Volume Module table with columns: >> Count Date: 29 Mar 2005 <<, Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module table with columns: Critical Gap, FollowUpTim, and values like 4.1, 2.2, 6.4, 3.5.

Capacity Module table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. and values like 131, 1467, 0.03.

Level Of Service Module table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, Approach Del, Approach LOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.517
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.2
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Permitted, Split Phase), Rights (Include), and Lanes (0 0 0 1 0).

Volume Module table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module table with columns: Sat/Lane, Adjustment, Lanes, Final Sat. and values like 1900, 0.98, 0.84, 1564.

Capacity Analysis Module table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.987
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 34.3
Optimal Cycle: 133 Level Of Service: C

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic volumes and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for saturation flow values. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for capacity analysis values. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.667
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.6
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic volumes and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for saturation flow values. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for capacity analysis values. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.029
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 46.7
Optimal Cycle: 155 Level Of Service: D

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C[23.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for Critical Gap and FollowUp Time.

Capacity Module table with 12 columns for Conflict Vol, Potent Cap, Move Cap, and Volume/Cap.

Level of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Shared Cap, Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.981
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 32.9
Optimal Cycle: 128 Level Of Service: C

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Table with 12 columns: Volume Module: >> Count Date: 29 Mar 2005 <<. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with 12 columns: Saturation Flow Module. Rows include Sat/Lane, Adjustment, Lanes, Final Sat.

Table with 12 columns: Capacity Analysis Module. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 21.0 Worst Case Level Of Service: F[546.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Lanes.

Table with 12 columns: Volume Module. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Table with 12 columns: Critical Gap Module. Rows include Critical Gp, FollowUpTim.

Table with 12 columns: Capacity Module. Rows include Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Table with 12 columns: Level Of Service Module. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.963
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 43.4
Optimal Cycle: 120 Level Of Service: D

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 flows and 12 rows of volume and adjustment factors.

Saturation Flow Module table with 12 columns and 5 rows showing saturation flow rates and adjustments.

Capacity Analysis Module table with 12 columns and 10 rows showing capacity, cycle times, and delay factors.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.066
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 51.6
Optimal Cycle: 180 Level Of Service: D

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 flows and 12 rows of volume and adjustment factors.

Saturation Flow Module table with 12 columns and 5 rows showing saturation flow rates and adjustments.

Capacity Analysis Module table with 12 columns and 10 rows showing capacity, cycle times, and delay factors.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.866
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 26.4
Optimal Cycle: 78 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module table with 12 columns for saturation flow and adjustment factors.

Capacity Analysis Module table with 12 columns for capacity, critical moves, and delay factors.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.117
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 64.2
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module table with 12 columns for saturation flow and adjustment factors.

Capacity Analysis Module table with 12 columns for capacity, critical moves, and delay factors.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (south)

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: C[16.1]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 12 columns for volume components and 12 rows for various adjustments like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap components and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 12 columns for capacity components and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 12 columns for LOS components and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.547
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.1
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 65 147 29 66 131 89 153 856 54 58 1033 90
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: 65 147 29 66 131 89 153 856 54 58 1033 90
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 65 147 29 66 131 89 153 856 54 58 1033 90
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: 65 147 29 66 131 89 153 856 54 58 1033 90
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 65 147 29 66 131 89 153 856 54 58 1033 90
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
FinalVolume: 65 147 29 66 131 89 153 856 54 58 1033 90
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.55 1.00 0.85 0.50 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.88 0.12 1.00 1.84 0.16
Final Sat.: 1053 1900 1615 958 1900 1615 1805 3365 212 1805 3281 286
Capacity Analysis Module:
Vol/Sat: 0.06 0.08 0.02 0.07 0.07 0.06 0.08 0.25 0.25 0.03 0.31 0.31
Crit Moves: ****
Green/Cycle: 0.14 0.14 0.14 0.14 0.14 0.14 0.15 0.61 0.61 0.12 0.57 0.57
Volume/Cap: 0.43 0.54 0.13 0.48 0.48 0.39 0.55 0.42 0.42 0.26 0.55 0.55
Delay/Veh: 29.4 30.1 26.4 30.3 29.0 28.3 29.6 7.4 7.4 28.6 9.6 9.6
User DelAdj: 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: 29.4 30.1 26.4 30.3 29.0 28.3 29.6 7.4 7.4 28.6 9.6 9.6
LOS by Move: C C C C C C C A A C A A
HCM2k95thQ: 4 7 1 4 6 4 8 11 11 3 16 16
Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.616
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 20.1
Optimal Cycle: 38 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module table with 12 columns for saturation flow factors.

Capacity Analysis Module table with 12 columns for capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.332
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.7
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module table with 12 columns for saturation flow factors.

Capacity Analysis Module table with 12 columns for capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av
Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B[10.4]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 1 0 0 0 0 0 0 0 0 0 1
Volume Module:
Base Vol: 0 536 83 33 443 0 0 0 0 0 0 0 63
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: 0 536 83 33 443 0 0 0 0 0 0 0 63
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 536 83 33 443 0 0 0 0 0 0 0 63
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: 0 536 83 33 443 0 0 0 0 0 0 0 63
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 536 83 33 443 0 0 0 0 0 0 0 63
Critical Gap Module:
Critical Gap:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 6.2
FollowUpTim:xxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 3.3
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 619 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 310
Potent Cap.: xxxxx xxxxx xxxxxx 971 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 735
Move Cap.: xxxxx xxxxx xxxxxx 971 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 735
Volume/Cap: xxxxx xxxxx xxxxxx 0.03 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.09
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.3
Control Del:xxxxx xxxxx xxxxxx 8.8 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 10.4
LOS by Move: * * * A * * * * * * * * * B
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 8.8 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: * * * A * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx 10.4
ApproachLOS: * * * * * B
Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St
Cycle (sec): 70 Critical Vol./Cap.(X): 0.645
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.4
Optimal Cycle: 42 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: Split Phase Split Phase Split Phase Split Phase
Rights: Include Include Ignore Include
Min. Green: 10 10 0 0 10 10 10 0 0 10 0 0 0 0
Lanes: 0 1 1 0 0 0 0 0 1 0 1 0 0 0 0 0
Volume Module:
Base Vol: 310 588 0 0 496 29 56 0 444 0 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: 310 588 0 0 496 29 56 0 444 0 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 310 588 0 0 496 29 56 0 444 0 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 310 588 0 0 496 29 56 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 310 588 0 0 496 29 56 0 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
FinalVolume: 310 588 0 0 496 29 56 0 0 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.93 1.00 1.00 0.99 0.99 0.95 1.00 1.00 1.00 1.00 1.00
Lanes: 0.69 1.31 0.00 0.00 0.94 0.06 1.00 0.00 1.00 0.00 0.00 0.00
Final Sat.: 1225 2324 0 0 1782 104 1805 0 1900 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.25 0.25 0.00 0.00 0.28 0.28 0.03 0.00 0.00 0.00 0.00 0.00
Crit Moves: ****
Green/Cycle: 0.35 0.35 0.00 0.00 0.38 0.38 0.14 0.00 0.00 0.00 0.00 0.00
Volume/Cap: 0.73 0.73 0.00 0.00 0.73 0.73 0.22 0.00 0.00 0.00 0.00 0.00
Delay/Veh: 22.2 22.2 0.0 0.0 22.3 22.3 27.0 0.0 0.0 0.0 0.0 0.0
User DelAdj: 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: 22.2 22.2 0.0 0.0 22.3 22.3 27.0 0.0 0.0 0.0 0.0 0.0
LOS by Move: C C A A C C C A A A A A
HCM2k95thQ: 19 19 0 0 20 20 3 0 0 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy
Cycle (sec): 70 Critical Vol./Cap.(X): 0.495
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.1
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for each approach.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.239
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for each approach.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.684
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.7
Optimal Cycle: 46 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.447
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.488
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 17.2
Optimal Cycle: 38 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Split Phase, Protected), Rights (Include, Ovl), and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach and movement.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for each approach and movement.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ for each approach and movement.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[14.1]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Stop Sign, Yield Sign, Uncontrolled), Rights (Ignore, Include, Ignore), and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each approach and movement.

Critical Gap Module table showing Critical Gap and FollowUpTim for each approach and movement.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for each approach and movement.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS for each approach and movement.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.483
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 6.3
Optimal Cycle: 32 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West), Movement (L, T, R), Control (Split Phase, Protected), Rights (Include), and Lanes.

Volume Module table with 12 columns for traffic flows and 12 rows for metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for lanes and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for lanes and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 8.8 Worst Case Level Of Service: F[153.2]

Table with 4 columns: Approach (North, South, East, West), Movement (L, T, R), Control (Stop Sign, Uncontrolled), Rights (Include), and Lanes.

Volume Module table with 12 columns for traffic flows and 12 rows for metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module table with 12 columns for lanes and 2 rows for Critical Gap and FollowUpTim.

Capacity Module table with 12 columns for lanes and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for lanes and 10 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.822
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 29.3
Optimal Cycle: 74 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.068
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 54.8
Optimal Cycle: 180 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd
Cycle (sec): 75 Critical Vol./Cap.(X): 0.825
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.5
Optimal Cycle: 68 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 10 rows of volume and adjustment factors.

Saturation Flow Module table with 12 columns and 5 rows showing saturation flow rates and adjustments.

Capacity Analysis Module table with 12 columns and 10 rows showing capacity analysis metrics like Vol/Sat, Crit Moves, and Green/Cycle.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.991
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 45.9
Optimal Cycle: 136 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 10 rows of volume and adjustment factors.

Saturation Flow Module table with 12 columns and 5 rows showing saturation flow rates and adjustments.

Capacity Analysis Module table with 12 columns and 10 rows showing capacity analysis metrics like Vol/Sat, Crit Moves, and Green/Cycle.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
No Project Alternative
Cumulative Saturday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (south)

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: B[11.2]

Table with columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0, 1, 0, 0, 0)

Volume Module: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume

Critical Gap Module: Critical Gp, FollowUpTim

Capacity Module: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level Of Service Module: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.630
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 116 318 39 77 210 138 123 973 63 145 951 98
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: 116 318 39 77 210 138 123 973 63 145 951 98
Added Vol: 13 10 5 0 9 0 0 0 12 4 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 129 328 44 77 219 138 123 973 75 149 951 98
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: 129 328 44 77 219 138 123 973 75 149 951 98
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 129 328 44 77 219 138 123 973 75 149 951 98
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
FinalVolume: 129 328 44 77 219 138 123 973 75 149 951 98
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.49 1.00 0.85 0.32 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.86 0.14 1.00 1.81 0.19
Final Sat.: 922 1900 1615 600 1900 1615 1805 3315 256 1805 3227 333
Capacity Analysis Module:
Vol/Sat: 0.14 0.17 0.03 0.13 0.12 0.09 0.07 0.29 0.29 0.08 0.29 0.29
Crit Moves: **** ****
Green/Cycle: 0.27 0.27 0.27 0.27 0.27 0.27 0.11 0.47 0.47 0.13 0.49 0.49
Volume/Cap: 0.51 0.63 0.10 0.47 0.42 0.31 0.61 0.63 0.63 0.63 0.61 0.61
Delay/Veh: 23.2 24.8 19.1 23.2 21.4 20.6 34.8 14.9 14.9 34.2 13.8 13.8
User DelAdj: 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: 23.2 24.8 19.1 23.2 21.4 20.6 34.8 14.9 14.9 34.2 13.8 13.8
LOS by Move: C C B C C C C B B C B B
HCM2kAvgQ: 3 7 1 2 4 3 4 10 10 4 9 9
Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.559
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.7
Optimal Cycle: 36 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.627
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 34 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 1.155
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 67.8
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 15 rows showing traffic volume and growth factors.

Saturation Flow Module table with 12 columns and 4 rows showing adjustment factors.

Capacity Analysis Module table with 12 columns and 15 rows showing delay and LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.4 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, Lanes.

Volume Module table with 12 columns and 15 rows showing traffic volume and growth factors.

Critical Gap Module table with 12 columns and 3 rows showing gap and follow-up times.

Capacity Module table with 12 columns and 5 rows showing conflict volume and capacity.

Level of Service Module table with 12 columns and 10 rows showing delay and LOS by approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.911
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 63.8
Optimal Cycle: 90 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 10 columns for volume and 10 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 10 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 10 columns for Vol/Sat and 10 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.962
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 21.0
Optimal Cycle: 120 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 10 columns for volume and 10 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 10 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 10 columns for Vol/Sat and 10 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 1.067
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 52.0
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns for flow directions and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for flow directions and 4 rows for Adjustment, Lanes, Final Sat., and Final Volume.

Capacity Analysis Module table with 12 columns for flow directions and 12 rows for Vol/Sat, Crit Moves, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: C[18.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module table with 12 columns for flow directions and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module table with 12 columns for flow directions and 3 rows for Critical Gap, FollowUpTim, and Volume/Cap.

Capacity Module table with 12 columns for flow directions and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for flow directions and 12 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative AM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy
Average Delay (sec/veh): 2.9 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: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 613 13 53 144 0 0 0 0 6 0 68
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: 0 613 13 53 144 0 0 0 0 6 0 68
Added Vol: 1 0 0 0 0 0 0 38 0 0 19 0
Diverted Tr: -427 0 0 0 0 0 0 0 -130 -5 5 0
Initial Fut: -426 613 13 53 144 0 0 38 -130 1 24 68
User Adj: 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 0 613 13 53 144 0 0 38 0 1 24 68
Reduct Vol: 0 0 0 0 0 0 0 0 0 5 0 0
FinalVolume: 0 613 13 53 144 0 0 38 0 0 24 68
Critical Gap Module:
Critical Gap:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx 6.5 6.2 7.1 6.5 6.2
FollowUpTim:xxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 626 xxxxx xxxxxx xxxxx 876 144 889 870 620
Potent Cap.: xxxxx xxxxx xxxxxx 965 xxxxx xxxxxx xxxxx 290 909 266 292 492
Move Cap.: xxxxx xxxxx xxxxxx 965 xxxxx xxxxxx xxxxx 273 909 228 276 492
Volume/Cap: xxxxx xxxxx xxxxxx 0.05 xxxxx xxxxxx xxxxx 0.14 0.00 0.00 0.09 0.14
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxx xxxxx xxxxxx 8.9 xxxxx xxxxxx xxxxxx 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 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 273 xxxxx 408 xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxxx xxxxx 0.5 xxxxxx 0.9 xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 8.9 xxxxx xxxxxx xxxxxx xxxxx 20.3 xxxxxx 16.4 xxxxxx
Shared LOS: * * * A * * * * * C * C *
ApproachDel: xxxxxx xxxxxx 20.3 xxxxxx 16.4
ApproachLOS: * * C C
Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.558
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.0
Optimal Cycle: 28 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 10 0 0 10 0 0 0 0 0 4 0 10
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 637 163 25 229 0 0 0 0 43 0 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: 0 637 163 25 229 0 0 0 0 43 0 29
Added Vol: 0 33 0 0 33 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 670 163 25 262 0 0 0 0 43 0 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: 0 670 163 25 262 0 0 0 0 43 0 29
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 670 163 25 262 0 0 0 0 43 0 29
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
FinalVolume: 0 670 163 25 262 0 0 0 0 43 0 29
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.97 0.97 0.93 0.93 1.00 1.00 1.00 1.00 0.92 1.00 0.92
Lanes: 0.00 0.80 0.20 0.09 0.91 0.00 0.00 0.00 0.00 0.60 0.00 0.40
Final Sat.: 0 1488 362 153 1604 0 0 0 0 1042 0 703
Capacity Analysis Module:
Vol/Sat: 0.00 0.45 0.45 0.16 0.16 0.00 0.00 0.00 0.00 0.04 0.00 0.04
Crit Moves: ****
Green/Cycle: 0.00 0.68 0.68 0.68 0.68 0.00 0.00 0.00 0.00 0.20 0.00 0.20
Volume/Cap: 0.00 0.66 0.66 0.24 0.24 0.00 0.00 0.00 0.00 0.21 0.00 0.21
Delay/Veh: 0.0 6.0 6.0 3.2 3.2 0.0 0.0 0.0 0.0 17.0 0.0 17.0
User DelAdj: 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 6.0 6.0 3.2 3.2 0.0 0.0 0.0 0.0 17.0 0.0 17.0
LOS by Move: A A A A A A A A A B A B
HCM2kAvgQ: 0 9 9 2 2 0 0 0 0 1 0 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: A[9.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 3 columns for gap values and 3 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 3 columns for capacity values and 5 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS values and 7 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 2.6 Worst Case Level Of Service: A[9.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with 12 columns for traffic volumes and 12 rows for various adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 3 columns for gap values and 3 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 3 columns for capacity values and 5 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS values and 7 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.113
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 68.8
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial volume adjustments.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.604
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.7
Optimal Cycle: 44 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial volume adjustments.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.177
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 82.6
Optimal Cycle: 180 Level Of Service: F

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Includes Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Grid of traffic volume data for various movements.

Saturation Flow Module: Grid of saturation flow data for different lane configurations.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.828
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.6
Optimal Cycle: 67 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Includes Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements. Grid of traffic volume data for various movements.

Saturation Flow Module: Grid of saturation flow data for different lane configurations.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: F[184.1]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement (L-T-R), Control (Stop Sign, Uncontrolled), Rights (Include), Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns for gap metrics and 2 rows: Critical Gp, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics and 5 rows: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 7 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: E[40.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement (L-T-R), Control (Stop Sign, Uncontrolled), Rights (Include), Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns for gap metrics and 2 rows: Critical Gp, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics and 5 rows: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 7 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.023
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 57.3
Optimal Cycle: 162 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.839
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 26.0
Optimal Cycle: 71 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd
Cycle (sec): 75 Critical Vol./Cap.(X): 0.861
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.4
Optimal Cycle: 77 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 384 2 130 0 0 0 589 1035 0 0 565 426
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

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.88 0.88 0.85 1.00 1.00 1.00 0.95 0.95 1.00 1.00 0.95 0.85

Capacity Analysis Module:
Vol/Sat: 0.13 0.13 0.08 0.00 0.00 0.00 0.36 0.29 0.00 0.00 0.16 0.26
Crit Moves: ****
Green/Cycle: 0.15 0.15 0.15 0.00 0.00 0.00 0.42 0.73 0.00 0.00 0.31 0.31

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 1.009
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 48.2
Optimal Cycle: 154 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:
Base Vol: 504 1996 0 0 604 244 524 0 169 0 3 36
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

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.95 1.00 1.00 0.95 0.85 0.95 1.00 0.85 1.00 0.88 0.88

Capacity Analysis Module:
Vol/Sat: 0.28 0.56 0.00 0.00 0.18 0.15 0.29 0.00 0.10 0.00 0.02 0.02
Crit Moves: ****
Green/Cycle: 0.33 0.53 0.00 0.00 0.21 0.21 0.28 0.00 0.28 0.00 0.06 0.06

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative AM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.497
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.7
Optimal Cycle: 26 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0
Volume Module:
Base Vol: 0 427 0 24 130 0 0 0 0 5 0 226
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: 0 427 0 24 130 0 0 0 0 5 0 226
Added Vol: 1 58 13 2 81 1 9 22 5 12 5 12
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 1 485 13 26 211 1 9 22 5 17 5 238
User Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
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: 1 524 14 28 228 1 10 24 5 18 5 257
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 1 524 14 28 228 1 10 24 5 18 5 257
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
FinalVolume: 1 524 14 28 228 1 10 24 5 18 5 257
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.60 1.00 0.85 0.36 1.00 0.85 0.49 0.97 0.97 0.74 0.85 0.85
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.81 0.19 1.00 0.02 0.98
Final Sat.: 1148 1900 1615 688 1900 1615 933 1505 342 1414 33 1587
Capacity Analysis Module:
Vol/Sat: 0.00 0.28 0.01 0.04 0.12 0.00 0.01 0.02 0.02 0.01 0.16 0.16
Crit Moves: ****
Green/Cycle: 0.55 0.55 0.55 0.55 0.55 0.55 0.33 0.33 0.33 0.33 0.33 0.33
Volume/Cap: 0.00 0.50 0.02 0.07 0.22 0.00 0.03 0.05 0.05 0.04 0.50 0.50
Delay/Veh: 5.0 7.2 5.0 5.3 5.7 5.0 11.5 11.6 11.6 11.6 14.3 14.3
User DelAdj: 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: 5.0 7.2 5.0 5.3 5.7 5.0 11.5 11.6 11.6 11.6 14.3 14.3
LOS by Move: A A A A A B B B B B B
HCM2kAvgQ: 0 5 0 0 2 0 0 0 0 0 4 4
Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative AM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.7]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 1 0 0 0 1 0 0 0
Volume Module:
Base Vol: 0 427 0 0 135 0 0 0 0 0 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: 0 427 0 0 135 0 0 0 0 0 0 0 0
Added Vol: 3 66 0 0 98 1 6 0 10 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 3 493 0 0 233 1 6 0 10 0 0 0 0
User Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
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: 3 532 0 0 252 1 6 0 11 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 3 532 0 0 252 1 6 0 11 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 xxxx 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 xxxx 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 253 xxxx xxxxx xxxx xxxx xxxxx 791 xxxx 252 797 792 532
Potent Cap.: 1324 xxxx xxxxx xxxx xxxx xxxxx 361 xxxx 791 307 324 551
Move Cap.: 1324 xxxx xxxxx xxxx xxxx xxxxx 361 xxxx 791 302 323 551
Volume/Cap: 0.00 xxxx xxxxx xxxx xxxx xxxxx 0.02 xxxx 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx 0.1 xxxx 0.0 xxxx xxxx xxxxx
Control Del: 7.7 xxxx xxxxx xxxxx xxxx xxxxx 15.2 xxxx 9.6 xxxxx xxxx xxxxx
LOS by Move: A * * * * C * A * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: A * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 11.7 xxxxxx
ApproachLOS: * * B *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: C[24.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns and 12 rows showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Critical Gap Module:

Table with 4 columns and 2 rows showing Critical Gap and FollowUpTim values.

Capacity Module:

Table with 12 columns and 4 rows showing capacity data including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns and 10 rows showing level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level Of Service Computation Report

FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 5.2 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns and 12 rows showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

PCE Module:

Table with 12 columns and 4 rows showing PCE data including AutoPCE, TruckPCE, ComboPCE, BicyclePCE, and AdjVolume.

Delay Module: >> Time Period: 0.25 hours <<

Table with 4 columns and 6 rows showing delay data including CircVolume, MaxVolume, PedVolume, AdjMaxVol, ApproachVol, ApproachDel, and Queue.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.403
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.1
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for movements and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for movements and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[23.5]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for movements and 3 rows for Critical Gp, FollowUpTim, and Capacity Module.

Capacity Module table with 12 columns for movements and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with 12 columns for movements and 8 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 FranklinBl/5th Av (South)

Average Delay (sec/veh): 1.0 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:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module:

Base Vol:	37	704	0	0	259	13	7	0	48	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:	37	704	0	0	259	13	7	0	48	0	0	0
Added Vol:	0	22	0	0	15	18	10	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	726	0	0	274	31	17	0	48	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:	37	726	0	0	274	31	17	0	48	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	37	726	0	0	274	31	17	0	48	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	305	xxxx	xxxxx	xxxx	xxxx	xxxxx	1090	1090	290	xxxx	xxxx	xxxxx
Potent Cap.:	1267	xxxx	xxxxx	xxxx	xxxx	xxxxx	240	217	754	xxxx	xxxx	xxxxx
Move Cap.:	1267	xxxx	xxxxx	xxxx	xxxx	xxxxx	235	211	754	xxxx	xxxx	xxxxx
Volume/Cap:	0.03	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.07	0.00	0.06	xxxx	xxxx	xxxxx

Level Of Service Module:

2Way95thQ:	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	478	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.5	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	13.7	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			13.7		xxxxxx			
ApproachLOS:	*			*			B		*			*

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 1.006
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 44.2
Optimal Cycle: 150 Level of Service: D
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 78 316 71 238 597 36 239 790 116 101 1416 81
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: 78 316 71 238 597 36 239 790 116 101 1416 81
Added Vol: 23 17 8 0 22 0 0 0 30 10 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 101 333 79 238 619 36 239 790 146 111 1416 81
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: 101 333 79 238 619 36 239 790 146 111 1416 81
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 101 333 79 238 619 36 239 790 146 111 1416 81
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
FinalVolume: 101 333 79 238 619 36 239 790 146 111 1416 81
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.17 1.00 0.85 0.38 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.69 0.31 1.00 1.89 0.11
Final Sat.: 325 1900 1615 714 1900 1615 1805 2977 550 1805 3387 194
Capacity Analysis Module:
Vol/Sat: 0.31 0.18 0.05 0.33 0.33 0.02 0.13 0.27 0.27 0.06 0.42 0.42
Crit Moves: ****
Green/Cycle: 0.32 0.32 0.32 0.32 0.32 0.32 0.13 0.45 0.45 0.10 0.42 0.42
Volume/Cap: 0.96 0.54 0.15 1.03 1.01 0.07 1.01 0.59 0.59 0.63 1.01 1.01
Delay/Veh: 97.7 20.4 17.0 90.3 61.3 16.4 90.2 15.0 15.0 37.8 45.1 45.1
User DelAdj: 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: 97.7 20.4 17.0 90.3 61.3 16.4 90.2 15.0 15.0 37.8 45.1 45.1
LOS by Move: F C B F E B F B B D D D
HCM2k95thQ: 10 12 3 19 35 1 19 16 16 7 42 42
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 1.027
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 48.7
Optimal Cycle: 177 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.778
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 15.3
Optimal Cycle: 50 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 1.224
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 63.8
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Volume Module.

Table with 12 columns for traffic flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module table with 12 columns for flow and 4 rows for Adjustment, Lanes, Final Sat., and Capacity Analysis Module.

Capacity Analysis Module table with 12 columns for flow and 14 rows for Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[10.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Critical Gap Module table with 12 columns for flow and 2 rows for Critical Gap and FollowUpTim.

Capacity Module table with 12 columns for flow and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for flow and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.980
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 86.1
Optimal Cycle: 128 Level Of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.840
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.9
Optimal Cycle: 62 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 1.117
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 61.4
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic flow metrics and 12 rows for various volume and delay calculations.

Saturation Flow Module table with 12 columns and 5 rows for adjustment factors and saturation flow values.

Capacity Analysis Module table with 12 columns and 15 rows for delay, LOS, and approach delay calculations.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: C[21.3]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module table with 12 columns for traffic flow metrics and 12 rows for various volume and delay calculations.

Critical Gap Module table with 12 columns and 2 rows for gap and follow-up time metrics.

Capacity Module table with 12 columns and 4 rows for conflict volume, capacity, and volume/capacity metrics.

Level of Service Module table with 12 columns and 10 rows for delay, LOS, and approach delay calculations.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: C[18.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0 0 1 0 0).

Volume Module table with columns: >> Count Date: 29 Mar 2005 <<, Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module table with columns: Critical Gap, FollowUpTim, and various delay values.

Capacity Module table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap., and various capacity values.

Level Of Service Module table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.567
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.3
Optimal Cycle: 29 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Permitted, Split Phase), Rights (Include), and Lanes (0 0 0 1 0).

Volume Module table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module table with columns: Sat/Lane, Adjustment, Lanes, Final Sat., and various saturation flow values.

Capacity Analysis Module table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 3.9 Worst Case Level Of Service: A[8.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0)

Volume Module: >> Count Date: 1 Sep 1997 <<. Table with 11 columns for volume counts and 11 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 3 columns for gap values (4.1, 6.4, 6.5, 6.2) and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 3 columns for capacity values (27, 146, 146, 26) and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module: Table with 3 columns for LOS values (0.1, 7.3, A) and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 5.2 Worst Case Level Of Service: A[8.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0)

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 11 columns for volume counts and 11 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 3 columns for gap values (4.1, 6.4, 6.5, 6.2) and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 3 columns for capacity values (25, 1603, 1603, 206) and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module: Table with 3 columns for LOS values (0.1, 7.4, A) and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.015
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 38.8
Optimal Cycle: 161 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.705
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.3
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.137
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 67.7
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Split Phase and Protected.

Volume Module table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.922
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 42.4
Optimal Cycle: 95 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Split Phase and Protected.

Volume Module:except thru movements table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: F[111.3]

Table with 5 columns: Approach, Movement, Control, Rights, Lanes. Rows include North Bound, South Bound, East Bound, West Bound movements and their respective controls and lane counts.

Volume Module table with columns: >> Count Date: 29 Mar 2005 <<. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 2 rows: Critical Gp, FollowUpTim. Columns include gap values and timing parameters.

Capacity Module:

Table with 2 rows: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Columns include volume and capacity values.

Level Of Service Module:

Table with 2 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS. Columns include LOS values and timing parameters.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 54.6 Worst Case Level Of Service: F[1726.1]

Table with 5 columns: Approach, Movement, Control, Rights, Lanes. Rows include North Bound, South Bound, East Bound, West Bound movements and their respective controls and lane counts.

Volume Module table with columns: >> Count Date: 29 Mar 2005 <<. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 2 rows: Critical Gp, FollowUpTim. Columns include gap values and timing parameters.

Capacity Module:

Table with 2 rows: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Columns include volume and capacity values.

Level Of Service Module:

Table with 2 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS. Columns include LOS values and timing parameters.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.077
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 75.4
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 10 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and 10 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.961
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 30.8
Optimal Cycle: 121 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 10 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and 10 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.948
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 37.2
Optimal Cycle: 112 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.140
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 69.1
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative PM Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.537
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.7
Optimal Cycle: 27 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 0 106 0 154 537 0 0 0 0 18 0 14
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: 0 106 0 154 537 0 0 0 0 18 0 14
Added Vol: 4 164 22 4 196 3 2 9 1 30 15 3
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 4 270 22 158 733 3 2 9 1 48 15 17
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 5 316 26 185 858 4 2 11 1 56 18 20
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 5 316 26 185 858 4 2 11 1 56 18 20
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
FinalVolume: 5 316 26 185 858 4 2 11 1 56 18 20
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.22 1.00 0.85 0.56 1.00 0.85 0.74 0.99 0.99 0.76 0.92 0.92
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.90 0.10 1.00 0.47 0.53
Final Sat.: 426 1900 1615 1058 1900 1615 1402 1684 187 1442 819 929
Capacity Analysis Module:
Vol/Sat: 0.01 0.17 0.02 0.17 0.45 0.00 0.00 0.01 0.01 0.04 0.02 0.02
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.02 0.24 0.02 0.26 0.66 0.00 0.01 0.03 0.03 0.19 0.11 0.11
Delay/Veh: 2.6 3.2 2.6 3.3 6.0 2.6 16.0 16.1 16.1 17.0 16.5 16.5
User DelAdj: 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: 2.6 3.2 2.6 3.3 6.0 2.6 16.0 16.1 16.1 17.0 16.5 16.5
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 4 0 3 17 0 0 0 0 2 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative PM Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.1 Worst Case Level Of Service: C[18.1]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 106 0 0 555 0 0 0 0 0 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: 0 106 0 0 555 0 0 0 0 0 0 0 0
Added Vol: 8 189 0 0 224 3 1 0 3 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 295 0 0 779 3 1 0 3 0 0 0 0
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 9 345 0 0 911 4 1 0 4 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 345 0 0 911 4 1 0 4 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 xxxx 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 xxxx 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 915 xxxx xxxxx xxxxx xxxxx xxxxx 1277 xxxx 913 1279 1279 345
Potent Cap.: 754 xxxx xxxxx xxxxx xxxx xxxxx 185 xxxx 334 144 168 702
Move Cap.: 754 xxxx xxxxx xxxxx xxxx xxxxx 184 xxxx 334 141 165 702
Volume/Cap: 0.01 xxxx xxxxx xxxxx xxxxx xxxxx 0.01 xxxx 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxxx xxxxx xxxxx 0.0 xxxx 0.0 xxxx xxxx xxxxx
Control Del: 9.8 xxxx xxxxx xxxxx xxxx xxxxx 24.7 xxxx 15.9 xxxxx xxxx xxxxx
LOS by Move: A * * * * C * C * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 9.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: A * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 18.1 xxxxxx
ApproachLOS: * * C *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 18.5 Worst Case Level Of Service: F[110.9]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0, 1, 0, 0).

Volume Module:

Table with 12 columns for traffic volume and delay metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 4 columns for Critical Gap, FollowUpTim, and other metrics.

Capacity Module:

Table with 8 columns for Capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for Level Of Service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level Of Service Computation Report

FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 11.6 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Yield Sign), Rights (Include), Lanes (1).

Volume Module:

Table with 12 columns for traffic volume and delay metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

PCE Module:

Table with 12 columns for PCE metrics: AutoPCE, TruckPCE, ComboPCE, BicyclePCE, AdjVolume.

Delay Module: >> Time Period: 0.25 hours <<

Table with 4 columns for Delay metrics: CircVolume, MaxVolume, PedVolume, AdjMaxVol, ApproachVol, ApproachDel, Queue.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 1.413
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 62.4
Optimal Cycle: 180 Level Of Service: E

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 4 10 0 0 4 10 10 0 10 0 0 0
Lanes: 1 0 1 0 0 0 0 1 0 1 0 0 1 0 0 0 0 0 0 0

Volume Module:
Base Vol: 10 129 0 0 587 0 0 0 13 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: 10 129 0 0 587 0 0 0 13 0 0 0
Added Vol: 255 296 0 0 219 34 52 0 82 0 0 0
PasserByVol: 141 32 0 0 32 0 0 0 47 0 0 0
Initial Fut: 406 457 0 0 838 34 52 0 142 0 0 0
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 475 535 0 0 980 40 61 0 166 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 475 535 0 0 980 40 61 0 166 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
FinalVolume: 475 535 0 0 980 40 61 0 166 0 0 0

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.22 1.00 1.00 1.00 1.00 0.85 0.89 1.00 0.89 1.00 1.00 1.00
Lanes: 1.00 1.00 0.00 0.00 1.00 1.00 0.27 0.00 0.73 0.00 0.00 0.00
Final Sat.: 410 1900 0 0 1900 1615 453 0 1237 0 0 0

Capacity Analysis Module:
Vol/Sat: 1.16 0.28 0.00 0.00 0.52 0.02 0.13 0.00 0.13 0.00 0.00 0.00
Crit Moves: ****
Green/Cycle: 0.77 0.77 0.00 0.00 0.77 0.77 0.14 0.00 0.14 0.00 0.00 0.00
Volume/Cap: 1.50 0.36 0.00 0.00 0.67 0.03 0.94 0.00 0.94 0.00 0.00 0.00
Delay/Veh: 249.1 2.7 0.0 0.0 5.0 1.9 71.4 0.0 71.4 0.0 0.0 0.0
User DelAdj: 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: 249.1 2.7 0.0 0.0 5.0 1.9 71.4 0.0 71.4 0.0 0.0 0.0
LOS by Move: F A A A A A E A E A A A
HCM2k95thQ: 51 8 0 0 20 0 17 0 17 0 0 0

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 14.4 Worst Case Level Of Service: F[170.4]

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 0 1 0 0 0 0 1! 0 0 1 0 0 0 0

Volume Module:
Base Vol: 0 129 0 0 587 0 0 0 0 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: 0 129 0 0 587 0 0 0 0 0 0 0
Added Vol: 28 286 35 0 192 87 56 0 27 33 0 0
PasserByVol: 16 0 16 0 0 0 0 0 16 16 0 0
Initial Fut: 44 415 51 0 779 87 56 0 43 49 0 0
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 51 486 60 0 911 102 66 0 50 57 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 51 486 60 0 911 102 66 0 50 57 0 0

Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 7.1 6.5 6.2 7.1 xxxx xxxxx
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 xxxx xxxxx

Capacity Module:
Cnflct Vol: 1013 xxxxx xxxxx xxxxx xxxxx xxxxx 1581 1611 962 1606 xxxxx xxxxx
Potent Cap.: 692 xxxxx xxxxx xxxxx xxxxx xxxxx 89 106 313 86 xxxxx xxxxx
Move Cap.: 692 xxxxx xxxxx xxxxx xxxxx xxxxx 84 97 313 68 xxxxx xxxxx
Volume/Cap: 0.07 xxxxx xxxxx xxxxx xxxxx xxxxx 0.78 0.00 0.16 0.85 xxxxx xxxxx

Level Of Service Module:
2Way95thQ: 0.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 4.0 xxxxx xxxxx
Control Del: 10.6 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 170.4 xxxxx xxxxx
LOS by Move: B * * * * * F * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 123 xxxxx xxxxx xxxxx
SharedQueue: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 6.2 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 133 xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * * * F * * *
ApproachDel: xxxxxxx xxxxxxx 133.2 170.4
ApproachLOS: * * F F

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 FranklinBl/5th Av (South)

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: D[30.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module:

Base Vol:	51	432	0	0	699	25	6	0	55	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:	51	432	0	0	699	25	6	0	55	0	0	0
Added Vol:	0	24	0	0	37	43	40	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	456	0	0	736	68	46	0	55	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:	51	456	0	0	736	68	46	0	55	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	51	456	0	0	736	68	46	0	55	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	804	xxxx	xxxxx	xxxx	xxxx	xxxxx	1328	1328	770	xxxx	xxxx	xxxxx
Potent Cap.:	829	xxxx	xxxxx	xxxx	xxxx	xxxxx	173	157	404	xxxx	xxxx	xxxxx
Move Cap.:	829	xxxx	xxxxx	xxxx	xxxx	xxxxx	164	147	404	xxxx	xxxx	xxxxx
Volume/Cap:	0.06	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.28	0.00	0.14	xxxx	xxxx	xxxxx

Level Of Service Module:

2Way95thQ:	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	243	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.9	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	9.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	30.0	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	D	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			30.0		xxxxxxx			
ApproachLOS:	*			*			D		*			*

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Proposed Project
Cumulative Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.559
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.0
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 65 147 29 66 131 89 153 856 54 58 1033 90
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: 65 147 29 66 131 89 153 856 54 58 1033 90
Added Vol: 26 19 9 0 24 0 0 0 33 11 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 91 166 38 66 155 89 153 856 87 69 1033 90
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: 91 166 38 66 155 89 153 856 87 69 1033 90
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 91 166 38 66 155 89 153 856 87 69 1033 90
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
FinalVolume: 91 166 38 66 155 89 153 856 87 69 1033 90
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.50 1.00 0.85 0.47 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.82 0.18 1.00 1.84 0.16
Final Sat.: 950 1900 1615 891 1900 1615 1805 3231 328 1805 3281 286
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.10 0.09 0.02 0.07 0.08 0.06 0.08 0.26 0.26 0.04 0.31 0.31
Crit Moves: **** **
Green/Cycle: 0.16 0.16 0.16 0.16 0.16 0.16 0.15 0.60 0.60 0.12 0.56 0.56
Volume/Cap: 0.61 0.56 0.15 0.47 0.52 0.35 0.56 0.44 0.44 0.32 0.56 0.56
Delay/Veh: 34.9 29.7 25.8 29.4 28.8 27.2 30.1 7.9 7.9 29.1 10.1 10.1
User DelAdj: 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: 34.9 29.7 25.8 29.4 28.8 27.2 30.1 7.9 7.9 29.1 10.1 10.1
LOS by Move: C C C C C C C A A C B B
HCM2k95thQ: 6 8 2 4 8 4 8 12 12 3 16 16

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.529
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.1
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across four approaches.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.393
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.5
Optimal Cycle: 26 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across four approaches.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av
Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[10.9]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 1 0 0 0 0 0 0 0 0 0 1
Volume Module:
Base Vol: 0 536 83 33 443 0 0 0 0 0 0 0 63
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: 0 536 83 33 443 0 0 0 0 0 0 0 63
Added Vol: 0 0 69 50 5 0 0 0 0 0 0 0 27
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 536 152 83 448 0 0 0 0 0 0 0 90
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: 0 536 152 83 448 0 0 0 0 0 0 0 90
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 536 152 83 448 0 0 0 0 0 0 0 90
Critical Gap Module:
Critical Gap:xxxxx xxxxx xxxxx 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 6.2
FollowUpTim:xxxxx xxxxx xxxxx 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 3.3
Capacity Module:
Conflict Vol: xxxxx xxxxx xxxxx 688 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 344
Potent Cap.: xxxxx xxxxx xxxxx 916 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 703
Move Cap.: xxxxx xxxxx xxxxx 916 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 703
Volume/Cap: xxxxx xxxxx xxxxx 0.09 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.13
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx 0.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.4
Control Del:xxxxx xxxxx xxxxx 9.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 10.9
LOS by Move: * * * A * * * * * * * * * * B
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx
SharedQueue:xxxxxx xxxxx xxxxx 0.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel:xxxxxx xxxxx xxxxx 9.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * A * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx 10.9
ApproachLOS: * * * * * B
Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St
Cycle (sec): 70 Critical Vol./Cap.(X): 0.687
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.0
Optimal Cycle: 46 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: Split Phase Split Phase Split Phase Split Phase
Rights: Include Include Ignore Include
Min. Green: 10 10 0 0 10 10 10 0 0 10 0 0 0 0
Lanes: 0 1 1 0 0 0 0 0 1 0 1 0 0 0 0 0 0
Volume Module:
Base Vol: 310 588 0 0 496 29 56 0 444 0 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: 310 588 0 0 496 29 56 0 444 0 0 0 0
Added Vol: 0 16 0 0 5 0 53 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 310 604 0 0 501 29 109 0 444 0 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 310 604 0 0 501 29 109 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 310 604 0 0 501 29 109 0 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
FinalVolume: 310 604 0 0 501 29 109 0 0 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.93 1.00 1.00 0.99 0.99 0.95 1.00 1.00 1.00 1.00 1.00
Lanes: 0.68 1.32 0.00 0.00 0.95 0.05 1.00 0.00 1.00 0.00 0.00 0.00
Final Sat.: 1204 2345 0 0 1783 103 1805 0 1900 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.26 0.26 0.00 0.00 0.28 0.28 0.06 0.00 0.00 0.00 0.00 0.00
Crit Moves: **** *
Green/Cycle: 0.35 0.35 0.00 0.00 0.38 0.38 0.14 0.00 0.00 0.00 0.00 0.00
Volume/Cap: 0.74 0.74 0.00 0.00 0.74 0.74 0.42 0.00 0.00 0.00 0.00 0.00
Delay/Veh: 22.4 22.4 0.0 0.0 22.8 22.8 28.5 0.0 0.0 0.0 0.0 0.0
User DelAdj: 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: 22.4 22.4 0.0 0.0 22.8 22.8 28.5 0.0 0.0 0.0 0.0 0.0
LOS by Move: C C A A C C C A A A A A
HCM2k95thQ: 20 20 0 0 21 21 5 0 0 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy
Cycle (sec): 70 Critical Vol./Cap.(X): 0.515
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.5
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing traffic volume and delay metrics for each approach and movement.

Saturation Flow Module table showing saturation flow rates and adjustment factors.

Capacity Analysis Module table showing capacity, cycle time, and delay per vehicle.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.289
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.7
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing traffic volume and delay metrics for each approach and movement.

Saturation Flow Module table showing saturation flow rates and adjustment factors.

Capacity Analysis Module table showing capacity, cycle time, and delay per vehicle.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.714
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.5
Optimal Cycle: 49 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.476
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.618
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 47 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors (Growth, Initial, Added, Passer, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.851
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 31.2
Optimal Cycle: 72 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors (Growth, Initial, Added, Passer, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: E[47.9]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Stop Sign, Uncontrolled), and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with columns for Critical Gp, FollowUpTim, and various delay values.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 34.2 Worst Case Level Of Service: F[802.1]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Stop Sign, Uncontrolled), and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with columns for Critical Gp, FollowUpTim, and various delay values.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd
Cycle (sec): 75 Critical Vol./Cap.(X): 0.940
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 36.9
Optimal Cycle: 108 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd
Cycle (sec): 75 Critical Vol./Cap.(X): 0.995
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 38.0
Optimal Cycle: 150 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd
Cycle (sec): 75 Critical Vol./Cap.(X): 0.987
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 38.7
Optimal Cycle: 141 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic volume and 12 columns for saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 1.015
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 48.4
Optimal Cycle: 162 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic volume and 12 columns for saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.226
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.5
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0 0
Volume Module:
Base Vol: 0 82 0 0 93 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 82 0 0 93 0 0 0 0 0 0 0 0 0 0
Added Vol: 3 178 23 3 224 2 4 14 2 31 13 6
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 3 260 23 3 317 2 4 14 2 31 13 6
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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
PHF Volume: 3 291 26 3 355 2 4 16 2 35 15 7
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 3 291 26 3 355 2 4 16 2 35 15 7
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 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 1.00 1.00
FinalVolume: 3 291 26 3 355 2 4 16 2 35 15 7
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.53 1.00 0.85 0.57 1.00 0.85 0.75 0.98 0.98 0.75 0.95 0.95
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.87 0.13 1.00 0.68 0.32
Final Sat.: 1009 1900 1615 1091 1900 1615 1427 1631 233 1433 1239 572
Capacity Analysis Module:
Vol/Sat: 0.00 0.15 0.02 0.00 0.19 0.00 0.00 0.01 0.01 0.02 0.01 0.01
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.00 0.23 0.02 0.00 0.27 0.00 0.02 0.05 0.05 0.12 0.06 0.06
Delay/Veh: 2.6 3.1 2.6 2.6 3.3 2.6 16.1 16.2 16.2 16.6 16.3 16.3
User DelAdj: 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
AdjDel/Veh: 2.6 3.1 2.6 2.6 3.3 2.6 16.1 16.2 16.2 16.6 16.3 16.3
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 4 0 0 5 0 0 1 1 1 1 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[12.0]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 1 0 0 0 0 1 0 0 0 0 0
Volume Module:
Base Vol: 0 82 0 0 93 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 82 0 0 93 0 0 0 0 0 0 0 0 0 0
Added Vol: 8 200 0 0 255 3 4 0 6 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 282 0 0 348 3 4 0 6 0 0 0 0 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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
PHF Volume: 9 316 0 0 390 3 4 0 7 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 316 0 0 390 3 4 0 7 0 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 xxxx 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 xxxx 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 393 xxxx xxxxx xxxx xxxx xxxxx 725 xxxx 391 729 727 316
Potent Cap.: 1176 xxxx xxxxx xxxx xxxx xxxxx 395 xxxx 662 341 353 729
Move Cap.: 1176 xxxx xxxxx xxxx xxxx xxxxx 393 xxxx 662 336 350 729
Volume/Cap: 0.01 xxxx xxxxx xxxx xxxx xxxxx 0.01 xxxx 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx 0.0 xxxx 0.0 xxxx xxxx xxxxx
Control Del: 8.1 xxxx xxxxx xxxxx xxxx xxxxx 14.3 xxxx 10.5 xxxxx xxxx xxxxx
LOS by Move: A * * * * B * B * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 8.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: A * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 12.0 xxxxxx
ApproachLOS: * * B *
Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level Of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3
Average Delay (sec/veh): 7.1 Worst Case Level Of Service: D[27.1]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1! 0 0 1 0 0 0 1 0 0 1! 0 0
Volume Module:
Base Vol: 0 82 0 0 93 0 0 0 0 0 0 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 1.00
Initial Bse: 0 82 0 0 93 0 0 0 0 0 0 0 0 0
Added Vol: 198 129 17 15 156 90 68 0 146 14 0 12
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 198 211 17 15 249 90 68 0 146 14 0 12
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 222 236 19 17 279 101 76 0 164 16 0 13
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 222 236 19 17 279 101 76 0 164 16 0 13
Critical Gap Module:
Critical Gp: 4.1 xxx xxx 4.1 xxx xxx 7.1 xxx 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxx xxx 2.2 xxx xxx 3.5 xxx 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 380 xxx xxx 255 xxx xxx 1059 xxx 329 1134 1103 246
Potent Cap.: 1190 xxx xxx 1321 xxx xxx 204 xxx 717 181 213 798
Move Cap.: 1190 xxx xxx 1321 xxx xxx 166 xxx 717 116 166 798
Volume/Cap: 0.19 xxx xxx 0.01 xxx xxx 0.46 xxx 0.23 0.14 0.00 0.02
Level Of Service Module:
2Way95thQ: 0.7 xxx xxx 0.0 xxx xxx 2.1 xxx 0.9 xxx xxx xxx
Control Del: 8.7 xxx xxx 7.8 xxx xxx 43.8 xxx 11.5 xxx xxx xxx
LOS by Move: A * * A * * E * B * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxx xxx xxx xxx xxx xxx xxx xxx 192 xxx
SharedQueue: xxx xxx xxx xxx xxx xxx xxx xxx 0.5 xxx
Shrd ConDel: xxx xxx xxx xxx xxx xxx xxx xxx 27.1 xxx
Shared LOS: *
ApproachDel: xxx xxx xxx 21.8 27.1
ApproachLOS: * * * C D
Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level Of Service Computation Report FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C
Average Delay (sec/veh): 5.1 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: Yield Sign Yield Sign Yield Sign Yield Sign
Lanes: 1 1 1 1
Volume Module:
Base Vol: 31 82 0 0 93 0 0 0 53 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: 31 82 0 0 93 0 0 0 53 0 0 0
Added Vol: 6 344 0 0 317 0 0 0 7 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 37 426 0 0 410 0 0 0 60 0 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 41 477 0 0 459 0 0 0 67 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 41 477 0 0 459 0 0 0 67 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
FinalVolume: 41 477 0 0 459 0 0 0 67 0 0 0
PCE Module:
AutoPCE: 41 477 0 0 459 0 0 0 67 0 0 0
TruckPCE: 0 0 0 0 0 0 0 0 0 0 0 0
ComboPCE: 0 0 0 0 0 0 0 0 0 0 0 0
BicyclePCE: 0 0 0 0 0 0 0 0 0 0 0 0
AdjVolume: 41 477 0 0 459 0 0 0 67 0 0 0
Delay Module: >> Time Period: 0.25 hours <<
CircVolume: 0 41 459 519
MaxVolume: 1200 1178 952 xxxxxx
PedVolume: 0 0 0 0
AdjMaxVol: 1200 1178 952 xxxxxx
ApproachVol: 519 459 67 xxxxxx
ApproachDel: 5.3 5.0 4.1 xxxxxx
Queue: 2.2 1.9 0.2 xxxxx

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1
Cycle (sec): 70 Critical Vol./Cap.(X): 0.862
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 14.1
Optimal Cycle: 68 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 4 10 0 0 4 10 10 0 10 0 0 0 0
Lanes: 1 0 1 0 0 0 0 1 0 1 0 0 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 13 113 0 0 146 0 0 0 22 0 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 1.00
Initial Bse: 13 113 0 0 146 0 0 0 22 0 0 0 0
Added Vol: 311 310 0 0 241 41 56 0 88 0 0 0 0
PasserByVol: 170 38 0 0 38 0 0 0 57 0 0 0 0
Initial Fut: 494 461 0 0 425 41 56 0 167 0 0 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 553 516 0 0 476 46 63 0 187 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 553 516 0 0 476 46 63 0 187 0 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 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 1.00
FinalVolume: 553 516 0 0 476 46 63 0 187 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.46 1.00 1.00 1.00 1.00 0.85 0.89 1.00 0.89 1.00 1.00 1.00 1.00
Lanes: 1.00 1.00 0.00 0.00 1.00 1.00 0.25 0.00 0.75 0.00 0.00 0.00 0.00
Final Sat.: 865 1900 0 0 1900 1615 424 0 1264 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.64 0.27 0.00 0.00 0.25 0.03 0.15 0.00 0.15 0.00 0.00 0.00 0.00
Crit Moves: ****
Green/Cycle: 0.74 0.74 0.00 0.00 0.74 0.74 0.17 0.00 0.17 0.00 0.00 0.00 0.00
Volume/Cap: 0.86 0.37 0.00 0.00 0.34 0.04 0.86 0.00 0.86 0.00 0.00 0.00 0.00
Delay/Veh: 17.9 3.3 0.0 0.0 3.2 2.4 50.4 0.0 50.4 0.0 0.0 0.0 0.0
User DelAdj: 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
AdjDel/Veh: 17.9 3.3 0.0 0.0 3.2 2.4 50.4 0.0 50.4 0.0 0.0 0.0 0.0
LOS by Move: B A A A A A D A D A A A
HCM2k95thQ: 22 8 0 0 7 1 16 0 16 0 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village Proposed Project Cumulative Saturday Peak Hour

Level of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2
Average Delay (sec/veh): 4.9 Worst Case Level Of Service: E[38.6]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 0 1 0 0 0 0 1! 0 0 1 0 0 0 0 0
Volume Module:
Base Vol: 0 113 0 0 146 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Growth Adj: 1.00
Initial Bse: 0 113 0 0 146 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Added Vol: 35 290 42 0 218 106 60 0 29 35 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 19 0 19 0 0 0 0 0 0 19 19 0 0 0 0 0 0 0 0 0 0
Initial Fut: 54 403 61 0 364 106 60 0 48 54 0 0 0 0 0 0 0 0 0 0 0
User Adj: 1.12
PHF Adj: 1.00
PHF Volume: 60 451 68 0 408 119 67 0 54 60 0 0 0 0 0 0 0 0 0 0 0
Reduct Vol: 0
FinalVolume: 60 451 68 0 408 119 67 0 54 60 0 0 0 0 0 0 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 7.1 6.5 6.2 7.1 xxxxx xxxxx
FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 3.5 xxxxx xxxxx
Capacity Module:
Cnflct Vol: 526 xxxxx xxxxx xxxxx xxxxx xxxxx 1074 1108 467 1100 xxxxx xxxxx
Potent Cap.: 1051 xxxxx xxxxx xxxxx xxxxx xxxxx 199 212 600 191 xxxxx xxxxx
Move Cap.: 1051 xxxxx xxxxx xxxxx xxxxx xxxxx 190 199 600 166 xxxxx xxxxx
Volume/Cap: 0.06 xxxxx xxxxx xxxxx xxxxx xxxxx 0.35 0.00 0.09 0.36 xxxxx xxxxx
Level Of Service Module:
2Way95thQ: 0.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 1.5 xxxxx xxxxx
Control Del: 8.6 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 38.6 xxxxx xxxxx
LOS by Move: A * * * * * E * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 273 xxxxx xxxxx xxxxx xxxxx
SharedQueue: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 2.1 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 28.2 xxxxx xxxxx xxxxx xxxxx
Shared LOS: *
ApproachDel: xxxxxxx xxxxxxx 28.2 38.6
ApproachLOS: * * * * * D E
Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Proposed Project
 Cumulative Saturday Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #30 FranklinBl/5th Av (South)

Average Delay (sec/veh): 2.6 Worst Case Level Of Service: C[16.3]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module:

Base Vol:	95	294	0	0	257	20	9	0	36	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:	95	294	0	0	257	20	9	0	36	0	0	0
Added Vol:	0	28	0	0	37	52	44	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	322	0	0	294	72	53	0	36	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:	95	322	0	0	294	72	53	0	36	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	95	322	0	0	294	72	53	0	36	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	366	xxxx	xxxxx	xxxx	xxxx	xxxxx	842	842	330	xxxx	xxxx	xxxxx
Potent Cap.:	1204	xxxx	xxxxx	xxxx	xxxx	xxxxx	337	303	716	xxxx	xxxx	xxxxx
Move Cap.:	1204	xxxx	xxxxx	xxxx	xxxx	xxxxx	316	278	716	xxxx	xxxx	xxxxx
Volume/Cap:	0.08	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.17	0.00	0.05	xxxx	xxxx	xxxxx

Level Of Service Module:

2Way95thQ:	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Control Del:	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	408	xxxxx	xxxx	xxxx	xxxxx			
SharedQueue:	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.8	xxxxx	xxxxx	xxxx	xxxxx			
Shrd ConDel:	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	16.3	xxxxx	xxxxx	xxxx	xxxxx			
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*			
ApproachDel:	xxxxxxx			xxxxxxx			16.3			xxxxxxx					
ApproachLOS:	*			*			C			*					

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.630
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 116 318 39 77 210 138 123 973 63 145 951 98
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: 116 318 39 77 210 138 123 973 63 145 951 98
Added Vol: 13 10 5 0 9 0 0 0 12 4 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 129 328 44 77 219 138 123 973 75 149 951 98
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: 129 328 44 77 219 138 123 973 75 149 951 98
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 129 328 44 77 219 138 123 973 75 149 951 98
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
FinalVolume: 129 328 44 77 219 138 123 973 75 149 951 98
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.49 1.00 0.85 0.32 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.86 0.14 1.00 1.81 0.19
Final Sat.: 922 1900 1615 600 1900 1615 1805 3315 256 1805 3227 333
Capacity Analysis Module:
Vol/Sat: 0.14 0.17 0.03 0.13 0.12 0.09 0.07 0.29 0.29 0.08 0.29 0.29
Crit Moves: **** ****
Green/Cycle: 0.27 0.27 0.27 0.27 0.27 0.27 0.11 0.47 0.47 0.13 0.49 0.49
Volume/Cap: 0.51 0.63 0.10 0.47 0.42 0.31 0.61 0.63 0.63 0.63 0.61 0.61
Delay/Veh: 23.2 24.8 19.1 23.2 21.4 20.6 34.8 14.9 14.9 34.2 13.8 13.8
User DelAdj: 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: 23.2 24.8 19.1 23.2 21.4 20.6 34.8 14.9 14.9 34.2 13.8 13.8
LOS by Move: C C B C C C C B B C B B
HCM2k95thQ: 6 14 2 4 8 5 7 18 18 8 17 17
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.558
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.7
Optimal Cycle: 36 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 columns for various adjustment factors (Growth, Initial, Added, Passer, etc.).

Saturation Flow Module:

Table with 12 columns for saturation flow factors (Sat/Lane, Adjustment, Lanes, Final Sat.).

Capacity Analysis Module:

Table with 12 columns for capacity analysis factors (Vol/Sat, Crit Moves, Green/Cycle, etc.).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.627
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.6
Optimal Cycle: 34 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 columns for various adjustment factors (Growth, Initial, Added, Passer, etc.).

Saturation Flow Module:

Table with 12 columns for saturation flow factors (Sat/Lane, Adjustment, Lanes, Final Sat.).

Capacity Analysis Module:

Table with 12 columns for capacity analysis factors (Vol/Sat, Crit Moves, Green/Cycle, etc.).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 1.155
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 67.9
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module table with 12 columns and 4 rows including Adjustment, Lanes, Final Sat., and Final Sat. values.

Capacity Analysis Module table with 12 columns and 14 rows including Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.4 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, Lanes.

Volume Module table with 12 columns and 14 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with 12 columns and 3 rows including Critical Gap, FollowUpTim.

Capacity Module table with 12 columns and 5 rows including Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with 12 columns and 10 rows including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.911
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 64.1
Optimal Cycle: 90 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Grid of traffic volume and adjustment factors for various approaches and movements.

Saturation Flow Module: Grid showing Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module: Grid showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.958
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 116 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Grid of traffic volume and adjustment factors for various approaches and movements.

Saturation Flow Module: Grid showing Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module: Grid showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 1.067
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 52.0
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module table with 12 columns and 4 rows including Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 14 rows including Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 2.6 Worst Case Level Of Service: C[20.5]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Volume Module table with 12 columns and 14 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Critical Gap Module table with 12 columns and 3 rows including Critical Gap, FollowUpTim, and Capacity Module.

Capacity Module table with 12 columns and 4 rows including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns and 14 rows including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy
Average Delay (sec/veh): 2.5 Worst Case Level Of Service: C[19.4]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 613 13 53 144 0 0 0 0 6 0 68
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: 0 613 13 53 144 0 0 0 0 6 0 68
Added Vol: 2 0 0 0 0 0 0 23 0 0 17 0
Diverted Tr: -427 0 0 0 0 0 0 0 -130 -5 5 0
Initial Fut: -425 613 13 53 144 0 0 23 -130 1 22 68
User Adj: 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 0 613 13 53 144 0 0 23 0 1 22 68
Reduct Vol: 0 0 0 0 0 0 0 0 0 5 0 0
FinalVolume: 0 613 13 53 144 0 0 23 0 0 22 68
Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx 6.5 6.2 7.1 6.5 6.2
FollowUpTim:xxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 626 xxxxx xxxxxx xxxxx 876 144 881 870 620
Potent Cap.: xxxxx xxxxx xxxxxx 965 xxxxx xxxxxx xxxxx 290 909 269 292 492
Move Cap.: xxxxx xxxxx xxxxxx 965 xxxxx xxxxxx xxxxx 273 909 241 276 492
Volume/Cap: xxxxx xxxxx xxxxxx 0.05 xxxxx xxxxxx xxxxx 0.08 0.00 0.00 0.08 0.14
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxx xxxxx xxxxxx 8.9 xxxxx xxxxxx xxxxxx 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 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 273 xxxxx 413 xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxxx xxxxx 0.3 xxxxxx 0.8 xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 8.9 xxxxx xxxxxx xxxxxx xxxxx 19.4 xxxxxx 16.1 xxxxxx
Shared LOS: * * * A * * * * * C * C *
ApproachDel: xxxxxx xxxxxx 19.4 xxxxxx 16.1
ApproachLOS: * * C C
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.558
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.0
Optimal Cycle: 28 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 10 0 0 10 0 0 0 0 0 4 0 10
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 637 163 25 229 0 0 0 0 43 0 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: 0 637 163 25 229 0 0 0 0 43 0 29
Added Vol: 0 32 0 0 33 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 669 163 25 262 0 0 0 0 43 0 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: 0 669 163 25 262 0 0 0 0 43 0 29
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 669 163 25 262 0 0 0 0 43 0 29
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
FinalVolume: 0 669 163 25 262 0 0 0 0 43 0 29
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.97 0.97 0.93 0.93 1.00 1.00 1.00 1.00 0.92 1.00 0.92
Lanes: 0.00 0.80 0.20 0.09 0.91 0.00 0.00 0.00 0.00 0.60 0.00 0.40
Final Sat.: 0 1488 363 153 1606 0 0 0 0 1042 0 703
Capacity Analysis Module:
Vol/Sat: 0.00 0.45 0.45 0.16 0.16 0.00 0.00 0.00 0.00 0.04 0.00 0.04
Crit Moves: ****
Green/Cycle: 0.00 0.68 0.68 0.68 0.68 0.00 0.00 0.00 0.00 0.20 0.00 0.20
Volume/Cap: 0.00 0.66 0.66 0.24 0.24 0.00 0.00 0.00 0.00 0.21 0.00 0.21
Delay/Veh: 0.0 6.0 6.0 3.2 3.2 0.0 0.0 0.0 0.0 17.0 0.0 17.0
User DelAdj: 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 6.0 6.0 3.2 3.2 0.0 0.0 0.0 0.0 17.0 0.0 17.0
LOS by Move: A A A A A A A A A B A B
HCM2k95thQ: 0 16 16 4 4 0 0 0 0 2 0 2
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: A[9.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0).

Volume Module:

Table with 12 columns for traffic volume and 12 columns for adjustment factors (Growth Adj, Initial Bse, Added Vol, etc.).

Critical Gap Module:

Table with 3 columns for Critical Gap, FollowUpTim, and values (4.1, 2.2, 6.4, 3.5).

Capacity Module:

Table with 3 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap. with values (159, 1433, 1433, 0.00).

Level Of Service Module:

Table with 12 columns for Level of Service parameters (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., etc.).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 2.6 Worst Case Level Of Service: A[9.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0).

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with 12 columns for traffic volume and 12 columns for adjustment factors (Growth Adj, Initial Bse, Added Vol, etc.).

Critical Gap Module:

Table with 3 columns for Critical Gap, FollowUpTim, and values (4.1, 2.2, 6.4, 3.5).

Capacity Module:

Table with 3 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap. with values (159, 1433, 1433, 0.00).

Level Of Service Module:

Table with 12 columns for Level of Service parameters (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., etc.).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.112
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 68.6
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Protected and Permitted.

Volume Module table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.604
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.7
Optimal Cycle: 44 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Permitted.

Volume Module table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.178
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 82.7
Optimal Cycle: 180 Level of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Grid of traffic volume data for various movements and approaches.

Saturation Flow Module: Grid of saturation flow data for different approaches and movements.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.828
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.6
Optimal Cycle: 67 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements. Grid of traffic volume data for various movements and approaches.

Saturation Flow Module: Grid of saturation flow data for different approaches and movements.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: F[184.6]

Table with 5 columns: Approach, Movement, Control, Rights, Lanes. Rows include North Bound, South Bound, East Bound, West Bound with sub-columns for L, T, R movements.

Volume Module table with 12 columns and 12 rows showing traffic volume data for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module table with 12 columns and 2 rows showing Critical Gap and FollowUpTim values.

Capacity Module table with 12 columns and 5 rows showing Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module table with 12 columns and 10 rows showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: E[40.4]

Table with 5 columns: Approach, Movement, Control, Rights, Lanes. Rows include North Bound, South Bound, East Bound, West Bound with sub-columns for L, T, R movements.

Volume Module table with 12 columns and 12 rows showing traffic volume data for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module table with 12 columns and 2 rows showing Critical Gap and FollowUpTim values.

Capacity Module table with 12 columns and 5 rows showing Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module table with 12 columns and 10 rows showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.023
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 57.3
Optimal Cycle: 162 Level Of Service: E

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Protected and Split Phase.

Volume Module:

Table with 12 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume) and 12 rows for different approaches.

Saturation Flow Module:

Table with 12 columns for saturation flow metrics (Sat/Lane, Adjustment, Lanes, Final Sat) and 4 rows for different approaches.

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ) and 9 rows for different approaches.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.839
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 25.9
Optimal Cycle: 71 Level Of Service: C

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Split Phase and Protected.

Volume Module:

Table with 12 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume) and 12 rows for different approaches.

Saturation Flow Module:

Table with 12 columns for saturation flow metrics (Sat/Lane, Adjustment, Lanes, Final Sat) and 4 rows for different approaches.

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ) and 9 rows for different approaches.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.861
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.4
Optimal Cycle: 77 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and saturation flow data.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.009
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 48.2
Optimal Cycle: 154 Level of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and saturation flow data.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.497
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.6
Optimal Cycle: 26 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 0 427 0 24 130 0 0 0 0 5 0 226
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: 0 427 0 24 130 0 0 0 0 5 0 226
Added Vol: 1 60 12 6 81 1 4 3 2 15 1 13
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 1 487 12 30 211 1 4 3 2 20 1 239
User Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
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: 1 526 13 32 228 1 4 3 2 22 1 258
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 1 526 13 32 228 1 4 3 2 22 1 258
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
FinalVolume: 1 526 13 32 228 1 4 3 2 22 1 258
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.60 1.00 0.85 0.36 1.00 0.85 0.49 0.94 0.94 0.77 0.85 0.85
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.60 0.40 1.00 0.01 0.99
Final Sat.: 1148 1900 1615 688 1900 1615 939 1072 714 1454 7 1610
Capacity Analysis Module:
Vol/Sat: 0.00 0.28 0.01 0.05 0.12 0.00 0.00 0.00 0.00 0.01 0.16 0.16
Crit Moves: ****
Green/Cycle: 0.56 0.56 0.56 0.56 0.56 0.56 0.32 0.32 0.32 0.32 0.32 0.32
Volume/Cap: 0.00 0.50 0.01 0.08 0.22 0.00 0.01 0.01 0.01 0.05 0.50 0.50
Delay/Veh: 4.9 7.1 4.9 5.2 5.7 4.9 11.5 11.5 11.5 11.7 14.4 14.4
User DelAdj: 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: 4.9 7.1 4.9 5.2 5.7 4.9 11.5 11.5 11.5 11.7 14.4 14.4
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 11 0 1 4 0 0 0 0 1 8 8
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.8]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1! 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 0 427 0 0 135 0 0 0 0 0 0 0 0 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 1.00
Initial Bse: 0 427 0 0 135 0 0 0 0 0 0 0 0 0 0 0
Added Vol: 3 66 0 0 97 1 6 0 10 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 3 493 0 0 232 1 6 0 10 0 0 0 0
User Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
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: 3 532 0 0 251 1 6 0 11 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 3 532 0 0 251 1 6 0 11 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 252 xxxx xxxxx xxxx xxxx xxxxx 790 790 251 795 791 532
Potent Cap.: 1326 xxxx xxxxx xxxx xxxx xxxxx 362 325 793 308 324 551
Move Cap.: 1326 xxxx xxxxx xxxx xxxx xxxxx 361 324 793 303 324 551
Volume/Cap: 0.00 xxxx xxxxx xxxx xxxx xxxxx 0.02 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A * * * * * * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 547 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 11.8 xxxxx xxxxx xxxx xxxxx
Shared LOS: A * * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 11.8 xxxxxx
ApproachLOS: * * * * * * * * * * * * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: C[24.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns and 12 rows showing traffic volume data for various approaches and movements.

Critical Gap Module:

Table with 4 columns and 2 rows showing critical gap and follow-up time data.

Capacity Module:

Table with 12 columns and 5 rows showing capacity and volume/capacity data.

Level Of Service Module:

Table with 12 columns and 10 rows showing level of service and delay data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level Of Service Computation Report

FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 5.2 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns and 12 rows showing traffic volume data for various approaches and movements.

PCE Module:

Table with 12 columns and 5 rows showing PCE module data.

Delay Module: >> Time Period: 0.25 hours <<

Table with 4 columns and 8 rows showing delay module data.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1
Cycle (sec): 70 Critical Vol./Cap.(X): 0.405
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.2
Optimal Cycle: 26 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Lanes: 1 0 1 0 0 0 0 1 0 1 0 0 1 0 0 0 0 0 0 0 0
Volume Module:
Base Vol: 5 440 0 0 200 0 0 0 0 28 0 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 1.00 1.00
Initial Bse: 5 440 0 0 200 0 0 0 0 28 0 0 0 0
Added Vol: 99 122 0 0 142 13 10 0 18 0 0 0 0
PasserByVol: 41 9 0 0 9 0 0 0 14 0 0 0 0
Initial Fut: 145 571 0 0 351 13 10 0 60 0 0 0 0
User Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
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: 157 617 0 0 379 14 11 0 65 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 157 617 0 0 379 14 11 0 65 0 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 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 1.00
FinalVolume: 157 617 0 0 379 14 11 0 65 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.52 1.00 1.00 1.00 1.00 0.85 0.88 1.00 0.88 1.00 1.00 1.00 1.00
Lanes: 1.00 1.00 0.00 0.00 1.00 1.00 0.14 0.00 0.86 0.00 0.00 0.00 0.00
Final Sat.: 994 1900 0 0 1900 1615 238 0 1430 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.16 0.32 0.00 0.00 0.20 0.01 0.05 0.00 0.05 0.00 0.00 0.00 0.00
Crit Moves: ****
Green/Cycle: 0.77 0.77 0.00 0.00 0.77 0.77 0.14 0.00 0.14 0.00 0.00 0.00 0.00
Volume/Cap: 0.20 0.42 0.00 0.00 0.26 0.01 0.32 0.00 0.32 0.00 0.00 0.00 0.00
Delay/Veh: 2.3 2.9 0.0 0.0 2.4 1.8 27.7 0.0 27.7 0.0 0.0 0.0 0.0
User DelAdj: 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
AdjDel/Veh: 2.3 2.9 0.0 0.0 2.4 1.8 27.7 0.0 27.7 0.0 0.0 0.0 0.0
LOS by Move: A A A A A C A C A A A
HCM2k95thQ: 2 9 0 0 5 0 4 0 4 0 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2
Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[23.5]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 440 0 0 200 0 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 440 0 0 200 0 0 0 0 0 0 0 0 0 0 0
Added Vol: 11 108 13 0 143 34 11 0 5 7 0 0 0
PasserByVol: 5 0 5 0 0 0 0 0 5 5 0 0 0
Initial Fut: 16 548 18 0 343 34 11 0 10 12 0 0 0
User Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
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
PHF Volume: 17 592 19 0 370 37 12 0 11 13 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 17 592 19 0 370 37 12 0 11 13 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 7.1 6.5 6.2 7.1 xxxx xxxxx
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 xxxx xxxxx
Capacity Module:
Cnflct Vol: 407 xxxx xxxxx xxxx xxxx xxxxx 1025 1035 389 1030 xxxx xxxxx
Potent Cap.: 1163 xxxx xxxxx xxxx xxxx xxxxx 215 234 664 213 xxxx xxxxx
Move Cap.: 1163 xxxx xxxxx xxxx xxxx xxxxx 213 230 664 208 xxxx xxxxx
Volume/Cap: 0.01 xxxx xxxxx xxxx xxxx xxxxx 0.06 0.00 0.02 0.06 xxxx xxxxx
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx 0.2 xxxx xxxxx
Control Del: 8.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx 23.5 xxxx xxxxx
LOS by Move: A * * * * * C * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 315 xxxxx xxxx xxxx xxxxx
SharedQueue:xxxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.2 xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 17.3 xxxxx xxxxx xxxx xxxxx
Shared LOS: * * * * * * * * * * * * *
ApproachDel: xxxxxxx xxxxxxx 17.3 23.5
ApproachLOS: * * * * * C C
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: B[13.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, 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.

Critical Gap Module:

Table with 12 columns and 2 rows showing critical gap and follow-up time values.

Capacity Module:

Table with 12 columns and 4 rows showing capacity-related metrics like Cnflct Vol, Potent Cap, Move Cap, etc.

Level Of Service Module:

Table with 12 columns and 10 rows showing level of service metrics like 2Way95thQ, Control Del, Shared Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 1.006
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 44.2
Optimal Cycle: 150 Level of Service: D
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 78 316 71 238 597 36 239 790 116 101 1416 81
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: 78 316 71 238 597 36 239 790 116 101 1416 81
Added Vol: 23 17 8 0 22 0 0 0 30 10 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 101 333 79 238 619 36 239 790 146 111 1416 81
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: 101 333 79 238 619 36 239 790 146 111 1416 81
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 101 333 79 238 619 36 239 790 146 111 1416 81
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
FinalVolume: 101 333 79 238 619 36 239 790 146 111 1416 81
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.17 1.00 0.85 0.38 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.69 0.31 1.00 1.89 0.11
Final Sat.: 325 1900 1615 714 1900 1615 1805 2977 550 1805 3387 194
Capacity Analysis Module:
Vol/Sat: 0.31 0.18 0.05 0.33 0.33 0.02 0.13 0.27 0.27 0.06 0.42 0.42
Crit Moves: ****
Green/Cycle: 0.32 0.32 0.32 0.32 0.32 0.32 0.13 0.45 0.45 0.10 0.42 0.42
Volume/Cap: 0.96 0.54 0.15 1.03 1.01 0.07 1.01 0.59 0.59 0.63 1.01 1.01
Delay/Veh: 97.7 20.4 17.0 90.3 61.3 16.4 90.2 15.0 15.0 37.8 45.1 45.1
User DelAdj: 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: 97.7 20.4 17.0 90.3 61.3 16.4 90.2 15.0 15.0 37.8 45.1 45.1
LOS by Move: F C B F E B F B B D D D
HCM2k95thQ: 10 12 3 19 35 1 19 16 16 7 42 42
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 1.027
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 48.7
Optimal Cycle: 177 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.781
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 15.4
Optimal Cycle: 50 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 1.225
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 63.7
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for adjustment factors and final saturation values.

Capacity Analysis Module table with 12 columns for volume/saturation, delay, LOS, and approach delay.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[10.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for gap values and follow-up times.

Capacity Module table with 12 columns for conflict volume, potential capacity, move capacity, and volume/capacity.

Level of Service Module table with 12 columns for 2-way 95th percentile delay, control delay, LOS, movement, shared capacity, shared queue, shared delay, shared LOS, approach delay, and approach LOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.981
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 86.3
Optimal Cycle: 128 Level Of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.840
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.9
Optimal Cycle: 62 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 1.119
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 61.8
Optimal Cycle: 0 Level Of Service: F

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
Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 0 1! 0 0

Volume Module:
Base Vol: 69 105 10 37 624 12 11 19 95 10 20 14
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: 69 105 10 37 624 12 11 19 95 10 20 14
Added Vol: 0 130 0 0 160 0 0 0 1 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 69 235 10 37 784 12 11 19 96 10 20 14
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: 69 235 10 37 784 12 11 19 96 10 20 14
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 69 235 10 37 784 12 11 19 96 10 20 14
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
FinalVolume: 69 235 10 37 784 12 11 19 96 10 20 14

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: 0.22 0.75 0.03 0.04 0.95 0.01 0.09 0.15 0.76 0.23 0.45 0.32
Final Sat.: 146 498 21 33 701 11 51 88 444 120 239 167

Capacity Analysis Module:
Vol/Sat: 0.47 0.47 0.47 1.12 1.12 1.12 0.22 0.22 0.22 0.08 0.08 0.08
Crit Moves: ****
Delay/Veh: 12.9 12.9 12.9 90.7 90.7 90.7 10.5 10.5 10.5 10.0 10.0 10.0
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: 12.9 12.9 12.9 90.7 90.7 90.7 10.5 10.5 10.5 10.0 10.0 10.0
LOS by Move: B B F F B B B B
ApproachDel: 12.9 90.7 10.5 10.0
Delay Adj: 1.00 1.00 1.00 1.00
ApprAdjDel: 12.9 90.7 10.5 10.0
LOS by Appr: B F B B
AllWayAvgQ: 0.8 0.8 0.8 17.1 17.1 17.1 0.3 0.3 0.3 0.1 0.1 0.1

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 3.0 Worst Case Level Of Service: D[28.5]

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 0 1! 0 0

Volume Module:
Base Vol: 0 120 0 47 682 0 0 0 0 9 0 61
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: 0 120 0 47 682 0 0 0 0 9 0 61
Added Vol: 5 129 31 0 160 1 1 3 2 36 11 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 5 249 31 47 842 1 1 3 2 45 11 61
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: 5 249 31 47 842 1 1 3 2 45 11 61
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 5 249 31 47 842 1 1 3 2 45 11 61

Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx 4.1 xxxx xxxxx 7.1 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx 2.2 xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3

Capacity Module:
Cnflct Vol: 843 xxxx xxxxx 280 xxxx xxxxx 1247 1227 843 1214 1212 265
Potent Cap.: 802 xxxx xxxxx 1294 xxxx xxxxx 152 180 367 160 184 779
Move Cap.: 802 xxxx xxxxx 1294 xxxx xxxxx 129 172 367 152 176 779
Volume/Cap: 0.01 xxxx xxxxx 0.04 xxxx xxxxx 0.01 0.02 0.01 0.30 0.06 0.08

Level of Service Module:
2Way95thQ: 0.0 xxxx xxxxx 0.1 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 9.5 xxxx xxxxx 7.9 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A * * A * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 196 xxxxx xxxx 268 xxxxx
SharedQueue:xxxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx 2.1 xxxxx
Shrd ConDel:xxxxxx xxxx xxxxx xxxxx xxxxx xxxxx 24.0 xxxxx xxxxx 28.5 xxxxx
Shared LOS: * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 24.0 28.5
ApproachLOS: * * C D

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: C[18.9]

Table with 4 columns: Approach (North, South, East, West), Movement (L, T, R), Control (Uncontrolled, Stop Sign), and Lanes (0, 1, 0, 0).

Volume Module table with columns: Count, Date (29 Mar 2005), and various volume metrics (Base Vol, Growth Adj, etc.) for 12 movements.

Critical Gap Module table with columns: Critical Gap, FollowUpTim, and values for 12 movements.

Capacity Module table with columns: Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap. for 12 movements.

Level Of Service Module table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.567
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.3
Optimal Cycle: 29 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West), Movement (L, T, R), Control (Permitted, Split Phase), and Lanes (0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0).

Volume Module table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume for 12 movements.

Saturation Flow Module table with columns: Sat/Lane, Adjustment, Lanes, and Final Sat. for 12 movements.

Capacity Analysis Module table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 3.8 Worst Case Level Of Service: A[8.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0)

Volume Module: >> Count Date: 1 Sep 1997 <<
Base Vol: 0 130 3 44 586 0 0 0 0 6 0 10
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

Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 6.4 6.5 6.2
FollowUpTim:xxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 3.5 4.0 3.3

Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 30 xxxxx xxxxxx xxxxx xxxxx xxxxxx 149 149 29
Potent Cap.: xxxxx xxxxx xxxxxx 1596 xxxxx xxxxxx xxxxx xxxxx xxxxxx 848 747 1052

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxx xxxxx xxxxxx 7.3 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 5.1 Worst Case Level Of Service: A[8.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0)

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 128 2 74 588 0 0 0 0 4 0 39
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

Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 6.4 6.5 6.2
FollowUpTim:xxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 3.5 4.0 3.3

Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 28 xxxxx xxxxxx xxxxx xxxxx xxxxxx 209 209 27
Potent Cap.: xxxxx xxxxx xxxxxx 1599 xxxxx xxxxxx xxxxx xxxxx xxxxxx 784 692 1054

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxx xxxxx xxxxxx 7.4 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.015
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 38.8
Optimal Cycle: 161 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for different traffic movements and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for movements and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for movements and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.705
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.3
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for different traffic movements and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for movements and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for movements and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.137
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 67.7
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.923
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 42.5
Optimal Cycle: 95 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:except thru movements

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: F[111.6]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Table with 10 columns: Volume Module, Count, Date, and various traffic volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Table with 10 columns: Critical Gap Module, Critical Gp, FollowUpTim, and various gap metrics.

Table with 10 columns: Capacity Module, Cnflct Vol, Potent Cap., Move Cap., Volume/Cap, and various capacity metrics.

Table with 10 columns: Level of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 54.9 Worst Case Level Of Service: F[1737.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Table with 10 columns: Volume Module, Count, Date, and various traffic volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Table with 10 columns: Critical Gap Module, Critical Gp, FollowUpTim, and various gap metrics.

Table with 10 columns: Capacity Module, Cnflct Vol, Potent Cap., Move Cap., Volume/Cap, and various capacity metrics.

Table with 10 columns: Level of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.077
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 75.3
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for various adjustment factors (Growth, Initial, Added, Passer, Initial Fut, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.961
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 30.8
Optimal Cycle: 121 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for various adjustment factors (Growth, Initial, Added, Passer, Initial Fut, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.948
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 37.2
Optimal Cycle: 112 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.140
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 69.1
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.525
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.6
Optimal Cycle: 27 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 0 106 0 154 537 0 0 0 0 18 0 14
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: 0 106 0 154 537 0 0 0 0 18 0 14
Added Vol: 2 158 31 7 189 1 1 3 1 36 1 6
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 2 264 31 161 726 1 1 3 1 54 1 20
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 2 309 36 188 849 1 1 4 1 63 1 23
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 2 309 36 188 849 1 1 4 1 63 1 23
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
FinalVolume: 2 309 36 188 849 1 1 4 1 63 1 23
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.23 1.00 0.85 0.56 1.00 0.85 0.75 0.96 0.96 0.77 0.86 0.86
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.75 0.25 1.00 0.05 0.95
Final Sat.: 435 1900 1615 1068 1900 1615 1421 1372 457 1454 78 1551
Capacity Analysis Module:
Vol/Sat: 0.01 0.16 0.02 0.18 0.45 0.00 0.00 0.00 0.00 0.04 0.02 0.02
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.01 0.24 0.03 0.26 0.66 0.00 0.00 0.01 0.01 0.22 0.08 0.08
Delay/Veh: 2.6 3.2 2.6 3.3 5.9 2.6 16.0 16.1 16.1 17.1 16.3 16.3
User DelAdj: 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: 2.6 3.2 2.6 3.3 5.9 2.6 16.0 16.1 16.1 17.1 16.3 16.3
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 4 0 3 16 0 0 0 0 2 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.1 Worst Case Level Of Service: C[18.2]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1! 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 0 106 0 0 555 0 0 0 0 0 0 0 0 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 1.00
Initial Bse: 0 106 0 0 555 0 0 0 0 0 0 0 0 0 0 0
Added Vol: 8 189 0 0 224 3 1 0 3 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 295 0 0 779 3 1 0 3 0 0 0 0 0 0 0
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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
PHF Volume: 9 345 0 0 911 4 1 0 4 0 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 345 0 0 911 4 1 0 4 0 0 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 915 xxxx xxxxx xxxxx xxxxx xxxxx 1277 1277 913 1279 1279 345
Potent Cap.: 754 xxxx xxxxx xxxxx xxxx xxxxx 185 168 334 144 168 702
Move Cap.: 754 xxxx xxxxx xxxxx xxxx xxxxx 184 166 334 141 165 702
Volume/Cap: 0.01 xxxx xxxxx xxxxx xxxxx xxxxx 0.01 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: 9.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxxx xxxxx xxxxx 277 xxxxx xxxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 9.8 xxxx xxxxx xxxxx xxxxx xxxxx 18.2 xxxxx xxxxx xxxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxx xxxxxx 18.2 xxxxxx
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 18.4 Worst Case Level Of Service: F[111.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns and 12 rows showing traffic volume data for various approaches and movements.

Critical Gap Module:

Table with 4 columns and 2 rows showing critical gap and follow-up time data.

Capacity Module:

Table with 12 columns and 4 rows showing capacity and volume/capacity data.

Level Of Service Module:

Table with 12 columns and 10 rows showing level of service and delay data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level Of Service Computation Report

FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 11.6 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns and 12 rows showing traffic volume data for various approaches and movements.

PCE Module:

Table with 12 columns and 4 rows showing PCE module data.

Delay Module: >> Time Period: 0.25 hours <<

Table with 4 columns and 6 rows showing delay module data.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 1.418
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 63.4
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and delay metrics.

Saturation Flow Module table with 12 columns and 6 rows showing saturation flow and adjustment factors.

Capacity Analysis Module table with 12 columns and 11 rows showing capacity, LOS, and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 14.4 Worst Case Level Of Service: F[170.4]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and delay metrics.

Critical Gap Module table with 12 columns and 3 rows showing critical gap and follow-up time.

Capacity Module table with 12 columns and 4 rows showing capacity and volume/capacity ratios.

Level of Service Module table with 12 columns and 10 rows showing LOS, delay, and queue metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 2.3 Worst Case Level Of Service: D[28.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns representing traffic movements and 10 rows of volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 12 columns and 2 rows: Critical Gap, FollowUpTim.

Capacity Module:

Table with 12 columns and 4 rows: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns and 10 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.559
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.0
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 65 147 29 66 131 89 153 856 54 58 1033 90
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: 65 147 29 66 131 89 153 856 54 58 1033 90
Added Vol: 26 19 9 0 24 0 0 0 32 11 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 91 166 38 66 155 89 153 856 86 69 1033 90
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: 91 166 38 66 155 89 153 856 86 69 1033 90
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 91 166 38 66 155 89 153 856 86 69 1033 90
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
FinalVolume: 91 166 38 66 155 89 153 856 86 69 1033 90
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.50 1.00 0.85 0.47 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.82 0.18 1.00 1.84 0.16
Final Sat.: 950 1900 1615 891 1900 1615 1805 3234 325 1805 3281 286
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.10 0.09 0.02 0.07 0.08 0.06 0.08 0.26 0.26 0.04 0.31 0.31
Crit Moves: **** *
Green/Cycle: 0.16 0.16 0.16 0.16 0.16 0.16 0.15 0.60 0.60 0.12 0.56 0.56
Volume/Cap: 0.61 0.56 0.15 0.47 0.52 0.35 0.56 0.44 0.44 0.32 0.56 0.56
Delay/Veh: 34.9 29.7 25.8 29.4 28.8 27.2 30.1 7.9 7.9 29.1 10.1 10.1
User DelAdj: 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: 34.9 29.7 25.8 29.4 28.8 27.2 30.1 7.9 7.9 29.1 10.1 10.1
LOS by Move: C C C C C C C A A C B B
HCM2kAvgQ: 3 4 1 2 4 2 4 6 6 2 9 9

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freeport Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.529
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.1
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and growth factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.393
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.5
Optimal Cycle: 26 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 2 Apr 2005 <<

Table with 12 columns for volume and growth factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av
Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[10.9]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 1 0 0 0 0 0 0 0 0 0 1
Volume Module:
Base Vol: 0 536 83 33 443 0 0 0 0 0 0 0 63
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: 0 536 83 33 443 0 0 0 0 0 0 0 63
Added Vol: 0 0 69 48 5 0 0 0 0 0 0 0 27
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 536 152 81 448 0 0 0 0 0 0 0 90
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: 0 536 152 81 448 0 0 0 0 0 0 0 90
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 536 152 81 448 0 0 0 0 0 0 0 90
Critical Gap Module:
Critical Gap:xxxxx xxxxx xxxxx 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 6.2
FollowUpTim:xxxxx xxxxx xxxxx 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 3.3
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxx 688 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 344
Potent Cap.: xxxxx xxxxx xxxxx 916 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 703
Move Cap.: xxxxx xxxxx xxxxx 916 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 703
Volume/Cap: xxxxx xxxxx xxxxx 0.09 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.13
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx 0.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.4
Control Del:xxxxx xxxxx xxxxx 9.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 10.9
LOS by Move: * * * A * * * * * * * * * B
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx
SharedQueue:xxxxx xxxxx xxxxx 0.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel:xxxxx xxxxx xxxxx 9.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * A * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx 10.9
ApproachLOS: * * * * * B
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St
Cycle (sec): 70 Critical Vol./Cap.(X): 0.687
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.0
Optimal Cycle: 46 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: Split Phase Split Phase Split Phase Split Phase
Rights: Include Include Ignore Include
Min. Green: 10 10 0 0 10 10 10 0 0 10 0 0 0 0
Lanes: 0 1 1 0 0 0 0 0 1 0 1 0 0 0 0 0
Volume Module:
Base Vol: 310 588 0 0 496 29 56 0 444 0 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: 310 588 0 0 496 29 56 0 444 0 0 0 0
Added Vol: 0 16 0 0 5 0 53 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 310 604 0 0 501 29 109 0 444 0 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 310 604 0 0 501 29 109 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 310 604 0 0 501 29 109 0 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
FinalVolume: 310 604 0 0 501 29 109 0 0 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.93 1.00 1.00 0.99 0.99 0.95 1.00 1.00 1.00 1.00 1.00
Lanes: 0.68 1.32 0.00 0.00 0.95 0.05 1.00 0.00 1.00 0.00 0.00 0.00
Final Sat.: 1204 2345 0 0 1783 103 1805 0 1900 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.26 0.26 0.00 0.00 0.28 0.28 0.06 0.00 0.00 0.00 0.00 0.00
Crit Moves: **** *
Green/Cycle: 0.35 0.35 0.00 0.00 0.38 0.38 0.14 0.00 0.00 0.00 0.00 0.00
Volume/Cap: 0.74 0.74 0.00 0.00 0.74 0.74 0.42 0.00 0.00 0.00 0.00 0.00
Delay/Veh: 22.4 22.4 0.0 0.0 22.8 22.8 28.5 0.0 0.0 0.0 0.0 0.0
User DelAdj: 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: 22.4 22.4 0.0 0.0 22.8 22.8 28.5 0.0 0.0 0.0 0.0 0.0
LOS by Move: C C A A C C C A A A A A
HCM2kAvgQ: 11 11 0 0 11 11 3 0 0 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy
Cycle (sec): 70 Critical Vol./Cap.(X): 0.515
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.5
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for various approaches.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.289
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.7
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for various approaches.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.714
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.5
Optimal Cycle: 49 Level Of Service: B

Table with columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Protected, Ignored, etc.), Rights, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.476
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 44 Level Of Service: A

Table with columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Permitted, etc.), Rights, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.618
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 47 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.851
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 31.3
Optimal Cycle: 72 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

 Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: E[48.0]

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 0 0 0 0 0 1! 0 0 1 0 2 0 0 0 0 1 1 0

Volume Module:
 Base Vol: 0 0 0 27 0 76 58 1028 0 0 1113 60
 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 0 0 27 0 76 58 1028 0 0 1113 60
 Added Vol: 0 0 0 0 0 0 0 328 0 0 404 3
 Diverted Tr: 0 0 0 -24 0 -69 -52 24 0 0 30 -30
 Initial Fut: 0 0 0 3 0 7 6 1380 0 0 1547 33
 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 0 0 3 0 7 6 1380 0 0 1547 33
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 FinalVolume: 0 0 0 3 0 7 6 1380 0 0 1547 33

Critical Gap Module:
 Critical Gap:xxxxx xxxx xxxxx 6.8 6.5 6.9 4.1 xxxx xxxxx xxxxx xxxx xxxxx
 FollowUpTim:xxxxx xxxx xxxxx 3.5 4.0 3.3 2.2 xxxx xxxxx xxxxx xxxx xxxxx

Capacity Module:
 Cnflct Vol: xxxx xxxx xxxxx 2266 2956 790 1580 xxxx xxxxx xxxx xxxx xxxxx
 Potent Cap.: xxxx xxxx xxxxx 35 15 337 422 xxxx xxxxx xxxx xxxx xxxxx
 Move Cap.: xxxx xxxx xxxxx 35 15 337 422 xxxx xxxxx xxxx xxxx xxxxx
 Volume/Cap: xxxx xxxx xxxxx 0.09 0.00 0.02 0.01 xxxx xxxxx xxxx xxxx xxxxx

Level Of Service Module:
 2Way95thQ: xxxx xxxx xxxxx xxxx xxxx xxxxx 0.0 xxxx xxxxx xxxx xxxx xxxxx
 Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx 13.7 xxxx xxxxx xxxxx xxxx xxxxx
 LOS by Move: * * * * * B * * * * *
 Movement: LT - LTR - RT
 Shared Cap.: xxxx xxxx xxxxx xxxx 94 xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
 SharedQueue:xxxxx xxxx xxxxx xxxxx 0.3 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
 Shrd ConDel:xxxxx xxxx xxxxx xxxxx 48.0 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
 Shared LOS: * * * * * E * * * * *
 ApproachDel: xxxxxx 48.0 xxxxxx xxxxxx
 ApproachLOS: * * * * * E * * * * *

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Option 2 5th Avenue
 Cumulative Saturday Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 34.4 Worst Case Level Of Service: F[806.0]

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 0 0 0 0 0 1! 0 0 1 0 2 0 0 0 0 1 1 0

Volume Module:
 Base Vol: 0 0 0 58 0 73 69 993 0 0 1146 27
 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 0 0 58 0 73 69 993 0 0 1146 27
 Added Vol: 0 0 0 0 0 0 0 328 0 0 407 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 0 0 0 58 0 73 69 1321 0 0 1553 27
 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 0 0 58 0 73 69 1321 0 0 1553 27
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 FinalVolume: 0 0 0 58 0 73 69 1321 0 0 1553 27

Critical Gap Module:
 Critical Gap:xxxxx xxxx xxxxx 6.8 6.5 6.9 4.1 xxxx xxxxx xxxxx xxxx xxxxx
 FollowUpTim:xxxxx xxxx xxxxx 3.5 4.0 3.3 2.2 xxxx xxxxx xxxxx xxxx xxxxx

Capacity Module:
 Cnflct Vol: xxxx xxxx xxxxx 2365 3026 790 1580 xxxx xxxxx xxxx xxxx xxxxx
 Potent Cap.: xxxx xxxx xxxxx 30 13 337 422 xxxx xxxxx xxxx xxxx xxxxx
 Move Cap.: xxxx xxxx xxxxx 26 11 337 422 xxxx xxxxx xxxx xxxx xxxxx
 Volume/Cap: xxxx xxxx xxxxx 2.20 0.00 0.22 0.16 xxxx xxxxx xxxx xxxx xxxxx

Level Of Service Module:
 2Way95thQ: xxxx xxxx xxxxx xxxx xxxx xxxxx 0.6 xxxx xxxxx xxxx xxxx xxxxx
 Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx 15.2 xxxx xxxxx xxxxx xxxx xxxxx
 LOS by Move: * * * * * C * * * * *
 Movement: LT - LTR - RT
 Shared Cap.: xxxx xxxx xxxxx xxxx 54 xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
 SharedQueue:xxxxx xxxx xxxxx xxxxx 13.3 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
 Shrd ConDel:xxxxx xxxx xxxxx xxxxx 806 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
 Shared LOS: * * * * * F * * * * *
 ApproachDel: xxxxxx 806.0 xxxxxx xxxxxx
 ApproachLOS: * * * * * F * * * * *

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.940
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 36.9
Optimal Cycle: 108 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 12 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.995
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 38.0
Optimal Cycle: 150 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 12 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd
Cycle (sec): 75 Critical Vol./Cap.(X): 0.987
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 38.7
Optimal Cycle: 141 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of volume data including 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 1.015
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 48.4
Optimal Cycle: 162 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of volume data including 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.213
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.3
Optimal Cycle: 26 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0 0
Volume Module:
Base Vol: 0 82 0 0 93 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 82 0 0 93 0 0 0 0 0 0 0 0 0 0
Added Vol: 2 169 34 7 215 1 2 3 1 41 1 8
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 2 251 34 7 308 1 2 3 1 41 1 8
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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
PHF Volume: 2 281 38 8 345 1 2 3 1 46 1 9
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 2 281 38 8 345 1 2 3 1 46 1 9
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 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 1.00 1.00
FinalVolume: 2 281 38 8 345 1 2 3 1 46 1 9
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.54 1.00 0.85 0.58 1.00 0.85 0.76 0.96 0.96 0.77 0.87 0.87
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.75 0.25 1.00 0.11 0.89
Final Sat.: 1020 1900 1615 1104 1900 1615 1444 1372 457 1455 183 1464
Capacity Analysis Module:
Vol/Sat: 0.00 0.15 0.02 0.01 0.18 0.00 0.00 0.00 0.00 0.03 0.01 0.01
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.00 0.22 0.03 0.01 0.27 0.00 0.01 0.01 0.01 0.16 0.03 0.03
Delay/Veh: 2.6 3.1 2.6 2.6 3.2 2.6 16.0 16.1 16.1 16.8 16.1 16.1
User DelAdj: 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: 2.6 3.1 2.6 2.6 3.2 2.6 16.0 16.1 16.1 16.8 16.1 16.1
LOS by Move: A A A A A A B B B B B B
HCM2kAvgQ: 0 2 0 0 2 0 0 0 0 1 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[12.1]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1! 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 0 82 0 0 93 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 82 0 0 93 0 0 0 0 0 0 0 0 0 0
Added Vol: 8 201 0 0 254 3 4 0 6 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 283 0 0 347 3 4 0 6 0 0 0 0 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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
PHF Volume: 9 317 0 0 389 3 4 0 7 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 317 0 0 389 3 4 0 7 0 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 392 xxxx xxxxx xxxx xxxx xxxxx 725 725 390 729 727 317
Potent Cap.: 1178 xxxx xxxxx xxxx xxxx xxxxx 395 354 663 341 353 728
Move Cap.: 1178 xxxx xxxxx xxxx xxxx xxxxx 393 351 663 336 350 728
Volume/Cap: 0.01 xxxx xxxxx xxxx xxxx xxxxx 0.01 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 8.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 520 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 8.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 12.1 xxxxx xxxxx xxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxx xxxxxx 12.1 xxxxxx
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue
Cumulative Saturday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: C[15.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns representing different traffic movements and 10 rows of volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table with 12 columns and 2 rows: Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns and 4 rows: Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns and 10 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.630
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 116 318 39 77 210 138 123 973 63 145 951 98
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: 116 318 39 77 210 138 123 973 63 145 951 98
Added Vol: 13 10 5 0 9 0 0 0 12 4 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 129 328 44 77 219 138 123 973 75 149 951 98
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: 129 328 44 77 219 138 123 973 75 149 951 98
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 129 328 44 77 219 138 123 973 75 149 951 98
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
FinalVolume: 129 328 44 77 219 138 123 973 75 149 951 98
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.49 1.00 0.85 0.32 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.86 0.14 1.00 1.81 0.19
Final Sat.: 922 1900 1615 600 1900 1615 1805 3315 256 1805 3227 333
Capacity Analysis Module:
Vol/Sat: 0.14 0.17 0.03 0.13 0.12 0.09 0.07 0.29 0.29 0.08 0.29 0.29
Crit Moves: **** ****
Green/Cycle: 0.27 0.27 0.27 0.27 0.27 0.27 0.11 0.47 0.47 0.13 0.49 0.49
Volume/Cap: 0.51 0.63 0.10 0.47 0.42 0.31 0.61 0.63 0.63 0.63 0.61 0.61
Delay/Veh: 23.2 24.8 19.1 23.2 21.4 20.6 34.8 14.9 14.9 34.2 13.8 13.8
User DelAdj: 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: 23.2 24.8 19.1 23.2 21.4 20.6 34.8 14.9 14.9 34.2 13.8 13.8
LOS by Move: C C B C C C C B B C B B
HCM2k95thQ: 6 14 2 4 8 5 7 18 18 8 17 17
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.558
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.7
Optimal Cycle: 36 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Protected and Permitted.

Volume Module table with 12 columns and 15 rows showing traffic volume, growth, and delay factors for each approach.

Saturation Flow Module table with 12 columns and 5 rows showing saturation flow rates and adjustment factors.

Capacity Analysis Module table with 12 columns and 11 rows showing capacity, cycle times, and delay per vehicle.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.627
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 34 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Permitted.

Volume Module table with 12 columns and 15 rows showing traffic volume, growth, and delay factors for each approach.

Saturation Flow Module table with 12 columns and 5 rows showing saturation flow rates and adjustment factors.

Capacity Analysis Module table with 12 columns and 11 rows showing capacity, cycle times, and delay per vehicle.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 1.155
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 67.8
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and adjustment factors.

Saturation Flow Module table with 12 columns and 4 rows showing adjustment factors and saturation flow.

Capacity Analysis Module table with 12 columns and 14 rows showing capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.4 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, Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and adjustment factors.

Critical Gap Module table with 12 columns and 3 rows showing gap metrics.

Capacity Module table with 12 columns and 4 rows showing capacity and delay metrics.

Level of Service Module table with 12 columns and 10 rows showing LOS and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.911
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 64.1
Optimal Cycle: 90 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.958
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 116 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 1.067
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 52.0
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns for flow directions and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for flow directions and 4 rows for Adjustment, Lanes, Final Sat., and Final Volume.

Capacity Analysis Module table with 12 columns for flow directions and 12 rows for Vol/Sat, Crit Moves, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: C[18.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module table with 12 columns for flow directions and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module table with 12 columns for flow directions and 3 rows for Critical Gap, FollowUpTim, and Volume/Cap.

Capacity Module table with 12 columns for flow directions and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for flow directions and 12 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: C[20.0]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0)

Table with 12 columns: Volume Module, Count, Date (29 Mar 2005), Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume

Table with 12 columns: Critical Gap Module, Critical Gp, FollowUpTim

Table with 12 columns: Capacity Module, Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Table with 12 columns: Level Of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.558
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.0
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Permitted, Split Phase), Rights (Include), Lanes (0 0 0 1 0)

Table with 12 columns: Volume Module, Count, Date (29 Mar 2005), Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume

Table with 12 columns: Saturation Flow Module, Sat/Lane, Adjustment, Lanes, Final Sat.

Table with 12 columns: Capacity Analysis Module, Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: A[9.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0-0)

Volume Module:

Table with 12 columns for traffic volumes: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume

Critical Gap Module:

Table with 12 columns for critical gap and follow-up times: Critical Gp, FollowUpTim

Capacity Module:

Table with 12 columns for capacity: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level Of Service Module:

Table with 12 columns for level of service: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: A[9.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0)

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with 12 columns for traffic volumes: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume

Critical Gap Module:

Table with 12 columns for critical gap and follow-up times: Critical Gp, FollowUpTim

Capacity Module:

Table with 12 columns for capacity: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level Of Service Module:

Table with 12 columns for level of service: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.112
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 68.6
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Protected and Permitted.

Volume Module table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.604
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.7
Optimal Cycle: 44 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Permitted.

Volume Module table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.178
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 82.7
Optimal Cycle: 180 Level Of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Grid of traffic volume data for various movements.

Saturation Flow Module: Grid of saturation flow data for different lane configurations.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.823
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.8
Optimal Cycle: 66 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements. Grid of traffic volume data for various movements.

Saturation Flow Module: Grid of saturation flow data for different lane configurations.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: F[170.0]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types.

Volume Module table with 12 columns for volume components and 4 rows: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module table with 12 columns for gap components and 2 rows: Critical Gp, FollowUpTim.

Capacity Module table with 12 columns for capacity components and 4 rows: Cnflct Vol, Potent Cap, Move Cap, Volume/Cap.

Level of Service Module table with 12 columns for LOS components and 4 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 9.8 Worst Case Level Of Service: F[532.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types.

Volume Module table with 12 columns for volume components and 4 rows: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module table with 12 columns for gap components and 2 rows: Critical Gp, FollowUpTim.

Capacity Module table with 12 columns for capacity components and 4 rows: Cnflct Vol, Potent Cap, Move Cap, Volume/Cap.

Level of Service Module table with 12 columns for LOS components and 4 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.021
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 57.4
Optimal Cycle: 161 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 11 rows of adjustment factors (Growth, Initial, Added, Passer, Initial Fut, User, PHF, Reduct, Reduced, PCE, MLF, Final).

Saturation Flow Module:

Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and 11 rows for Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.839
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 25.9
Optimal Cycle: 71 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 11 rows of adjustment factors (Growth, Initial, Added, Passer, Initial Fut, User, PHF, Reduct, Reduced, PCE, MLF, Final).

Saturation Flow Module:

Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and 11 rows for Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.861
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.4
Optimal Cycle: 77 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and growth factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.009
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 48.2
Optimal Cycle: 154 Level of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and growth factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.497
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.7
Optimal Cycle: 26 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0 0 1 0 0
Volume Module:
Base Vol: 0 427 0 24 130 0 0 0 0 0 5 0 226
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: 0 427 0 24 130 0 0 0 0 0 5 0 226
Added Vol: 1 58 13 2 81 1 9 22 5 12 5 12
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 1 485 13 26 211 1 9 22 5 17 5 238
User Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
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: 1 524 14 28 228 1 10 24 5 18 5 257
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 1 524 14 28 228 1 10 24 5 18 5 257
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
FinalVolume: 1 524 14 28 228 1 10 24 5 18 5 257
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.60 1.00 0.85 0.36 1.00 0.85 0.49 0.97 0.97 0.74 0.85 0.85
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.81 0.19 1.00 0.02 0.98
Final Sat.: 1148 1900 1615 688 1900 1615 933 1505 342 1414 33 1587
Capacity Analysis Module:
Vol/Sat: 0.00 0.28 0.01 0.04 0.12 0.00 0.01 0.02 0.02 0.01 0.16 0.16
Crit Moves: ****
Green/Cycle: 0.55 0.55 0.55 0.55 0.55 0.55 0.33 0.33 0.33 0.33 0.33 0.33
Volume/Cap: 0.00 0.50 0.02 0.07 0.22 0.00 0.03 0.05 0.05 0.04 0.50 0.50
Delay/Veh: 5.0 7.2 5.0 5.3 5.7 5.0 11.5 11.6 11.6 11.6 14.3 14.3
User DelAdj: 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: 5.0 7.2 5.0 5.3 5.7 5.0 11.5 11.6 11.6 11.6 14.3 14.3
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 11 0 1 4 0 0 1 1 0 8 8
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.8]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1! 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 0 427 0 0 135 0 0 0 0 0 0 0 0 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 1.00
Initial Bse: 0 427 0 0 135 0 0 0 0 0 0 0 0 0 0 0
Added Vol: 3 66 0 0 97 1 6 0 10 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 3 493 0 0 232 1 6 0 10 0 0 0 0
User Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
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: 3 532 0 0 251 1 6 0 11 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 3 532 0 0 251 1 6 0 11 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 252 xxxx xxxxx xxxx xxxx xxxxx 790 790 251 795 791 532
Potent Cap.: 1326 xxxx xxxxx xxxx xxxx xxxxx 362 325 793 308 324 551
Move Cap.: 1326 xxxx xxxxx xxxx xxxx xxxxx 361 324 793 303 324 551
Volume/Cap: 0.00 xxxx xxxxx xxxx xxxx xxxxx 0.02 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A * * * * * * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 547 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 11.8 xxxxx xxxxx xxxx xxxxx
Shared LOS: A * * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 11.8 xxxxxx
ApproachLOS: * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 2.9 Worst Case Level Of Service: C[22.1]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module table with 12 columns and 12 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with 4 columns and 2 rows: Critical Gap, FollowUpTim.

Capacity Module table with 12 columns and 4 rows: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module table with 12 columns and 10 rows including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 5.2 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module table with 12 columns and 12 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

PCE Module table with 12 columns and 4 rows: AutoPCE, TruckPCE, ComboPCE, BicyclePCE, AdjVolume.

Delay Module table with 4 columns and 6 rows: CircVolume, MaxVolume, PedVolume, AdjMaxVol, ApproachVol, ApproachDel, Queue.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.399
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.1
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

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, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[22.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module table with 12 columns for Critical Gp, FollowUpTim.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[13.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns representing traffic movements and 10 rows of volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table with 12 columns and 2 rows: Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns and 4 rows: Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns and 10 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 1.006
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 44.2
Optimal Cycle: 150 Level of Service: D

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
-----|-----|-----|-----|
Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 78 316 71 238 597 36 239 790 116 101 1416 81
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: 78 316 71 238 597 36 239 790 116 101 1416 81
Added Vol: 23 17 8 0 22 0 0 0 30 10 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 101 333 79 238 619 36 239 790 146 111 1416 81
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: 101 333 79 238 619 36 239 790 146 111 1416 81
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 101 333 79 238 619 36 239 790 146 111 1416 81
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
FinalVolume: 101 333 79 238 619 36 239 790 146 111 1416 81
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.17 1.00 0.85 0.38 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.69 0.31 1.00 1.89 0.11
Final Sat.: 325 1900 1615 714 1900 1615 1805 2977 550 1805 3387 194
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.31 0.18 0.05 0.33 0.33 0.02 0.13 0.27 0.27 0.06 0.42 0.42
Crit Moves: **** *
Green/Cycle: 0.32 0.32 0.32 0.32 0.32 0.32 0.13 0.45 0.45 0.10 0.42 0.42
Volume/Cap: 0.96 0.54 0.15 1.03 1.01 0.07 1.01 0.59 0.59 0.63 1.01 1.01
Delay/Veh: 97.7 20.4 17.0 90.3 61.3 16.4 90.2 15.0 15.0 37.8 45.1 45.1
User DelAdj: 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: 97.7 20.4 17.0 90.3 61.3 16.4 90.2 15.0 15.0 37.8 45.1 45.1
LOS by Move: F C B F E B F B B D D D
HCM2k95thQ: 10 12 3 19 35 1 19 16 16 7 42 42

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 1.027
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 48.7
Optimal Cycle: 177 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for capacity and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.780
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 15.4
Optimal Cycle: 50 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for capacity and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 1.224
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 63.6
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow directions. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for directions. Rows include Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for directions. Rows include Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[10.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module data.

Table with 12 columns for traffic flow directions. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for directions. Rows include Critical Gap and FollowUpTim.

Capacity Module table with 12 columns for directions. Rows include Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for directions. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.981
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 86.3
Optimal Cycle: 128 Level Of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for different lane configurations.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.840
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.9
Optimal Cycle: 62 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for different lane configurations.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 1.118
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 61.5
Optimal Cycle: 0 Level Of Service: F

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
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: 69 105 10 37 624 12 11 19 95 10 20 14
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: 69 105 10 37 624 12 11 19 95 10 20 14
Added Vol: 0 130 0 0 159 0 0 0 1 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 69 235 10 37 783 12 11 19 96 10 20 14
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: 69 235 10 37 783 12 11 19 96 10 20 14
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 69 235 10 37 783 12 11 19 96 10 20 14
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
FinalVolume: 69 235 10 37 783 12 11 19 96 10 20 14

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: 0.22 0.75 0.03 0.04 0.95 0.01 0.09 0.15 0.76 0.23 0.45 0.32
Final Sat.: 146 498 21 33 701 11 51 88 444 120 239 167

Capacity Analysis Module:
Vol/Sat: 0.47 0.47 0.47 1.12 1.12 1.12 0.22 0.22 0.22 0.08 0.08 0.08
Crit Moves: ****
Delay/Veh: 12.9 12.9 12.9 90.3 90.3 90.3 10.5 10.5 10.5 10.0 10.0 10.0
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: 12.9 12.9 12.9 90.3 90.3 90.3 10.5 10.5 10.5 10.0 10.0 10.0
LOS by Move: B B F F B B B B
ApproachDel: 12.9 90.3 10.5 10.0
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 12.9 90.3 10.5 10.0
LOS by Appr: B F B B
AllWayAvgQ: 0.8 0.8 0.8 17.0 17.0 17.0 0.3 0.3 0.3 0.1 0.1 0.1

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: C[21.3]

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Volume Module:
Base Vol: 0 120 0 47 682 0 0 0 0 9 0 61
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: 0 120 0 47 682 0 0 0 0 9 0 61
Added Vol: 0 130 40 0 159 0 0 0 0 43 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 250 40 47 841 0 0 0 0 52 0 61
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: 0 250 40 47 841 0 0 0 0 52 0 61
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 250 40 47 841 0 0 0 0 52 0 61

Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 6.4 6.5 6.2
FollowUpTim:xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 3.5 4.0 3.3

Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 290 xxxxx xxxxxx xxxxx xxxxx xxxxxx 1205 1205 270
Potent Cap.: xxxxx xxxxx xxxxxx 1283 xxxxx xxxxxx xxxxx xxxxx xxxxxx 205 185 774
Move Cap.: xxxxx xxxxx xxxxxx 1283 xxxxx xxxxxx xxxxx xxxxx xxxxxx 199 178 774
Volume/Cap: xxxxx xxxxx xxxxxx 0.04 xxxxx xxxxxx xxxxx xxxxx xxxxxx 0.26 0.00 0.08

Level of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxxx xxxxx xxxxxx 7.9 xxxxx xxxxxx xxxxxx 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 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx 332 xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx 1.5 xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 7.9 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx 21.3 xxxxxx
Shared LOS: * * * A * * * * * * * * *
ApproachDel: xxxxxxx xxxxxxx xxxxxxx 21.3
ApproachLOS: * * *

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: C[18.9]

Table with 4 columns: Approach (North, South, East, West), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0, 1, 0, 0).

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and growth factors.

Critical Gap Module: Table with 12 columns for gap values and follow-up times.

Capacity Module: Table with 12 columns for conflict volume, potent capacity, and volume/capacity.

Level Of Service Module: Table with 12 columns for delay, LOS, movement, and approach delay.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.567
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.3
Optimal Cycle: 29 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West), Movement (L, T, R), Control (Permitted, Split Phase), Rights (Include), Lanes (0, 1, 0, 0).

Volume Module: Table with 12 columns for volume and growth factors.

Saturation Flow Module: Table with 12 columns for saturation flow and adjustment factors.

Capacity Analysis Module: Table with 12 columns for volume/saturation, critical moves, and delay factors.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 4.8 Worst Case Level Of Service: A[9.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0)

Volume Module: >> Count Date: 1 Sep 1997 <<. Table with 11 columns for volume counts and 11 rows for various metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS metrics and 11 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 5.0 Worst Case Level Of Service: A[8.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0)

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 11 columns for volume counts and 11 rows for various metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS metrics and 11 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.015
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 38.8
Optimal Cycle: 161 Level Of Service: D

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Protected and Permitted.

Volume Module table with 12 columns and 15 rows. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns and 5 rows. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 12 rows. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.705
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.3
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Permitted.

Volume Module table with 12 columns and 15 rows. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns and 5 rows. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 12 rows. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.137
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 67.7
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.920
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 41.8
Optimal Cycle: 94 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:except thru movements table with 12 columns for volume and 12 columns for various adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: F[105.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns (Count, Date, Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume) and 11 rows.

Critical Gap Module: Table with 11 columns (Critical Gp, FollowUpTim) and 11 rows.

Capacity Module: Table with 11 columns (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) and 11 rows.

Level Of Service Module: Table with 11 columns (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS) and 11 rows.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 62.3 Worst Case Level Of Service: F[1909.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns (Count, Date, Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume) and 11 rows.

Critical Gap Module: Table with 11 columns (Critical Gp, FollowUpTim) and 11 rows.

Capacity Module: Table with 11 columns (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) and 11 rows.

Level Of Service Module: Table with 11 columns (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS) and 11 rows.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.077
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 75.4
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.961
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 30.8
Optimal Cycle: 121 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.948
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 37.2
Optimal Cycle: 112 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.140
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 69.1
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.537
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.7
Optimal Cycle: 27 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0
Volume Module:
Base Vol: 0 106 0 154 537 0 0 0 0 18 0 14
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: 0 106 0 154 537 0 0 0 0 18 0 14
Added Vol: 4 165 22 4 196 3 2 9 1 30 15 3
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 4 271 22 158 733 3 2 9 1 48 15 17
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 5 317 26 185 858 4 2 11 1 56 18 20
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 5 317 26 185 858 4 2 11 1 56 18 20
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
FinalVolume: 5 317 26 185 858 4 2 11 1 56 18 20
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.22 1.00 0.85 0.56 1.00 0.85 0.74 0.99 0.99 0.76 0.92 0.92
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.90 0.10 1.00 0.47 0.53
Final Sat.: 426 1900 1615 1056 1900 1615 1402 1684 187 1442 819 929
Capacity Analysis Module:
Vol/Sat: 0.01 0.17 0.02 0.17 0.45 0.00 0.00 0.01 0.01 0.04 0.02 0.02
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.02 0.25 0.02 0.26 0.66 0.00 0.01 0.03 0.03 0.19 0.11 0.11
Delay/Veh: 2.6 3.2 2.6 3.3 6.0 2.6 16.0 16.1 16.1 17.0 16.5 16.5
User DelAdj: 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: 2.6 3.2 2.6 3.3 6.0 2.6 16.0 16.1 16.1 17.0 16.5 16.5
LOS by Move: A A A A A A B B B B B B
HCM2k95thQ: 0 4 0 3 17 0 0 0 0 2 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.1 Worst Case Level Of Service: C[18.2]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1! 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 0 106 0 0 555 0 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 106 0 0 555 0 0 0 0 0 0 0 0 0 0 0
Added Vol: 8 189 0 0 224 3 1 0 3 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 295 0 0 779 3 1 0 3 0 0 0 0 0 0 0
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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
PHF Volume: 9 345 0 0 911 4 1 0 4 0 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 345 0 0 911 4 1 0 4 0 0 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 915 xxxx xxxxx xxxx xxxx xxxxx 1277 1277 913 1279 1279 345
Potent Cap.: 754 xxxx xxxxx xxxx xxxx xxxxx 185 168 334 144 168 702
Move Cap.: 754 xxxx xxxxx xxxx xxxx xxxxx 184 166 334 141 165 702
Volume/Cap: 0.01 xxxx xxxxx xxxx xxxx xxxxx 0.01 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 9.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 277 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 9.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 18.2 xxxxx xxxxx xxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxx xxxxxx 18.2 xxxxxx
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 17.8 Worst Case Level Of Service: F[108.6]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 4 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level Of Service Computation Report

FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 11.4 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

PCE Module:

Table with 12 columns for PCE metrics and 5 rows for AutoPCE, TruckPCE, ComboPCE, BicyclePCE, AdjVolume.

Delay Module: >> Time Period: 0.25 hours <<

Table with 4 columns for delay metrics and 5 rows for CircVolume, MaxVolume, PedVolume, AdjMaxVol, etc.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 1.401
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 61.8
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and delay metrics.

Saturation Flow Module table with 12 columns and 6 rows showing saturation flow and adjustment factors.

Capacity Analysis Module table with 12 columns and 11 rows showing capacity, LOS, and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 13.4 Worst Case Level Of Service: F[155.9]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and delay metrics.

Critical Gap Module table with 12 columns and 3 rows showing critical gap and follow-up time.

Capacity Module table with 12 columns and 4 rows showing capacity and volume/capacity ratios.

Level of Service Module table with 12 columns and 10 rows showing LOS, delay, and queue metrics.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Option 3 10th-11th Avenue
 Cumulative PM Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: D[30.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module:

Base Vol:	51	432	0	0	699	25	6	0	55	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:	51	432	0	0	699	25	6	0	55	0	0	0
Added Vol:	0	24	0	0	37	43	40	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	456	0	0	736	68	46	0	55	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:	51	456	0	0	736	68	46	0	55	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	51	456	0	0	736	68	46	0	55	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	804	xxxx	xxxxx	xxxx	xxxx	xxxxx	1328	1328	770	xxxx	xxxx	xxxxx
Potent Cap.:	829	xxxx	xxxxx	xxxx	xxxx	xxxxx	173	157	404	xxxx	xxxx	xxxxx
Move Cap.:	829	xxxx	xxxxx	xxxx	xxxx	xxxxx	164	147	404	xxxx	xxxx	xxxxx
Volume/Cap:	0.06	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.28	0.00	0.14	xxxx	xxxx	xxxxx

Level Of Service Module:

2Way95thQ:	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	243	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.9	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	9.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	30.0	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	D	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			30.0		xxxxxxx			
ApproachLOS:	*			*			D		*			*

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.559
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.0
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 65 147 29 66 131 89 153 856 54 58 1033 90
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: 65 147 29 66 131 89 153 856 54 58 1033 90
Added Vol: 26 19 9 0 24 0 0 0 33 11 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 91 166 38 66 155 89 153 856 87 69 1033 90
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: 91 166 38 66 155 89 153 856 87 69 1033 90
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 91 166 38 66 155 89 153 856 87 69 1033 90
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
FinalVolume: 91 166 38 66 155 89 153 856 87 69 1033 90
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.50 1.00 0.85 0.47 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.82 0.18 1.00 1.84 0.16
Final Sat.: 950 1900 1615 891 1900 1615 1805 3231 328 1805 3281 286
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.10 0.09 0.02 0.07 0.08 0.06 0.08 0.26 0.26 0.04 0.31 0.31
Crit Moves: **** **
Green/Cycle: 0.16 0.16 0.16 0.16 0.16 0.16 0.15 0.60 0.60 0.12 0.56 0.56
Volume/Cap: 0.61 0.56 0.15 0.47 0.52 0.35 0.56 0.44 0.44 0.32 0.56 0.56
Delay/Veh: 34.9 29.7 25.8 29.4 28.8 27.2 30.1 7.9 7.9 29.1 10.1 10.1
User DelAdj: 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: 34.9 29.7 25.8 29.4 28.8 27.2 30.1 7.9 7.9 29.1 10.1 10.1
LOS by Move: C C C C C C C A A C B B
HCM2kAvgQ: 3 4 1 2 4 2 4 6 6 2 9 9

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.530
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.1
Optimal Cycle: 35 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.393
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.5
Optimal Cycle: 26 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for growth/initial/added/passers/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[10.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include, Include), Lanes (0 0 1 1 0, 0 1 0 0 0, 0 0 0 0 0, 0 0 0 0 1)

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume across four approaches.

Critical Gap Module table with columns for Critical Gap, FollowUpTim across four approaches.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap across four approaches.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS across four approaches.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.688
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.0
Optimal Cycle: 46 Level Of Service: C

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Split Phase, Split Phase, Split Phase, Split Phase), Rights (Include, Include, Ignore, Include), Lanes (0 1 1 0 0, 0 0 0 1 0, 1 0 0 0 1, 0 0 0 0 0)

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume across four approaches.

Sat/Lane table with columns for Sat/Lane, Adjustment, Lanes, Final Sat. across four approaches.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ across four approaches.

Table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ across four approaches.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy
Cycle (sec): 70 Critical Vol./Cap.(X): 0.515
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.5
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing traffic volume and delay metrics for each approach and movement.

Saturation Flow Module table showing saturation flow rates and adjustment factors.

Capacity Analysis Module table showing capacity, cycle times, and delay per vehicle.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.289
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.7
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing traffic volume and delay metrics for each approach and movement.

Saturation Flow Module table showing saturation flow rates and adjustment factors.

Capacity Analysis Module table showing capacity, cycle times, and delay per vehicle.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.714
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.5
Optimal Cycle: 49 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.476
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.618
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 47 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for different approaches and movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.837
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 29.7
Optimal Cycle: 69 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for different approaches and movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: E[40.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns for traffic volumes and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 43.0 Worst Case Level Of Service: F[944.6]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns for traffic volumes and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.941
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 37.0
Optimal Cycle: 109 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane and Adjustment, and 12 rows for Lanes and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, etc., and 12 rows for various capacity metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.995
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 38.0
Optimal Cycle: 150 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane and Adjustment, and 12 rows for Lanes and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, etc., and 12 rows for various capacity metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.987
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 38.7
Optimal Cycle: 141 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module table with 12 columns for saturation flow factors.

Capacity Analysis Module table with 12 columns for capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.015
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 48.4
Optimal Cycle: 162 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module table with 12 columns for saturation flow factors.

Capacity Analysis Module table with 12 columns for capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G

Cycle (sec): 50 Critical Vol./Cap.(X): 0.226
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.5
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns and 5 rows including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 13 rows including Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[12.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Volume Module table with 12 columns and 14 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns and 2 rows including Critical Gap and FollowUpTim.

Capacity Module table with 12 columns and 4 rows including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with 12 columns and 10 rows including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1
Cycle (sec): 70 Critical Vol./Cap.(X): 0.854
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 13.8
Optimal Cycle: 66 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Lanes: 1 0 1 0 0 0 0 1 0 1 0 0 1 0 0 0 0 0 0 0 0
Volume Module:
Base Vol: 13 113 0 0 146 0 0 0 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: 13 113 0 0 146 0 0 0 22 0 0 0
Added Vol: 311 296 0 0 232 41 56 0 88 0 0 0
PasserByVol: 170 38 0 0 38 0 0 0 57 0 0 0
Initial Fut: 494 447 0 0 416 41 56 0 167 0 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 553 501 0 0 466 46 63 0 187 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 553 501 0 0 466 46 63 0 187 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
FinalVolume: 553 501 0 0 466 46 63 0 187 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.46 1.00 1.00 1.00 1.00 0.85 0.89 1.00 0.89 1.00 1.00 1.00
Lanes: 1.00 1.00 0.00 0.00 1.00 1.00 0.25 0.00 0.75 0.00 0.00 0.00
Final Sat.: 874 1900 0 0 1900 1615 424 0 1264 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.63 0.26 0.00 0.00 0.25 0.03 0.15 0.00 0.15 0.00 0.00 0.00
Crit Moves: ****
Green/Cycle: 0.74 0.74 0.00 0.00 0.74 0.74 0.17 0.00 0.17 0.00 0.00 0.00
Volume/Cap: 0.85 0.36 0.00 0.00 0.33 0.04 0.85 0.00 0.85 0.00 0.00 0.00
Delay/Veh: 17.1 3.3 0.0 0.0 3.2 2.4 49.0 0.0 49.0 0.0 0.0 0.0
User DelAdj: 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: 17.1 3.3 0.0 0.0 3.2 2.4 49.0 0.0 49.0 0.0 0.0 0.0
LOS by Move: B A A A A A D A D A A A
HCM2kAvgQ: 12 4 0 0 4 0 8 0 8 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2
Average Delay (sec/veh): 4.7 Worst Case Level Of Service: E[36.3]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 113 0 0 146 0 0 0 0 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: 0 113 0 0 146 0 0 0 0 0 0 0
Added Vol: 35 275 42 0 208 106 60 0 29 35 0 0
PasserByVol: 19 0 19 0 0 0 0 0 19 19 0 0
Initial Fut: 54 388 61 0 354 106 60 0 48 54 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 60 435 68 0 396 119 67 0 54 60 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 60 435 68 0 396 119 67 0 54 60 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 7.1 6.5 6.2 7.1 xxxx xxxxx
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 xxxx xxxxx
Capacity Module:
Cnflct Vol: 515 xxxx xxxxx xxxx xxxx xxxxx 1046 1080 456 1072 xxxx xxxxx
Potent Cap.: 1061 xxxx xxxxx xxxx xxxx xxxxx 208 220 609 200 xxxx xxxxx
Move Cap.: 1061 xxxx xxxxx xxxx xxxx xxxxx 199 207 609 174 xxxx xxxxx
Volume/Cap: 0.06 xxxx xxxxx xxxx xxxx xxxxx 0.34 0.00 0.09 0.35 xxxx xxxxx
Level Of Service Module:
2Way95thQ: 0.2 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx 1.5 xxxx xxxxx
Control Del: 8.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx 36.3 xxxx xxxxx
LOS by Move: A * * * * * E * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 284 xxxxx xxxx xxxx xxxxx
SharedQueue:xxxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 2.0 xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 26.8 xxxxx xxxxx xxxx xxxxx
Shared LOS: * * * * * * D * * * *
ApproachDel: xxxxxxx xxxxxxx 26.8 36.3
ApproachLOS: * * D E
Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Option 3 10th-11th Avenue
 Cumulative Saturday Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 2.6 Worst Case Level Of Service: C[16.3]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module:

Base Vol:	95	294	0	0	257	20	9	0	36	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:	95	294	0	0	257	20	9	0	36	0	0	0
Added Vol:	0	28	0	0	37	52	44	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	322	0	0	294	72	53	0	36	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:	95	322	0	0	294	72	53	0	36	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	95	322	0	0	294	72	53	0	36	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	366	xxxx	xxxxx	xxxx	xxxx	xxxxx	842	842	330	xxxx	xxxx	xxxxx
Potent Cap.:	1204	xxxx	xxxxx	xxxx	xxxx	xxxxx	337	303	716	xxxx	xxxx	xxxxx
Move Cap.:	1204	xxxx	xxxxx	xxxx	xxxx	xxxxx	316	278	716	xxxx	xxxx	xxxxx
Volume/Cap:	0.08	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.17	0.00	0.05	xxxx	xxxx	xxxxx

Level Of Service Module:

2Way95thQ:	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	408	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.8	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	16.3	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			16.3			xxxxxx		
ApproachLOS:	*			*			C			*		

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.629
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 116 318 39 77 210 138 123 973 63 145 951 98
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: 116 318 39 77 210 138 123 973 63 145 951 98
Added Vol: 17 12 6 0 6 0 0 0 8 3 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 133 330 45 77 216 138 123 973 71 148 951 98
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: 133 330 45 77 216 138 123 973 71 148 951 98
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 133 330 45 77 216 138 123 973 71 148 951 98
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
FinalVolume: 133 330 45 77 216 138 123 973 71 148 951 98
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.49 1.00 0.85 0.32 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.86 0.14 1.00 1.81 0.19
Final Sat.: 933 1900 1615 600 1900 1615 1805 3331 243 1805 3227 333
Capacity Analysis Module:
Vol/Sat: 0.14 0.17 0.03 0.13 0.11 0.09 0.07 0.29 0.29 0.08 0.29 0.29
Crit Moves: ****
Green/Cycle: 0.28 0.28 0.28 0.28 0.28 0.28 0.11 0.46 0.46 0.13 0.48 0.48
Volume/Cap: 0.52 0.63 0.10 0.46 0.41 0.31 0.61 0.63 0.63 0.63 0.61 0.61
Delay/Veh: 23.2 24.6 19.0 23.1 21.2 20.4 35.0 14.9 14.9 34.2 13.9 13.9
User DelAdj: 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: 23.2 24.6 19.0 23.1 21.2 20.4 35.0 14.9 14.9 34.2 13.9 13.9
LOS by Move: C C B C C C C B B C B B
HCM2kAvgQ: 3 7 1 2 4 3 4 10 10 4 9 9
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.868
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 34.0
Optimal Cycle: 74 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.628
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 34 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 1.160
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 69.3
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module table with 12 columns and 4 rows including Adjustment, Lanes, Final Sat., and Final Sat. values.

Capacity Analysis Module table with 12 columns and 14 rows including Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th AV

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: B[15.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Volume Module table with 12 columns and 14 rows including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with 12 columns and 3 rows including Critical Gap, FollowUpTim, and Critical Gap values.

Capacity Module table with 12 columns and 5 rows including Cnflct Vol, Potent Cap., Move Cap., Volume/Cap., and Volume/Cap. values.

Level of Service Module table with 12 columns and 10 rows including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.905
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 63.9
Optimal Cycle: 88 Level of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Grid of traffic volume and adjustment factors for various approaches and movements.

Saturation Flow Module: Grid showing saturation flow rates and adjustment factors for different lane configurations.

Capacity Analysis Module: Grid showing capacity analysis metrics such as Vol/Sat, Crit Moves, Green/Cycle, and Delay/Veh.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.955
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 20.1
Optimal Cycle: 114 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Grid of traffic volume and adjustment factors for various approaches and movements.

Saturation Flow Module: Grid showing saturation flow rates and adjustment factors for different lane configurations.

Capacity Analysis Module: Grid showing capacity analysis metrics such as Vol/Sat, Crit Moves, Green/Cycle, and Delay/Veh.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 1.067
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 52.8
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic flow and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for flow and 4 rows for Adjustment, Lanes, Final Sat., and Final Volume.

Capacity Analysis Module table with 12 columns for flow and 12 rows for Vol/Sat, Crit Moves, Delay/Veh, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: C[17.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module table with 12 columns for traffic flow and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module table with 12 columns for flow and 2 rows for Critical Gap and FollowUpTim.

Capacity Module table with 12 columns for flow and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for flow and 12 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy
Average Delay (sec/veh): 2.8 Worst Case Level Of Service: C[20.4]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 613 13 53 144 0 0 0 0 6 0 68
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: 0 613 13 53 144 0 0 0 0 6 0 68
Added Vol: 1 0 1 0 0 0 0 39 8 0 15 0
Diverted Tr: -427 0 0 0 0 0 0 0 -130 -5 5 0
Initial Fut: -426 613 14 53 144 0 0 39 -122 1 20 68
User Adj: 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 0 613 14 53 144 0 0 39 0 1 20 68
Reduct Vol: 0 0 0 0 0 0 0 0 0 5 0 0
FinalVolume: 0 613 14 53 144 0 0 39 0 0 20 68
Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx 6.5 6.2 7.1 6.5 6.2
FollowUpTim:xxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 627 xxxxx xxxxxx xxxxx 877 144 890 870 620
Potent Cap.: xxxxx xxxxx xxxxxx 965 xxxxx xxxxxx xxxxx 289 909 266 292 492
Move Cap.: xxxxx xxxxx xxxxxx 965 xxxxx xxxxxx xxxxx 273 909 227 275 492
Volume/Cap: xxxxx xxxxx xxxxxx 0.05 xxxxx xxxxxx xxxxx 0.14 0.00 0.00 0.07 0.14
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxx xxxxx xxxxxx 8.9 xxxxx xxxxxx xxxxxx 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 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 273 xxxxx 417 xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxxx xxxxx 0.5 xxxxxx 0.8 xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 8.9 xxxxx xxxxxx xxxxxx xxxxx 20.4 xxxxxx 15.9 xxxxxx
Shared LOS: * * * A * * * * * C * C *
ApproachDel: xxxxxx xxxxxx 20.4 15.9
ApproachLOS: * * C C
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.560
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.0
Optimal Cycle: 28 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 10 0 0 10 0 0 0 0 0 4 0 10
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 637 163 25 229 0 0 0 0 43 0 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: 0 637 163 25 229 0 0 0 0 43 0 29
Added Vol: 0 36 0 0 21 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 673 163 25 250 0 0 0 0 43 0 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: 0 673 163 25 250 0 0 0 0 43 0 29
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 673 163 25 250 0 0 0 0 43 0 29
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
FinalVolume: 0 673 163 25 250 0 0 0 0 43 0 29
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.97 0.97 0.92 0.92 1.00 1.00 1.00 1.00 0.92 1.00 0.92
Lanes: 0.00 0.81 0.19 0.09 0.91 0.00 0.00 0.00 0.00 0.60 0.00 0.40
Final Sat.: 0 1490 361 159 1593 0 0 0 0 1042 0 703
Capacity Analysis Module:
Vol/Sat: 0.00 0.45 0.45 0.16 0.16 0.00 0.00 0.00 0.00 0.04 0.00 0.04
Crit Moves: ****
Green/Cycle: 0.00 0.68 0.68 0.68 0.68 0.00 0.00 0.00 0.00 0.20 0.00 0.20
Volume/Cap: 0.00 0.66 0.66 0.23 0.23 0.00 0.00 0.00 0.00 0.21 0.00 0.21
Delay/Veh: 0.0 6.0 6.0 3.1 3.1 0.0 0.0 0.0 0.0 17.0 0.0 17.0
User DelAdj: 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 6.0 6.0 3.1 3.1 0.0 0.0 0.0 0.0 17.0 0.0 17.0
LOS by Move: A A A A A A A A A B A B
HCM2kAvgQ: 0 9 9 2 2 0 0 0 0 1 0 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 2.3 Worst Case Level Of Service: A[9.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 3 columns for gap metrics and 3 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 3 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 6 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: A[9.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with 12 columns for traffic volumes and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 3 columns for gap metrics and 3 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 3 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 6 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 1.112
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 68.7
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Protected and Permitted.

Volume Module table with 12 columns and 15 rows. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns and 5 rows. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 12 rows. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.591
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 44 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Permitted.

Volume Module table with 12 columns and 15 rows. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns and 5 rows. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 12 rows. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.166
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 79.5
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Grid of traffic volume data for various movements.

Saturation Flow Module: Grid of saturation flow data for different lane configurations.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.928
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 21.0
Optimal Cycle: 97 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements. Grid of traffic volume data for various movements.

Saturation Flow Module: Grid of saturation flow data for different lane configurations.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 4.9 Worst Case Level Of Service: F[358.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module: Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: E[36.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module: Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.004
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 54.2
Optimal Cycle: 145 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors (Growth, Initial, Added, Passer, Initial Fut, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.829
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 25.4
Optimal Cycle: 69 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors (Growth, Initial, Added, Passer, Initial Fut, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.854
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.9
Optimal Cycle: 75 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 rows for various metrics like Base Vol, Growth Adj, 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, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.002
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 46.7
Optimal Cycle: 147 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 rows for various metrics like Base Vol, Growth Adj, 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, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G

Cycle (sec): 50 Critical Vol./Cap.(X): 0.498
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.7
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[11.5]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for Critical Gap, FollowUpTim, and Capacity Module.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: C[15.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 4.8 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

PCE Module:

Table with 12 columns for PCE metrics and 5 rows for AutoPCE, TruckPCE, ComboPCE, BicyclePCE, AdjVolume.

Delay Module: >> Time Period: 0.25 hours <<

Table with 4 columns for delay metrics and 5 rows for CircVolume, MaxVolume, PedVolume, AdjMaxVol, etc.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: B[11.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: C[20.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative A
 Cumulative AM Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 1.2 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:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module:

Base Vol:	37	704	0	0	259	13	7	0	48	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:	37	704	0	0	259	13	7	0	48	0	0	0
Added Vol:	0	19	0	0	7	14	16	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	723	0	0	266	27	23	0	48	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:	37	723	0	0	266	27	23	0	48	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	37	723	0	0	266	27	23	0	48	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	293	xxxx	xxxxx	xxxx	xxxx	xxxxx	1077	1077	280	xxxx	xxxx	xxxxx
Potent Cap.:	1280	xxxx	xxxxx	xxxx	xxxx	xxxxx	245	221	764	xxxx	xxxx	xxxxx
Move Cap.:	1280	xxxx	xxxxx	xxxx	xxxx	xxxxx	239	214	764	xxxx	xxxx	xxxxx
Volume/Cap:	0.03	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.10	0.00	0.06	xxxx	xxxx	xxxxx

Level Of Service Module:

2Way95thQ:	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	447	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	14.6	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			14.6			xxxxxxx		
ApproachLOS:	*			*			B			*		

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 1.012
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 43.2
Optimal Cycle: 157 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 78 316 71 238 597 36 239 790 116 101 1416 81
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: 78 316 71 238 597 36 239 790 116 101 1416 81
Added Vol: 16 11 5 0 16 0 0 0 22 7 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 94 327 76 238 613 36 239 790 138 108 1416 81
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: 94 327 76 238 613 36 239 790 138 108 1416 81
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 94 327 76 238 613 36 239 790 138 108 1416 81
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
FinalVolume: 94 327 76 238 613 36 239 790 138 108 1416 81
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.17 1.00 0.85 0.38 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.70 0.30 1.00 1.89 0.11
Final Sat.: 331 1900 1615 718 1900 1615 1805 3006 525 1805 3387 194
Capacity Analysis Module:
Vol/Sat: 0.28 0.17 0.05 0.33 0.32 0.02 0.13 0.26 0.26 0.06 0.42 0.42
Crit Moves: ****
Green/Cycle: 0.33 0.33 0.33 0.33 0.33 0.33 0.13 0.45 0.45 0.09 0.41 0.41
Volume/Cap: 0.87 0.53 0.14 1.01 0.99 0.07 1.01 0.58 0.58 0.64 1.01 1.01
Delay/Veh: 70.0 20.0 16.7 85.3 55.6 16.2 92.1 14.9 14.9 38.2 46.9 46.9
User DelAdj: 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: 70.0 20.0 16.7 85.3 55.6 16.2 92.1 14.9 14.9 38.2 46.9 46.9
LOS by Move: E B B F E B F B B D D D
HCM2kAvgQ: 4 6 1 10 20 1 10 8 8 3 26 26
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 1.176
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 106.6
Optimal Cycle: 180 Level of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.767
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 15.0
Optimal Cycle: 48 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 1.171
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 55.4
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Table with 12 columns representing traffic flow directions. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Table with 12 columns representing traffic flow directions. Rows include Saturation Flow Module, Adjustment, Lanes, and Final Sat.

Table with 12 columns representing traffic flow directions. Rows include Capacity Analysis Module, Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th AV

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B[10.6]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns representing traffic flow directions. Rows include Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Table with 12 columns representing traffic flow directions. Rows include Critical Gap Module, Critical Gp, and FollowUpTim.

Table with 12 columns representing traffic flow directions. Rows include Capacity Module, Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Table with 12 columns representing traffic flow directions. Rows include Level of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.965
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 85.2
Optimal Cycle: 117 Level of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.836
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 61 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 1.019
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 41.8
Optimal Cycle: 0 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic flows and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for traffic flows and 4 rows for adjustment factors and final saturation.

Capacity Analysis Module table with 12 columns for traffic flows and 12 rows for delay, LOS, and approach delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: C[16.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module table with 12 columns for traffic flows and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module table with 12 columns for traffic flows and 2 rows for critical gap and follow-up time.

Capacity Module table with 12 columns for traffic flows and 4 rows for conflict volume, potential capacity, and move capacity.

Level of Service Module table with 12 columns for traffic flows and 12 rows for delay, LOS, and approach delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy
Average Delay (sec/veh): 2.4 Worst Case Level Of Service: C[18.3]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 114 17 43 629 0 0 0 0 20 0 19
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: 0 114 17 43 629 0 0 0 0 20 0 19
Added Vol: 1 0 0 0 0 0 0 21 5 0 42 0
Diverted Tr: -106 0 0 0 0 0 0 0 -537 -18 18 0
Initial Fut: -105 114 17 43 629 0 0 21 -532 2 60 19
User Adj: 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 0 114 17 43 629 0 0 21 0 2 60 19
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 114 17 43 629 0 0 21 0 2 60 19
Critical Gap Module:
Critical Gap:xxxxx xxxx xxxxx 4.1 xxxxx xxxxxx xxxxxx 6.5 6.2 7.1 6.5 6.2
FollowUpTim:xxxxx xxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 131 xxxxx xxxxxx xxxxx 846 629 848 838 123
Potent Cap.: xxxxx xxxxx xxxxxx 1467 xxxxx xxxxxx xxxxx 301 486 284 305 934
Move Cap.: xxxxx xxxxx xxxxxx 1467 xxxxx xxxxxx xxxxx 292 486 262 296 934
Volume/Cap: xxxxx xxxxx xxxxxx 0.03 xxxxx xxxxxx xxxxx 0.07 0.00 0.01 0.20 0.02
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxx xxxxx xxxxxx 7.5 xxxxx xxxxxx xxxxxx 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 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 292 xxxxx 351 xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxxx xxxxx 0.2 xxxxxx 0.9 xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 7.5 xxxxx xxxxxx xxxxxx xxxxx 18.3 xxxxxx 18.3 xxxxxx
Shared LOS: * * * A * * * * * C * C *
ApproachDel: xxxxxx xxxxxx 18.3 xxxxxx 18.3
ApproachLOS: * * C C
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.550
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.3
Optimal Cycle: 28 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 10 0 0 10 0 0 0 0 4 0 10
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 0 0 1! 0 0
Volume Module:
Base Vol: 0 370 70 41 602 0 0 0 0 122 0 59
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: 0 370 70 41 602 0 0 0 0 122 0 59
Added Vol: 0 39 0 0 52 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 409 70 41 654 0 0 0 0 122 0 59
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: 0 409 70 41 654 0 0 0 0 122 0 59
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 409 70 41 654 0 0 0 0 122 0 59
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
FinalVolume: 0 409 70 41 654 0 0 0 0 122 0 59
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.98 0.98 0.96 0.96 1.00 1.00 1.00 1.00 0.92 1.00 0.92
Lanes: 0.00 0.85 0.15 0.06 0.94 0.00 0.00 0.00 0.00 0.67 0.00 0.33
Final Sat.: 0 1590 272 108 1718 0 0 0 0 1184 0 573
Capacity Analysis Module:
Vol/Sat: 0.00 0.26 0.26 0.38 0.38 0.00 0.00 0.00 0.00 0.10 0.00 0.10
Crit Moves: ****
Green/Cycle: 0.00 0.68 0.68 0.68 0.68 0.00 0.00 0.00 0.00 0.20 0.00 0.20
Volume/Cap: 0.00 0.38 0.38 0.56 0.56 0.00 0.00 0.00 0.00 0.52 0.00 0.52
Delay/Veh: 0.0 3.6 3.6 4.7 4.7 0.0 0.0 0.0 0.0 19.2 0.0 19.2
User DelAdj: 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 3.6 3.6 4.7 4.7 0.0 0.0 0.0 0.0 19.2 0.0 19.2
LOS by Move: A A A A A A A A A B A B
HCM2kAvgQ: 0 3 3 6 6 0 0 0 0 3 0 3
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 3.7 Worst Case Level Of Service: A[8.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0)

Volume Module: >> Count Date: 1 Sep 1997 <<
Base Vol: 0 130 3 44 586 0 0 0 0 6 0 10
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

Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 6.4 6.5 6.2
FollowUpTim:xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 3.5 4.0 3.3

Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 28 xxxxx xxxxxx xxxxx xxxxx xxxxxx 151 151 27
Potent Cap.: xxxxx xxxxx xxxxxx 1599 xxxxx xxxxxx xxxxx xxxxx xxxxxx 846 745 1055

Level of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxxx xxxxx xxxxxx 7.3 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 5.0 Worst Case Level Of Service: A[8.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0)

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 128 2 74 588 0 0 0 0 4 0 39
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

Critical Gap Module:
Critical Gp:xxxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 6.4 6.5 6.2
FollowUpTim:xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 3.5 4.0 3.3

Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 27 xxxxx xxxxxx xxxxx xxxxx xxxxxx 212 212 26
Potent Cap.: xxxxx xxxxx xxxxxx 1600 xxxxx xxxxxx xxxxx xxxxx xxxxxx 781 689 1056

Level of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxxx xxxxx xxxxxx 7.4 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.001
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 36.6
Optimal Cycle: 146 Level of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic movements and 12 rows of volume and adjustment factors.

Saturation Flow Module table with 12 columns for movements and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for movements and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.687
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.9
Optimal Cycle: 44 Level of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic movements and 12 rows of volume and adjustment factors.

Saturation Flow Module table with 12 columns for movements and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for movements and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.089
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 57.4
Optimal Cycle: 180 Level of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 1.066
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 46.5
Optimal Cycle: 180 Level of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:except thru movements. Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: F[158.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 10 columns (Count, Date, 29 Mar 2005, <<) and 10 rows (Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume).

Critical Gap Module:

Table with 10 columns (Critical Gp, FollowUpTim) and 3 rows of data.

Capacity Module:

Table with 10 columns (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) and 3 rows of data.

Level Of Service Module:

Table with 10 columns (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS) and 3 rows of data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 37.1 Worst Case Level Of Service: F[1085.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 10 columns (Count, Date, 29 Mar 2005, <<) and 10 rows (Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume).

Critical Gap Module:

Table with 10 columns (Critical Gp, FollowUpTim) and 3 rows of data.

Capacity Module:

Table with 10 columns (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap) and 3 rows of data.

Level Of Service Module:

Table with 10 columns (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS) and 3 rows of data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.033
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 60.8
Optimal Cycle: 172 Level of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various adjustment factors like Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.913
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 26.4
Optimal Cycle: 95 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various adjustment factors like Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.915
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 31.1
Optimal Cycle: 96 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for capacity. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.129
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 66.8
Optimal Cycle: 180 Level of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for capacity. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.496
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.5
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 0 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0 1 0
Volume Module:
Base Vol: 0 106 0 154 537 0 0 0 0 18 0 14
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: 0 106 0 154 537 0 0 0 0 18 0 14
Added Vol: 8 100 8 1 125 6 7 16 8 13 29 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 206 8 155 662 6 7 16 8 31 29 15
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 9 241 9 181 775 7 8 19 9 36 34 18
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 9 241 9 181 775 7 8 19 9 36 34 18
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
FinalVolume: 9 241 9 181 775 7 8 19 9 36 34 18
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.27 1.00 0.85 0.60 1.00 0.85 0.73 0.95 0.95 0.75 0.95 0.95
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.67 0.33 1.00 0.66 0.34
Final Sat.: 509 1900 1615 1144 1900 1615 1379 1203 602 1416 1188 615
Capacity Analysis Module:
Vol/Sat: 0.02 0.13 0.01 0.16 0.41 0.00 0.01 0.02 0.02 0.03 0.03 0.03
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.03 0.19 0.01 0.23 0.60 0.01 0.03 0.08 0.08 0.13 0.14 0.14
Delay/Veh: 2.6 3.0 2.6 3.2 5.1 2.6 16.1 16.3 16.3 16.6 16.7 16.7
User DelAdj: 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: 2.6 3.0 2.6 3.2 5.1 2.6 16.1 16.3 16.3 16.6 16.7 16.7
LOS by Move: A A A A A A B B B B B B
HCM2kAvgQ: 0 1 0 1 7 0 0 0 0 1 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.3 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: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0
Volume Module:
Base Vol: 0 106 0 0 555 0 0 0 0 0 0 0 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 1.00
Initial Bse: 0 106 0 0 555 0 0 0 0 0 0 0 0 0 0
Added Vol: 11 121 0 0 141 4 3 0 6 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 11 227 0 0 696 4 3 0 6 0 0 0 0
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 13 266 0 0 814 5 4 0 7 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 13 266 0 0 814 5 4 0 7 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 819 xxxxx xxxxx xxxxx xxxxx xxxxx 1108 1108 817 1112 1110 266
Potent Cap.: 818 xxxxx xxxxx xxxxx xxxxx xxxxx 234 212 380 188 211 778
Move Cap.: 818 xxxxx xxxxx xxxxx xxxxx xxxxx 232 208 380 182 208 778
Volume/Cap: 0.02 xxxxx xxxxx xxxxx xxxxx xxxxx 0.02 0.00 0.02 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: 9.5 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: A * * * * * * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 313 xxxxx xxxxx 0 xxxxx
SharedQueue: 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 9.5 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 16.9 xxxxx xxxxx xxxxx xxxxx
Shared LOS: A * * * * * * * * * * * * * * * *
ApproachDel: xxxxxxx xxxxxxx 16.9 xxxxxxx
ApproachLOS: * * * * * * * * * * * * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3
Average Delay (sec/veh): 2.2 Worst Case Level Of Service: C[24.1]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
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: 0 106 0 0 555 0 0 0 0 0 0 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 1.00
Initial Bse: 0 106 0 0 555 0 0 0 0 0 0 0 0 0
Added Vol: 35 98 13 22 89 35 20 0 25 7 0 0 17
PasserByVol: 10 0 0 0 0 0 0 0 10 0 0 0 0
Initial Fut: 45 204 13 22 644 35 20 0 35 7 0 17
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 53 239 15 26 753 41 23 0 41 8 0 20
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 53 239 15 26 753 41 23 0 41 8 0 20
Critical Gap Module:
Critical Gap: 4.1 xxxxx xxxxxx 4.1 xxxxx xxxxxx 7.1 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxxx xxxxxx 2.2 xxxxx xxxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Conflict Vol: 794 xxxxx xxxxxx 254 xxxxx xxxxxx 1187 1185 774 1197 1197 246
Potent Cap.: 836 xxxxx xxxxxx 1323 xxxxx xxxxxx 167 191 402 164 187 797
Move Cap.: 836 xxxxx xxxxxx 1323 xxxxx xxxxxx 152 175 402 138 172 797
Volume/Cap: 0.06 xxxxx xxxxx 0.02 xxxxx xxxxx 0.15 0.00 0.10 0.06 0.00 0.02
Level Of Service Module:
2Way95thQ: 0.2 xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del: 9.6 xxxxx xxxxxx 7.8 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
LOS by Move: A * * A * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx 252 xxxxxx xxxxx 333 xxxxxx
SharedQueue: xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx 1.0 xxxxxx xxxxxx 0.3 xxxxxx
Shrd ConDel: xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx 24.1 xxxxxx xxxxxx 16.8 xxxxxx
Shared LOS: *
ApproachDel: xxxxxx xxxxxx 24.1 xxxxxx 16.8
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C
Average Delay (sec/veh): 7.8 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: Yield Sign Yield Sign Yield Sign Yield Sign
Lanes: 1 1 1 1
Volume Module:
Base Vol: 23 106 0 0 555 0 0 0 32 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: 23 106 0 0 555 0 0 0 32 0 0 0
Added Vol: 22 147 0 0 121 0 0 0 8 0 0 0
PasserByVol: 0 10 0 0 10 0 0 0 0 0 0 0
Initial Fut: 45 263 0 0 686 0 0 0 40 0 0 0
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 53 308 0 0 803 0 0 0 47 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 53 308 0 0 803 0 0 0 47 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
FinalVolume: 53 308 0 0 803 0 0 0 47 0 0 0
PCE Module:
AutoPCE: 53 308 0 0 803 0 0 0 47 0 0 0
TruckPCE: 0 0 0 0 0 0 0 0 0 0 0 0
ComboPCE: 0 0 0 0 0 0 0 0 0 0 0 0
BicyclePCE: 0 0 0 0 0 0 0 0 0 0 0 0
AdjVolume: 53 308 0 0 803 0 0 0 47 0 0 0
Delay Module: >> Time Period: 0.25 hours <<
CircVolume: 0 53 803 360
MaxVolume: 1200 1172 767 xxxxxx
PedVolume: 0 0 0 0
AdjMaxVol: 1200 1172 767 xxxxxx
ApproachVol: 360 803 47 xxxxxx
ApproachDel: 4.3 9.5 5.0 xxxxxx
Queue: 1.3 5.8 0.2 xxxxx

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 7.5 Worst Case Level Of Service: F[62.5]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (1 0 2 0 0, 0 0 1 0 1, 0 0 1 0 0, 0 0 0 0 0)

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 3.9 Worst Case Level Of Service: F[50.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0, 0 0 0 1 0, 0 0 1 0 0, 1 0 0 0 0)

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative A
 Cumulative PM Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: C[24.7]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module:

Base Vol:	51	432	0	0	699	25	6	0	55	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:	51	432	0	0	699	25	6	0	55	0	0	0
Added Vol:	0	12	0	0	19	33	28	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	444	0	0	718	58	34	0	55	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:	51	444	0	0	718	58	34	0	55	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	51	444	0	0	718	58	34	0	55	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	776	xxxx	xxxxx	xxxx	xxxx	xxxxx	1293	1293	747	xxxx	xxxx	xxxxx
Potent Cap.:	849	xxxx	xxxxx	xxxx	xxxx	xxxxx	181	164	416	xxxx	xxxx	xxxxx
Move Cap.:	849	xxxx	xxxxx	xxxx	xxxx	xxxxx	173	154	416	xxxx	xxxx	xxxxx
Volume/Cap:	0.06	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.20	0.00	0.13	xxxx	xxxx	xxxxx

Level Of Service Module:

2Way95thQ:	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	271	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.4	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	9.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	24.7	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	C	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			24.7			xxxxxx		
ApproachLOS:	*			*			C			*		

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Reduced Commercial - Alternative A
 Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

Curtis Park Village
 Reduced Commercial - Alternative A
 Cumulative Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #1 24th St / Broadway

 Cycle (sec): 70 Critical Vol./Cap.(X): 0.555
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.6
 Optimal Cycle: 43 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:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	20	20	4	20	20
Lanes:	1	0	1	0	1	0	1	0	1	1	0	1

Volume Module: >> Count Date: 2 Apr 2005 <<
 Base Vol: 65 147 29 66 131 89 153 856 54 58 1033 90
 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: 65 147 29 66 131 89 153 856 54 58 1033 90
 Added Vol: 18 13 6 0 15 0 0 0 21 7 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 83 160 35 66 146 89 153 856 75 65 1033 90
 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: 83 160 35 66 146 89 153 856 75 65 1033 90
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 83 160 35 66 146 89 153 856 75 65 1033 90
 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
 FinalVolume: 83 160 35 66 146 89 153 856 75 65 1033 90

 Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.52	1.00	0.85	0.48	1.00	0.85	0.95	0.94	0.94	0.95	0.94	0.94
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.84	0.16	1.00	1.84	0.16
Final Sat.:	986	1900	1615	910	1900	1615	1805	3279	287	1805	3281	286

Capacity Analysis Module:
 Vol/Sat: 0.08 0.08 0.02 0.07 0.08 0.06 0.08 0.26 0.26 0.04 0.31 0.31
 Crit Moves: ****
 Green/Cycle: 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.60 0.60 0.12 0.57 0.57
 Volume/Cap: 0.55 0.56 0.14 0.48 0.51 0.36 0.56 0.44 0.44 0.30 0.56 0.56
 Delay/Veh: 32.0 29.9 26.0 29.8 28.8 27.6 29.9 7.7 7.7 28.9 9.9 9.9
 User DelAdj: 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: 32.0 29.9 26.0 29.8 28.8 27.6 29.9 7.7 7.7 28.9 9.9 9.9
 LOS by Move: C C C C C C C A A C A A
 HCM2kAvgQ: 3 4 1 2 4 2 4 6 6 2 8 8

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.649
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 21.0
Optimal Cycle: 40 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.365
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.2
Optimal Cycle: 26 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av
Average Delay (sec/veh): 1.2 Worst Case Level Of Service: B[10.7]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 1 0 0 0 0 0 0 0 0 0 1
Volume Module:
Base Vol: 0 536 83 33 443 0 0 0 0 0 0 0 63
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: 0 536 83 33 443 0 0 0 0 0 0 0 63
Added Vol: 0 0 37 30 3 0 0 0 0 0 0 0 20
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 536 120 63 446 0 0 0 0 0 0 0 83
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: 0 536 120 63 446 0 0 0 0 0 0 0 83
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 536 120 63 446 0 0 0 0 0 0 0 83
Critical Gap Module:
Critical Gap:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 6.2
FollowUpTim:xxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 3.3
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 656 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 328
Potent Cap.: xxxxx xxxxx xxxxxx 941 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 718
Move Cap.: xxxxx xxxxx xxxxxx 941 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 718
Volume/Cap: xxxxx xxxxx xxxxx 0.07 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.12
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.4
Control Del:xxxxx xxxxx xxxxxx 9.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 10.7
LOS by Move: * * * A * * * * * * * * * B
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 9.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: * * * A * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx 10.7
ApproachLOS: * * * * * B
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St
Cycle (sec): 70 Critical Vol./Cap.(X): 0.668
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.7
Optimal Cycle: 45 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: Split Phase Split Phase Split Phase Split Phase
Rights: Include Include Ignore Include
Min. Green: 10 10 0 0 10 10 10 0 0 10 0 0 0 0
Lanes: 0 1 1 0 0 0 0 0 1 0 1 0 0 0 0 0
Volume Module:
Base Vol: 310 588 0 0 496 29 56 0 444 0 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: 310 588 0 0 496 29 56 0 444 0 0 0 0
Added Vol: 0 8 0 0 3 0 29 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 310 596 0 0 499 29 85 0 444 0 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 310 596 0 0 499 29 85 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 310 596 0 0 499 29 85 0 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
FinalVolume: 310 596 0 0 499 29 85 0 0 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.93 1.00 1.00 0.99 0.99 0.95 1.00 1.00 1.00 1.00 1.00
Lanes: 0.68 1.32 0.00 0.00 0.95 0.05 1.00 0.00 1.00 0.00 0.00 0.00
Final Sat.: 1214 2334 0 0 1783 104 1805 0 1900 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.26 0.26 0.00 0.00 0.28 0.28 0.05 0.00 0.00 0.00 0.00 0.00
Crit Moves: **** *
Green/Cycle: 0.35 0.35 0.00 0.00 0.38 0.38 0.14 0.00 0.00 0.00 0.00 0.00
Volume/Cap: 0.73 0.73 0.00 0.00 0.73 0.73 0.33 0.00 0.00 0.00 0.00 0.00
Delay/Veh: 22.3 22.3 0.0 0.0 22.6 22.6 27.7 0.0 0.0 0.0 0.0 0.0
User DelAdj: 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: 22.3 22.3 0.0 0.0 22.6 22.6 27.7 0.0 0.0 0.0 0.0 0.0
LOS by Move: C C A A C C C A A A A A
HCM2kAvgQ: 11 11 0 0 11 11 2 0 0 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy
Cycle (sec): 70 Critical Vol./Cap.(X): 0.506
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.3
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing traffic volume and saturation flow for various movements and lanes.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.267
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.7
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing traffic volume and saturation flow for various movements and lanes.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.700
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.1
Optimal Cycle: 48 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.463
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.511
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 18.6
Optimal Cycle: 40 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across different approaches and movements.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.775
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.3
Optimal Cycle: 57 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across different approaches and movements.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: F[54.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns for traffic volumes and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 20.1 Worst Case Level Of Service: F[420.0]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns for traffic volumes and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.896
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 32.9
Optimal Cycle: 92 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of volume and delay metrics.

Saturation Flow Module table with 12 columns and 5 rows of saturation flow and adjustment factors.

Capacity Analysis Module table with 12 columns and 10 rows of capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.940
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 30.7
Optimal Cycle: 108 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of volume and delay metrics.

Saturation Flow Module table with 12 columns and 5 rows of saturation flow and adjustment factors.

Capacity Analysis Module table with 12 columns and 10 rows of capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.917
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 29.9
Optimal Cycle: 96 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic volumes and adjustments (Base Vol, Growth Adj, Initial Bse, etc.).

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.004
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 47.2
Optimal Cycle: 149 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic volumes and adjustments (Base Vol, Growth Adj, Initial Bse, etc.).

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.175
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 26 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 0 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0
Volume Module:
Base Vol: 0 82 0 0 93 0 0 0 0 0 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 82 0 0 93 0 0 0 0 0 0 0 0
Added Vol: 6 113 10 1 131 4 8 18 7 11 22 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 6 195 10 1 224 4 8 18 7 11 22 1
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 7 228 12 1 262 5 9 21 8 13 26 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 7 228 12 1 262 5 9 21 8 13 26 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
FinalVolume: 7 228 12 1 262 5 9 21 8 13 26 1
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.59 1.00 0.85 0.61 1.00 0.85 0.75 0.96 0.96 0.74 0.99 0.99
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.72 0.28 1.00 0.96 0.04
Final Sat.: 1123 1900 1615 1157 1900 1615 1417 1311 510 1414 1806 82
Capacity Analysis Module:
Vol/Sat: 0.01 0.12 0.01 0.00 0.14 0.00 0.01 0.02 0.02 0.01 0.01 0.01
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.01 0.18 0.01 0.00 0.20 0.00 0.03 0.08 0.08 0.05 0.07 0.07
Delay/Veh: 2.6 3.0 2.6 2.6 3.0 2.6 16.2 16.4 16.4 16.2 16.3 16.3
User DelAdj: 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: 2.6 3.0 2.6 2.6 3.0 2.6 16.2 16.4 16.4 16.2 16.3 16.3
LOS by Move: A A A A A A B B B B B B
HCM2kAvgQ: 0 1 0 0 2 0 0 0 0 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[10.9]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0
Volume Module:
Base Vol: 0 82 0 0 93 0 0 0 0 0 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 82 0 0 93 0 0 0 0 0 0 0 0
Added Vol: 9 129 0 0 149 4 5 0 8 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 9 211 0 0 242 4 5 0 8 0 0 0 0
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 11 247 0 0 283 5 6 0 9 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 11 247 0 0 283 5 6 0 9 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 288 xxxx xxxxx xxxx xxxx xxxxx 553 553 285 558 556 247
Potent Cap.: 1286 xxxx xxxxx xxxx xxxx xxxxx 497 444 758 443 442 797
Move Cap.: 1286 xxxx xxxxx xxxx xxxx xxxxx 494 440 758 435 439 797
Volume/Cap: 0.01 xxxx xxxxx xxxx xxxx xxxxx 0.01 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 7.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A * * * * * * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 629 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 7.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 10.9 xxxxx xxxxx xxxx xxxxx
Shared LOS: A * * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 10.9 xxxxxx
ApproachLOS: * * * * * * * * * * * * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3
Average Delay (sec/veh): 2.8 Worst Case Level Of Service: B[12.5]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
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: 0 82 0 0 93 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 82 0 0 93 0 0 0 0 0 0 0 0 0 0
Added Vol: 33 98 10 22 109 27 23 0 28 8 0 19
PasserByVol: 12 0 0 0 0 0 0 0 0 12 0 0 0 0
Initial Fut: 45 180 10 22 202 27 23 0 40 8 0 19
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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
PHF Volume: 53 211 12 26 236 32 27 0 47 9 0 22
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 53 211 12 26 236 32 27 0 47 9 0 22
Critical Gap Module:
Critical Gap: 4.1 xxxx xxxxx 4.1 xxxx xxxxx 7.1 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx 2.2 xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Conflict Vol: 268 xxxx xxxxx 222 xxxx xxxxx 636 631 252 649 641 216
Potent Cap.: 1307 xxxx xxxxx 1359 xxxx xxxxx 393 401 791 386 395 828
Move Cap.: 1307 xxxx xxxxx 1359 xxxx xxxxx 365 377 791 346 372 828
Volume/Cap: 0.04 xxxx xxxxx 0.02 xxxx xxxxx 0.07 0.00 0.06 0.03 0.00 0.03
Level Of Service Module:
2Way95thQ: 0.1 xxxx xxxxx 0.1 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 7.9 xxxx xxxxx 7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A * * A * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 555 xxxxx xxxx 587 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.5 xxxxx xxxxx 0.2 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 12.5 xxxxx xxxxx 11.5 xxxxx
Shared LOS: * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 12.5 11.5
ApproachLOS: * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C
Average Delay (sec/veh): 4.1 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: Yield Sign Yield Sign Yield Sign Yield Sign
Lanes: 1 1 1 1
Volume Module:
Base Vol: 31 82 0 0 93 0 0 0 53 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: 31 82 0 0 93 0 0 0 53 0 0 0
Added Vol: 14 141 0 0 145 0 0 0 9 0 0 0
PasserByVol: 0 12 0 0 12 0 0 0 0 0 0 0
Initial Fut: 45 235 0 0 250 0 0 0 62 0 0 0
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 53 275 0 0 293 0 0 0 73 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 53 275 0 0 293 0 0 0 73 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
FinalVolume: 53 275 0 0 293 0 0 0 73 0 0 0
PCE Module:
AutoPCE: 53 275 0 0 293 0 0 0 73 0 0 0
TruckPCE: 0 0 0 0 0 0 0 0 0 0 0 0
ComboPCE: 0 0 0 0 0 0 0 0 0 0 0 0
BicyclePCE: 0 0 0 0 0 0 0 0 0 0 0 0
AdjVolume: 53 275 0 0 293 0 0 0 73 0 0 0
Delay Module: >> Time Period: 0.25 hours <<
CircVolume: 0 53 293 328
MaxVolume: 1200 1172 1042 xxxxxx
PedVolume: 0 0 0 0
AdjMaxVol: 1200 1172 1042 xxxxxx
ApproachVol: 328 293 73 xxxxxx
ApproachDel: 4.1 4.1 3.7 xxxxxx
Queue: 1.1 1.0 0.2 xxxxx

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 5.7 Worst Case Level Of Service: C[22.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns for gap metrics and 2 rows: Critical Gap, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics and 5 rows: Conflict Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 10 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: C[19.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns for gap metrics and 2 rows: Critical Gap, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics and 5 rows: Conflict Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 10 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative A
 Cumulative Saturday Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 2.3 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:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module:

Base Vol:	95	294	0	0	257	20	9	0	36	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:	95	294	0	0	257	20	9	0	36	0	0	0
Added Vol:	0	14	0	0	16	36	31	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	308	0	0	273	56	40	0	36	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:	95	308	0	0	273	56	40	0	36	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	95	308	0	0	273	56	40	0	36	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxx	xxxx	xxxx	xxxx	6.4	6.5	6.2	xxxx	xxxx	xxxx
FollowUpTim:	2.2	xxxx	xxxx	xxxx	xxxx	xxxx	3.5	4.0	3.3	xxxx	xxxx	xxxx

Capacity Module:

Cnflct Vol:	329	xxxx	xxxx	xxxx	xxxx	xxxx	799	799	301	xxxx	xxxx	xxxx
Potent Cap.:	1242	xxxx	xxxx	xxxx	xxxx	xxxx	357	321	743	xxxx	xxxx	xxxx
Move Cap.:	1242	xxxx	xxxx	xxxx	xxxx	xxxx	335	295	743	xxxx	xxxx	xxxx
Volume/Cap:	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	0.12	0.00	0.05	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	0.2	xxxx										
Control Del:	8.1	xxxx										
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT											
Shared Cap.:	xxxx	453	xxxx	xxxx	xxxx	xxxx						
SharedQueue:	0.2	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.6	xxxx	xxxx	xxxx	xxxx
Shrd ConDel:	8.1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	14.5	xxxx	xxxx	xxxx	xxxx
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			14.5		xxxxxx			
ApproachLOS:	*			*			B		*			*

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 0.629
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 116 318 39 77 210 138 123 973 63 145 951 98
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: 116 318 39 77 210 138 123 973 63 145 951 98
Added Vol: 17 12 6 0 6 0 0 0 8 3 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 133 330 45 77 216 138 123 973 71 148 951 98
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: 133 330 45 77 216 138 123 973 71 148 951 98
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 133 330 45 77 216 138 123 973 71 148 951 98
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
FinalVolume: 133 330 45 77 216 138 123 973 71 148 951 98
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.49 1.00 0.85 0.32 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.86 0.14 1.00 1.81 0.19
Final Sat.: 933 1900 1615 600 1900 1615 1805 3331 243 1805 3227 333
Capacity Analysis Module:
Vol/Sat: 0.14 0.17 0.03 0.13 0.11 0.09 0.07 0.29 0.29 0.08 0.29 0.29
Crit Moves: ****
Green/Cycle: 0.28 0.28 0.28 0.28 0.28 0.28 0.11 0.46 0.46 0.13 0.48 0.48
Volume/Cap: 0.52 0.63 0.10 0.46 0.41 0.31 0.61 0.63 0.63 0.63 0.61 0.61
Delay/Veh: 23.2 24.6 19.0 23.1 21.2 20.4 35.0 14.9 14.9 34.2 13.9 13.9
User DelAdj: 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: 23.2 24.6 19.0 23.1 21.2 20.4 35.0 14.9 14.9 34.2 13.9 13.9
LOS by Move: C C B C C C C B B C B B
HCM2kAvgQ: 3 7 1 2 4 3 4 10 10 4 9 9
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.869
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 34.1
Optimal Cycle: 75 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.629
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.6
Optimal Cycle: 34 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 1.166
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 70.8
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 15 rows showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns and 4 rows showing Adjustment, Lanes, Final Sat., and Saturation Flow.

Capacity Analysis Module table with 12 columns and 15 rows showing Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th AV

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: B[15.0]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Volume Module table with 12 columns and 15 rows showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns and 3 rows showing Critical Gap, FollowUpTim, and Capacity Module.

Capacity Module table with 12 columns and 4 rows showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns and 10 rows showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.905
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 63.9
Optimal Cycle: 88 Level of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for different approaches and movements.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.955
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 20.1
Optimal Cycle: 114 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Grid of traffic volume data for various approaches and movements.

Saturation Flow Module: Grid of saturation flow data for different approaches and movements.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 1.069
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 53.3
Optimal Cycle: 0 Level Of Service: F

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 0 1! 0 0

Volume Module:
Base Vol: 148 567 19 10 145 5 12 29 66 14 27 39
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: 148 567 19 10 145 5 12 29 66 14 27 39
Added Vol: 0 77 0 0 37 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 148 644 19 10 182 5 12 29 66 14 27 39
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: 148 644 19 10 182 5 12 29 66 14 27 39
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 148 644 19 10 182 5 12 29 66 14 27 39
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
FinalVolume: 148 644 19 10 182 5 12 29 66 14 27 39

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: 0.18 0.80 0.02 0.05 0.92 0.03 0.11 0.27 0.62 0.17 0.34 0.49
Final Sat.: 138 602 18 33 609 17 66 160 364 100 193 279

Capacity Analysis Module:
Vol/Sat: 1.07 1.07 1.07 0.30 0.30 0.30 0.18 0.18 0.18 0.14 0.14 0.14
Crit Moves: ****
Delay/Veh: 73.6 73.6 73.6 10.6 10.6 10.6 10.2 10.2 10.2 10.0 10.0 10.0
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: 73.6 73.6 73.6 10.6 10.6 10.6 10.2 10.2 10.2 10.0 10.0 10.0
LOS by Move: F F F B B B B B B B B B
ApproachDel: 73.6 10.6 10.2 10.0
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 73.6 10.6 10.2 10.0
LOS by Appr: F B B B
AllWayAvgQ: 13.9 13.9 13.9 0.4 0.4 0.4 0.2 0.2 0.2 0.2 0.2 0.2

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: C[17.7]

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 0 0 1! 0 0

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 653 0 42 151 0 0 0 0 0 3 0 79
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: 0 653 0 42 151 0 0 0 0 0 3 0 79
Added Vol: 0 77 17 0 37 0 0 0 0 0 14 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 730 17 42 188 0 0 0 0 0 17 0 79
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: 0 730 17 42 188 0 0 0 0 0 17 0 79
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 730 17 42 188 0 0 0 0 0 17 0 79

Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 6.4 6.5 6.2
FollowUpTim:xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 3.5 4.0 3.3

Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 747 xxxxx xxxxxx xxxxx xxxxx xxxxxx 1011 1011 739
Potent Cap.: xxxxx xxxxx xxxxxx 870 xxxxx xxxxxx xxxxx xxxxx xxxxxx 268 242 421
Move Cap.: xxxxx xxxxx xxxxxx 870 xxxxx xxxxxx xxxxx xxxxx xxxxxx 258 230 421
Volume/Cap: xxxxx xxxxx xxxxxx 0.05 xxxxx xxxxxx xxxxx xxxxx xxxxxx 0.07 0.00 0.19

Level of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxxx xxxxx xxxxxx 9.3 xxxxx xxxxxx xxxxxx 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 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx 379 xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx 1.0 xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 9.3 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx 17.7 xxxxxx
Shared LOS: * * * A * * * * * * * * * C *
ApproachDel: xxxxxx xxxxxx xxxxxx 17.7
ApproachLOS: * * * C

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy
Average Delay (sec/veh): 2.8 Worst Case Level Of Service: C[20.4]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 613 13 53 144 0 0 0 0 6 0 68
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: 0 613 13 53 144 0 0 0 0 6 0 68
Added Vol: 1 0 1 0 0 0 0 39 8 0 14 0
Diverted Tr: -427 0 0 0 0 0 0 0 -130 -5 5 0
Initial Fut: -426 613 14 53 144 0 0 39 -122 1 19 68
User Adj: 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 0 613 14 53 144 0 0 39 0 1 19 68
Reduct Vol: 0 0 0 0 0 0 0 0 0 5 0 0
FinalVolume: 0 613 14 53 144 0 0 39 0 0 19 68
Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx 6.5 6.2 7.1 6.5 6.2
FollowUpTim:xxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 627 xxxxx xxxxxx xxxxx 877 144 890 870 620
Potent Cap.: xxxxx xxxxx xxxxxx 965 xxxxx xxxxxx xxxxx 289 909 266 292 492
Move Cap.: xxxxx xxxxx xxxxxx 965 xxxxx xxxxxx xxxxx 273 909 227 275 492
Volume/Cap: xxxxx xxxxx xxxxxx 0.05 xxxxx xxxxxx xxxxx 0.14 0.00 0.00 0.07 0.14
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxx xxxxx xxxxxx 8.9 xxxxx xxxxxx xxxxxx 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 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 273 xxxxx 420 xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxxx xxxxx 0.5 xxxxxx 0.8 xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 8.9 xxxxx xxxxxx xxxxxx xxxxx 20.4 xxxxxx 15.8 xxxxxx
Shared LOS: * * * A * * * * * C * C *
ApproachDel: xxxxxx xxxxxx 20.4 xxxxxx 15.8
ApproachLOS: * * C C
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.561
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.0
Optimal Cycle: 28 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: Permitted Permitted Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 10 0 0 10 0 0 0 0 0 4 0 10
Lanes: 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 1! 0 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 637 163 25 229 0 0 0 0 43 0 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: 0 637 163 25 229 0 0 0 0 43 0 29
Added Vol: 0 37 0 0 20 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 674 163 25 249 0 0 0 0 43 0 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: 0 674 163 25 249 0 0 0 0 43 0 29
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 674 163 25 249 0 0 0 0 43 0 29
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
FinalVolume: 0 674 163 25 249 0 0 0 0 43 0 29
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.97 0.97 0.92 0.92 1.00 1.00 1.00 1.00 0.92 1.00 0.92
Lanes: 0.00 0.81 0.19 0.09 0.91 0.00 0.00 0.00 0.00 0.60 0.00 0.40
Final Sat.: 0 1490 360 160 1592 0 0 0 0 1042 0 703
Capacity Analysis Module:
Vol/Sat: 0.00 0.45 0.45 0.16 0.16 0.00 0.00 0.00 0.00 0.04 0.00 0.04
Crit Moves: ****
Green/Cycle: 0.00 0.68 0.68 0.68 0.68 0.00 0.00 0.00 0.00 0.20 0.00 0.20
Volume/Cap: 0.00 0.67 0.67 0.23 0.23 0.00 0.00 0.00 0.00 0.21 0.00 0.21
Delay/Veh: 0.0 6.0 6.0 3.1 3.1 0.0 0.0 0.0 0.0 17.0 0.0 17.0
User DelAdj: 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 6.0 6.0 3.1 3.1 0.0 0.0 0.0 0.0 17.0 0.0 17.0
LOS by Move: A A A A A A A A A B A B
HCM2kAvgQ: 0 9 9 2 2 0 0 0 0 1 0 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 2.3 Worst Case Level Of Service: A[9.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0).

Volume Module:

Table with 12 columns for traffic volume and 12 columns for adjustment factors (Growth Adj, Initial Bse, Added Vol, etc.).

Critical Gap Module:

Table with 3 columns for Critical Gap, FollowUpTim, and values (4.1, 2.2, 6.4, 3.5).

Capacity Module:

Table with 3 columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. and values (159, 1433, 1433, 0.00).

Level Of Service Module:

Table with 12 columns for Level of Service parameters (2Way95thQ, Control Del, LOS by Move, etc.).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: A[9.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 0 1 0).

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with 12 columns for traffic volume and 12 columns for adjustment factors (Growth Adj, Initial Bse, Added Vol, etc.).

Critical Gap Module:

Table with 3 columns for Critical Gap, FollowUpTim, and values (4.1, 2.2, 6.4, 3.5).

Capacity Module:

Table with 3 columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. and values (158, 1434, 1434, 0.00).

Level Of Service Module:

Table with 12 columns for Level of Service parameters (2Way95thQ, Control Del, LOS by Move, etc.).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.112
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 68.7
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Protected and Permitted.

Volume Module table with 12 columns and 15 rows showing traffic volume, growth adjustments, and final volumes for each approach and movement.

Saturation Flow Module table with 12 columns and 5 rows showing saturation flow rates and adjustments for each lane.

Capacity Analysis Module table with 12 columns and 11 rows showing capacity, critical moves, and delay metrics for each approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.590
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 44 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Permitted.

Volume Module table with 12 columns and 15 rows showing traffic volume, growth adjustments, and final volumes for each approach and movement.

Saturation Flow Module table with 12 columns and 5 rows showing saturation flow rates and adjustments for each lane.

Capacity Analysis Module table with 12 columns and 11 rows showing capacity, critical moves, and delay metrics for each approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.165
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 79.1
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Table with 12 columns for Volume Module: >> Count Date: 29 Mar 2005 <<. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with 12 columns for Saturation Flow Module. Rows include Sat/Lane, Adjustment, Lanes, Final Sat.

Table with 12 columns for Capacity Analysis Module. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 1.012
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 34.8
Optimal Cycle: 158 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Table with 12 columns for Volume Module: except thru movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Table with 12 columns for Saturation Flow Module. Rows include Sat/Lane, Adjustment, Lanes, Final Sat.

Table with 12 columns for Capacity Analysis Module. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 4.8 Worst Case Level Of Service: F[352.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module: Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: E[36.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 12 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module: Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.967
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 48.6
Optimal Cycle: 121 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.829
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 25.4
Optimal Cycle: 69 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.854
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.9
Optimal Cycle: 75 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and saturation flow data.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.002
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 46.5
Optimal Cycle: 147 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and saturation flow data.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.497
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.7
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 0 4 10 0 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0
Volume Module:
Base Vol: 0 427 0 24 130 0 0 0 0 5 0 226
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: 0 427 0 24 130 0 0 0 0 5 0 226
Added Vol: 4 79 12 0 48 2 14 34 10 3 11 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 4 506 12 24 178 2 14 34 10 8 11 227
User Adj: 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06
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: 4 536 13 25 189 2 15 36 11 8 12 241
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 4 536 13 25 189 2 15 36 11 8 12 241
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
FinalVolume: 4 536 13 25 189 2 15 36 11 8 12 241
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.63 1.00 0.85 0.36 1.00 0.85 0.50 0.97 0.97 0.73 0.86 0.86
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.77 0.23 1.00 0.05 0.95
Final Sat.: 1201 1900 1615 686 1900 1615 944 1418 417 1387 75 1553
Capacity Analysis Module:
Vol/Sat: 0.00 0.28 0.01 0.04 0.10 0.00 0.02 0.03 0.03 0.01 0.15 0.15
Crit Moves: ****
Green/Cycle: 0.57 0.57 0.57 0.57 0.57 0.57 0.31 0.31 0.31 0.31 0.31 0.31
Volume/Cap: 0.01 0.50 0.01 0.07 0.17 0.00 0.05 0.08 0.08 0.02 0.50 0.50
Delay/Veh: 4.7 6.9 4.7 4.9 5.3 4.7 12.1 12.2 12.2 11.9 14.8 14.8
User DelAdj: 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: 4.7 6.9 4.7 4.9 5.3 4.7 12.1 12.2 12.2 11.9 14.8 14.8
LOS by Move: A A A A A A B B B B B B
HCM2kAvgQ: 0 5 0 0 1 0 0 1 1 0 4 4
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[11.7]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 1 0 0
Volume Module:
Base Vol: 0 427 0 0 135 0 0 0 0 0 0 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 1.00
Initial Bse: 0 427 0 0 135 0 0 0 0 0 0 0 0 0
Added Vol: 6 79 0 0 76 2 10 0 18 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 6 506 0 0 211 2 10 0 18 0 0 0 0
User Adj: 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06
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: 6 536 0 0 224 2 11 0 19 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 6 536 0 0 224 2 11 0 19 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 226 xxxx xxxxx xxxx xxxx xxxxx 774 774 225 783 775 536
Potent Cap.: 1355 xxxx xxxxx xxxx xxxx xxxxx 370 332 820 313 331 548
Move Cap.: 1355 xxxx xxxxx xxxx xxxx xxxxx 368 330 820 305 330 548
Volume/Cap: 0.00 xxxx xxxxx xxxx xxxx xxxxx 0.03 0.00 0.02 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A * * * * * * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 570 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.2 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 11.7 xxxxx xxxxx xxxx xxxxx
Shared LOS: A * * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 11.7 xxxxxx
ApproachLOS: * * * * * * * * * * * * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: C[15.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 4.7 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

PCE Module:

Table with 12 columns for PCE metrics and 5 rows for AutoPCE, TruckPCE, ComboPCE, BicyclePCE, AdjVolume.

Delay Module: >> Time Period: 0.25 hours <<

Table with 4 columns for delay metrics and 6 rows for CircVolume, MaxVolume, PedVolume, AdjMaxVol, ApproachVol, ApproachDel, Queue.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[11.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 12 columns for capacity metrics and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[19.6]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 12 columns for capacity metrics and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: B[14.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 12 columns for volume components and 12 rows for various adjustment factors like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 12 columns for gap components and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 12 columns for capacity components and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 12 columns for LOS components and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 24th St / Broadway
Cycle (sec): 70 Critical Vol./Cap.(X): 1.012
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 43.1
Optimal Cycle: 157 Level of Service: D
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 78 316 71 238 597 36 239 790 116 101 1416 81
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: 78 316 71 238 597 36 239 790 116 101 1416 81
Added Vol: 15 10 5 0 15 0 0 0 22 7 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 93 326 76 238 612 36 239 790 138 108 1416 81
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: 93 326 76 238 612 36 239 790 138 108 1416 81
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 93 326 76 238 612 36 239 790 138 108 1416 81
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
FinalVolume: 93 326 76 238 612 36 239 790 138 108 1416 81
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.17 1.00 0.85 0.38 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.70 0.30 1.00 1.89 0.11
Final Sat.: 333 1900 1615 718 1900 1615 1805 3006 525 1805 3387 194
Capacity Analysis Module:
Vol/Sat: 0.28 0.17 0.05 0.33 0.32 0.02 0.13 0.26 0.26 0.06 0.42 0.42
Crit Moves: ****
Green/Cycle: 0.33 0.33 0.33 0.33 0.33 0.33 0.13 0.45 0.45 0.09 0.41 0.41
Volume/Cap: 0.85 0.52 0.14 1.01 0.98 0.07 1.01 0.58 0.58 0.64 1.01 1.01
Delay/Veh: 66.3 19.9 16.7 85.3 55.2 16.2 92.1 14.9 14.9 38.2 46.9 46.9
User DelAdj: 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: 66.3 19.9 16.7 85.3 55.2 16.2 92.1 14.9 14.9 38.2 46.9 46.9
LOS by Move: E B B F E B F B B D D D
HCM2kAvgQ: 4 6 1 10 20 1 10 8 8 3 26 26
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 1.174
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 106.6
Optimal Cycle: 180 Level Of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for capacity and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.765
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 15.0
Optimal Cycle: 48 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for capacity and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 1.167
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 54.9
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Table with 12 columns representing traffic flow directions. Rows include Volume Module (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume) and Saturation Flow Module (Adjustment, Lanes, Final Sat.).

Table with 12 columns representing traffic flow directions. Rows include Capacity Analysis Module (Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ).

Table with 12 columns representing traffic flow directions. Rows include Capacity Analysis Module (Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, AllWayAvgQ).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[10.6]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Table with 12 columns representing traffic flow directions. Rows include Volume Module (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume) and Critical Gap Module (Critical Gp, FollowUpTim).

Table with 12 columns representing traffic flow directions. Rows include Capacity Module (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.) and Level of Service Module (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS).

Table with 12 columns representing traffic flow directions. Rows include Capacity Module (Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.) and Level of Service Module (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.965
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 85.0
Optimal Cycle: 117 Level Of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 columns for counts across different approaches and movements.

Saturation Flow Module: Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. across different approaches and movements.

Capacity Analysis Module: Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.835
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.4
Optimal Cycle: 61 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 columns for counts across different approaches and movements.

Saturation Flow Module: Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. across different approaches and movements.

Capacity Analysis Module: Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 1.008
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 39.9
Optimal Cycle: 0 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic flow metrics across four directions.

Saturation Flow Module table with 12 columns for adjustment factors and saturation flow values.

Capacity Analysis Module table with 12 columns for delay, LOS, and approach delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: C[16.5]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module table with 12 columns for traffic flow metrics across four directions.

Critical Gap Module table with 12 columns for gap and follow-up time metrics.

Capacity Module table with 12 columns for conflict volume, capacity, and volume/capacity ratios.

Level of Service Module table with 12 columns for delay, LOS, and approach delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: C[18.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0).

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 11 columns for volume counts and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 11 columns for gap values and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 11 columns for capacity values and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS values and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.548
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.3
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Permitted, Split Phase), Rights (Include), Lanes (0 0 0 1 0).

Volume Module: Table with 11 columns for volume counts and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module: Table with 11 columns for saturation flow values and 4 rows for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with 11 columns for capacity analysis values and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 3.7 Worst Case Level Of Service: A[8.8]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0)

Volume Module: >> Count Date: 1 Sep 1997 <<
Base Vol: 0 130 3 44 586 0 0 0 0 6 0 10
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

Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 6.4 6.5 6.2
FollowUpTim:xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 3.5 4.0 3.3

Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 28 xxxxx xxxxxx xxxxx xxxxx xxxxxx 151 151 27
Potent Cap.: xxxxx xxxxx xxxxxx 1599 xxxxx xxxxxx xxxxx xxxxx xxxxxx 846 745 1055

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxxx xxxxx xxxxxx 7.3 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 5.0 Worst Case Level Of Service: A[8.7]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0)

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 128 2 74 588 0 0 0 0 4 0 39
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

Critical Gap Module:
Critical Gp:xxxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 6.4 6.5 6.2
FollowUpTim:xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 3.5 4.0 3.3

Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 27 xxxxx xxxxxx xxxxx xxxxx xxxxxx 212 212 26
Potent Cap.: xxxxx xxxxx xxxxxx 1600 xxxxx xxxxxx xxxxx xxxxx xxxxxx 781 689 1056

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxxx xxxxx xxxxxx 7.4 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.999
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 36.2
Optimal Cycle: 144 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for different traffic movements and 12 rows for various volume and adjustment factors.

Saturation Flow Module table with 12 columns for movements and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for movements and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.684
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.9
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for different traffic movements and 12 rows for various volume and adjustment factors.

Saturation Flow Module table with 12 columns for movements and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for movements and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.082
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 56.1
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 1.193
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 79.9
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:except thru movements. Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: F[168.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 10 columns (Count, Date, 29 Mar 2005, <<) and 10 rows (Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume).

Critical Gap Module: Table with 10 columns (Critical Gp, FollowUpTim) and 10 rows (6.8, 6.5, 6.9, 4.1, 3.5, 4.0, 3.3, 2.2, etc).

Capacity Module: Table with 10 columns (Cnflict Vol, Potent Cap., Move Cap., Volume/Cap) and 10 rows (2704, 3534, 939, 1878, etc).

Level of Service Module: Table with 10 columns (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS) and 10 rows (0.1, 16.5, C, etc).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 35.0 Worst Case Level Of Service: F[1010.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 10 columns (Count, Date, 29 Mar 2005, <<) and 10 rows (Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume).

Critical Gap Module: Table with 10 columns (Critical Gp, FollowUpTim) and 10 rows (6.8, 6.5, 6.9, 4.1, 3.5, 4.0, 3.3, 2.2, etc).

Capacity Module: Table with 10 columns (Cnflict Vol, Potent Cap., Move Cap., Volume/Cap) and 10 rows (2706, 3503, 883, 1766, etc).

Level of Service Module: Table with 10 columns (2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS) and 10 rows (0.8, 17.7, C, etc).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.021
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 48.6
Optimal Cycle: 161 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 12 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.907
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 26.0
Optimal Cycle: 92 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 12 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.910
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 30.5
Optimal Cycle: 93 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.127
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 66.3
Optimal Cycle: 180 Level of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.488
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.5
Optimal Cycle: 26 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 0 4 10 0 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0
Volume Module:
Base Vol: 0 106 0 154 537 0 0 0 0 18 0 14
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: 0 106 0 154 537 0 0 0 0 18 0 14
Added Vol: 8 90 6 1 117 6 7 17 9 11 32 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 196 6 155 654 6 7 17 9 29 32 15
User Adj: 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16
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: 9 227 7 180 759 7 8 20 10 34 37 17
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 9 227 7 180 759 7 8 20 10 34 37 17
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
FinalVolume: 9 227 7 180 759 7 8 20 10 34 37 17
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.28 1.00 0.85 0.61 1.00 0.85 0.72 0.95 0.95 0.74 0.95 0.95
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.65 0.35 1.00 0.68 0.32
Final Sat.: 524 1900 1615 1159 1900 1615 1374 1178 623 1412 1232 577
Capacity Analysis Module:
Vol/Sat: 0.02 0.12 0.00 0.16 0.40 0.00 0.01 0.02 0.02 0.02 0.03 0.03
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.03 0.18 0.01 0.23 0.59 0.01 0.03 0.08 0.08 0.12 0.15 0.15
Delay/Veh: 2.6 3.0 2.6 3.2 5.0 2.6 16.1 16.4 16.4 16.6 16.7 16.7
User DelAdj: 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: 2.6 3.0 2.6 3.2 5.0 2.6 16.1 16.4 16.4 16.6 16.7 16.7
LOS by Move: A A A A A A B B B B B B
HCM2kAvgQ: 0 1 0 1 7 0 0 0 0 1 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.4 Worst Case Level Of Service: C[17.0]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0
Volume Module:
Base Vol: 0 106 0 0 555 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 106 0 0 555 0 0 0 0 0 0 0 0 0 0
Added Vol: 16 111 0 0 130 6 5 0 9 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 16 217 0 0 685 6 5 0 9 0 0 0 0 0 0
User Adj: 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16
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
PHF Volume: 19 252 0 0 795 7 6 0 10 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 19 252 0 0 795 7 6 0 10 0 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 802 xxxxx xxxxx xxxxx xxxxx xxxxx 1087 1087 798 1092 1090 252
Potent Cap.: 831 xxxxx xxxxx xxxxx xxxxx xxxxx 241 218 389 194 217 792
Move Cap.: 831 xxxxx xxxxx xxxxx xxxxx xxxxx 237 213 389 185 212 792
Volume/Cap: 0.02 xxxxx xxxxx xxxxx xxxxx xxxxx 0.02 0.00 0.03 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.1 xxxxx xxxxx
Control Del: 9.4 xxxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 317 xxxxx xxxxx 0 xxxxx
SharedQueue: 0.1 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.2 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 9.4 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 17.0 xxxxx xxxxx xxxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxxx xxxxxxx 17.0 xxxxxxx
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: C[22.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 7.4 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

PCE Module:

Table with 12 columns for PCE metrics and 5 rows for AutoPCE, TruckPCE, ComboPCE, BicyclePCE, AdjVolume.

Delay Module: >> Time Period: 0.25 hours <<

Table with 4 columns for delay metrics and 5 rows for CircVolume, MaxVolume, PedVolume, AdjMaxVol, etc.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 6.8 Worst Case Level Of Service: E[47.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (1 0 2 0 0, 0 0 1 0 1, 0 0 1 0 0, 0 0 0 0 0)

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: D[29.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0, 0 0 0 1 0, 0 0 1 0 0, 1 0 0 0 0)

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: C[24.0]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns representing different traffic components and 12 rows of volume data.

Critical Gap Module:

Table with 12 columns and 2 rows of critical gap and follow-up time data.

Capacity Module:

Table with 12 columns and 4 rows of capacity-related data.

Level Of Service Module:

Table with 12 columns and 10 rows of level of service and delay data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Reduced Commercial - Alternative B
 Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

Curtis Park Village
 Reduced Commercial - Alternative B
 Cumulative Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #1 24th St / Broadway

 Cycle (sec): 70 Critical Vol./Cap.(X): 0.555
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.6
 Optimal Cycle: 43 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:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	4	20	20	4	20	20
Lanes:	1	0	1	0	1	0	1	0	1	1	0	1

 Volume Module: >> Count Date: 2 Apr 2005 <<

Base Vol:	65	147	29	66	131	89	153	856	54	58	1033	90
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:	65	147	29	66	131	89	153	856	54	58	1033	90
Added Vol:	17	12	6	0	14	0	0	0	19	7	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	82	159	35	66	145	89	153	856	73	65	1033	90
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:	82	159	35	66	145	89	153	856	73	65	1033	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	159	35	66	145	89	153	856	73	65	1033	90
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
FinalVolume:	82	159	35	66	145	89	153	856	73	65	1033	90

 Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.52	1.00	0.85	0.48	1.00	0.85	0.95	0.94	0.94	0.95	0.94	0.94
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.84	0.16	1.00	1.84	0.16
Final Sat.:	990	1900	1615	912	1900	1615	1805	3286	280	1805	3281	286

 Capacity Analysis Module:

Vol/Sat:	0.08	0.08	0.02	0.07	0.08	0.06	0.08	0.26	0.26	0.04	0.31	0.31
Crit Moves:	****			****			****			****		
Green/Cycle:	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.60	0.60	0.12	0.57	0.57
Volume/Cap:	0.55	0.55	0.14	0.48	0.51	0.37	0.55	0.43	0.43	0.30	0.55	0.55
Delay/Veh:	31.8	29.9	26.1	29.8	28.8	27.6	29.9	7.7	7.7	28.9	9.9	9.9
User DelAdj:	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:	31.8	29.9	26.1	29.8	28.8	27.6	29.9	7.7	7.7	28.9	9.9	9.9
LOS by Move:	C	C	C	C	C	C	C	A	A	C	A	A
HCM2kAvgQ:	3	4	1	2	4	2	4	6	6	2	8	8

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.647
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 21.0
Optimal Cycle: 40 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for growth/initial factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. Rows include Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.363
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.2
Optimal Cycle: 26 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for growth/initial factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. Rows include Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av
Average Delay (sec/veh): 1.1 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: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 1 0 0 0 0 0 0 0 0 0 1
Volume Module:
Base Vol: 0 536 83 33 443 0 0 0 0 0 0 0 63
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: 0 536 83 33 443 0 0 0 0 0 0 0 63
Added Vol: 0 0 35 24 2 0 0 0 0 0 0 0 15
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 536 118 57 445 0 0 0 0 0 0 0 78
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: 0 536 118 57 445 0 0 0 0 0 0 0 78
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 536 118 57 445 0 0 0 0 0 0 0 78
Critical Gap Module:
Critical Gap:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 6.2
FollowUpTim:xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 3.3
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 654 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 327
Potent Cap.: xxxxx xxxxx xxxxxx 943 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 719
Move Cap.: xxxxx xxxxx xxxxxx 943 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 719
Volume/Cap: xxxxx xxxxx xxxxxx 0.06 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.11
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx 0.4
Control Del:xxxxxx xxxxx xxxxxx 9.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx 10.6
LOS by Move: * * * A * * * * * * * * * B
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx 9.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: * * * A * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx 10.6
ApproachLOS: * * * * * B
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St
Cycle (sec): 70 Critical Vol./Cap.(X): 0.667
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.7
Optimal Cycle: 44 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: Split Phase Split Phase Split Phase Split Phase
Rights: Include Include Ignore Include
Min. Green: 10 10 0 0 10 10 10 0 0 10 0 0 0 0
Lanes: 0 1 1 0 0 0 0 0 1 0 1 0 0 0 0 0 0
Volume Module:
Base Vol: 310 588 0 0 496 29 56 0 444 0 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: 310 588 0 0 496 29 56 0 444 0 0 0 0
Added Vol: 0 7 0 0 2 0 28 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 310 595 0 0 498 29 84 0 444 0 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 310 595 0 0 498 29 84 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 310 595 0 0 498 29 84 0 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
FinalVolume: 310 595 0 0 498 29 84 0 0 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.93 1.00 1.00 0.99 0.99 0.95 1.00 1.00 1.00 1.00 1.00
Lanes: 0.69 1.31 0.00 0.00 0.94 0.06 1.00 0.00 1.00 0.00 0.00 0.00
Final Sat.: 1216 2333 0 0 1783 104 1805 0 1900 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.26 0.26 0.00 0.00 0.28 0.28 0.05 0.00 0.00 0.00 0.00 0.00
Crit Moves: **** *
Green/Cycle: 0.35 0.35 0.00 0.00 0.38 0.38 0.14 0.00 0.00 0.00 0.00 0.00
Volume/Cap: 0.73 0.73 0.00 0.00 0.73 0.73 0.33 0.00 0.00 0.00 0.00 0.00
Delay/Veh: 22.3 22.3 0.0 0.0 22.5 22.5 27.7 0.0 0.0 0.0 0.0 0.0
User DelAdj: 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: 22.3 22.3 0.0 0.0 22.5 22.5 27.7 0.0 0.0 0.0 0.0 0.0
LOS by Move: C C A A C C C A A A A A
HCM2kAvgQ: 11 11 0 0 11 11 2 0 0 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.505
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.2
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for each approach.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.264
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.7
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for each approach.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ for each approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.697
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.1
Optimal Cycle: 47 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. Rows include 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, LOS by Move, and HCM2kAvgQ. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.460
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. Rows include 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, LOS by Move, and HCM2kAvgQ. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.507
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 39 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module table with 12 columns for saturation flow and adjustment factors.

Capacity Analysis Module table with 12 columns for capacity, critical moves, and delay factors.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.780
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 58 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module table with 12 columns for saturation flow and adjustment factors.

Capacity Analysis Module table with 12 columns for capacity, critical moves, and delay factors.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: F[53.0]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns and 11 rows showing traffic volume data for various approaches and movements.

Critical Gap Module: Table with 11 columns and 2 rows showing critical gap and follow-up time data.

Capacity Module: Table with 11 columns and 5 rows showing capacity and volume/capacity data.

Level of Service Module: Table with 11 columns and 10 rows showing level of service and delay data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 17.9 Worst Case Level Of Service: F[364.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns and 11 rows showing traffic volume data for various approaches and movements.

Critical Gap Module: Table with 11 columns and 2 rows showing critical gap and follow-up time data.

Capacity Module: Table with 11 columns and 5 rows showing capacity and volume/capacity data.

Level of Service Module: Table with 11 columns and 10 rows showing level of service and delay data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.886
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 31.1
Optimal Cycle: 89 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of volume and adjustment factors.

Saturation Flow Module table with 12 columns and 5 rows showing saturation flow rates and adjustments.

Capacity Analysis Module table with 12 columns and 10 rows showing capacity analysis metrics like Vol/Sat, Crit Moves, and Delay/Veh.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.931
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 29.9
Optimal Cycle: 103 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of volume and adjustment factors.

Saturation Flow Module table with 12 columns and 5 rows showing saturation flow rates and adjustments.

Capacity Analysis Module table with 12 columns and 10 rows showing capacity analysis metrics like Vol/Sat, Crit Moves, and Delay/Veh.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.905
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 28.8
Optimal Cycle: 92 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic flows and 12 rows for metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.002
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 47.0
Optimal Cycle: 146 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic flows and 12 rows for metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.166
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.9
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 0 4 10 0 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 0 1 0 0 1 0 0 1 0 0
Volume Module:
Base Vol: 0 82 0 0 93 0 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 82 0 0 93 0 0 0 0 0 0 0 0 0 0 0
Added Vol: 7 101 7 1 116 5 9 20 9 8 24 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 7 183 7 1 209 5 9 20 9 8 24 1
User Adj: 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16
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
PHF Volume: 8 212 8 1 242 6 10 23 10 9 28 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 8 212 8 1 242 6 10 23 10 9 28 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 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 1.00 1.00
FinalVolume: 8 212 8 1 242 6 10 23 10 9 28 1
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.60 1.00 0.85 0.62 1.00 0.85 0.74 0.95 0.95 0.74 0.99 0.99
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.69 0.31 1.00 0.96 0.04
Final Sat.: 1142 1900 1615 1174 1900 1615 1414 1250 563 1406 1813 76
Capacity Analysis Module:
Vol/Sat: 0.01 0.11 0.01 0.00 0.13 0.00 0.01 0.02 0.02 0.01 0.02 0.02
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.01 0.16 0.01 0.00 0.19 0.01 0.04 0.09 0.09 0.03 0.08 0.08
Delay/Veh: 2.6 2.9 2.6 2.6 3.0 2.6 16.2 16.4 16.4 16.2 16.3 16.3
User DelAdj: 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: 2.6 2.9 2.6 2.6 3.0 2.6 16.2 16.4 16.4 16.2 16.3 16.3
LOS by Move: A A A A A A B B B B B B
HCM2kAvgQ: 0 1 0 0 1 0 0 0 0 0 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[10.7]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0
Volume Module:
Base Vol: 0 82 0 0 93 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 82 0 0 93 0 0 0 0 0 0 0 0 0 0
Added Vol: 14 114 0 0 130 5 7 0 12 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 14 196 0 0 223 5 7 0 12 0 0 0
User Adj: 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16
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
PHF Volume: 16 227 0 0 259 6 8 0 14 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 16 227 0 0 259 6 8 0 14 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 264 xxxx xxxxx xxxx xxxx xxxxx 521 521 262 528 524 227
Potent Cap.: 1311 xxxx xxxxx xxxx xxxx xxxxx 519 463 782 464 461 817
Move Cap.: 1311 xxxx xxxxx xxxx xxxx xxxxx 514 457 782 451 455 817
Volume/Cap: 0.01 xxxx xxxxx xxxx xxxx xxxxx 0.02 0.00 0.02 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 7.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 656 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 7.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 10.7 xxxxx xxxxx xxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxx xxxxxx 10.7 xxxxxx
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3
Average Delay (sec/veh): 1.5 Worst Case Level Of Service: B[12.0]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
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: 0 82 0 0 93 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 82 0 0 93 0 0 0 0 0 0 0 0 0 0
Added Vol: 14 106 11 9 115 20 17 0 12 9 0 8
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 14 188 11 9 208 20 17 0 12 9 0 8
User Adj: 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16
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
PHF Volume: 16 218 13 10 241 23 20 0 14 10 0 9
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 16 218 13 10 241 23 20 0 14 10 0 9
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx 4.1 xxxx xxxxx 7.1 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx 2.2 xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 264 xxxx xxxxx 231 xxxx xxxxx 535 537 253 538 542 224
Potent Cap.: 1311 xxxx xxxxx 1349 xxxx xxxxx 459 453 791 457 450 820
Move Cap.: 1311 xxxx xxxxx 1349 xxxx xxxxx 447 444 791 442 441 820
Volume/Cap: 0.01 xxxx xxxxx 0.01 xxxx xxxxx 0.04 0.00 0.02 0.02 0.00 0.01
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 7.8 xxxx xxxxx 7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A * * A * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 545 xxxxx xxxx 565 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.2 xxxxx xxxxx 0.1 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 12.0 xxxxx xxxxx 11.6 xxxxx
Shared LOS: * * * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 12.0 11.6
ApproachLOS: * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C
Average Delay (sec/veh): 4.0 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: Yield Sign Yield Sign Yield Sign Yield Sign
Lanes: 1 1 1 1
Volume Module:
Base Vol: 31 82 0 0 93 0 0 0 53 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: 31 82 0 0 93 0 0 0 53 0 0 0
Added Vol: 16 130 0 0 136 0 0 0 11 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 47 212 0 0 229 0 0 0 64 0 0 0
User Adj: 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16 1.16
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: 55 246 0 0 266 0 0 0 74 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 55 246 0 0 266 0 0 0 74 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
FinalVolume: 55 246 0 0 266 0 0 0 74 0 0 0
PCE Module:
AutoPCE: 55 246 0 0 266 0 0 0 74 0 0 0
TruckPCE: 0 0 0 0 0 0 0 0 0 0 0 0
ComboPCE: 0 0 0 0 0 0 0 0 0 0 0 0
BicyclePCE: 0 0 0 0 0 0 0 0 0 0 0 0
AdjVolume: 55 246 0 0 266 0 0 0 74 0 0 0
Delay Module: >> Time Period: 0.25 hours <<
CircVolume: 0 55 266 300
MaxVolume: 1200 1171 1057 xxxxxx
PedVolume: 0 0 0 0
AdjMaxVol: 1200 1171 1057 xxxxxx
ApproachVol: 300 266 74 xxxxxx
ApproachDel: 4.0 4.0 3.7 xxxxxx
Queue: 1.0 0.9 0.2 xxxxx

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 5.6 Worst Case Level Of Service: C[17.9]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (1-0-2-0-0, etc.)

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume

Critical Gap Module table with columns for Critical Gap, FollowUpTim

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: C[15.3]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0-0, etc.)

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume

Critical Gap Module table with columns for Critical Gap, FollowUpTim

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative B
 Cumulative Saturday Peak Hour

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #30 Franklin Bl/5th Av (South)

Average Delay (sec/veh): 2.3 Worst Case Level Of Service: B[14.3]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	1	0	0	0	0	0	0	1	0	0	0

Volume Module:

Base Vol:	95	294	0	0	257	20	9	0	36	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:	95	294	0	0	257	20	9	0	36	0	0	0
Added Vol:	0	11	0	0	13	34	29	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	305	0	0	270	54	38	0	36	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:	95	305	0	0	270	54	38	0	36	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	95	305	0	0	270	54	38	0	36	0	0	0

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	324	xxxx	xxxxx	xxxx	xxxx	xxxxx	792	792	297	xxxx	xxxx	xxxxx
Potent Cap.:	1247	xxxx	xxxxx	xxxx	xxxx	xxxxx	361	324	747	xxxx	xxxx	xxxxx
Move Cap.:	1247	xxxx	xxxxx	xxxx	xxxx	xxxxx	339	298	747	xxxx	xxxx	xxxxx
Volume/Cap:	0.08	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.11	0.00	0.05	xxxx	xxxx	xxxxx

Level Of Service Module:

2Way95thQ:	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Control Del:	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	461	xxxxx	xxxx	xxxx	xxxxx			
SharedQueue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	xxxxx	xxxx	xxxxx			
Shrd ConDel:	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	14.3	xxxxx	xxxxx	xxxx	xxxxx			
Shared LOS:	A	*	*	*	*	*	*	B	*	*	*	*			
ApproachDel:	xxxxxxx			xxxxxxx			14.3			xxxxxxx					
ApproachLOS:	*			*			B			*					

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.629
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 116 318 39 77 210 138 123 973 63 145 951 98
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: 116 318 39 77 210 138 123 973 63 145 951 98
Added Vol: 16 12 6 0 7 0 0 0 10 3 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 132 330 45 77 217 138 123 973 73 148 951 98
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: 132 330 45 77 217 138 123 973 73 148 951 98
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 132 330 45 77 217 138 123 973 73 148 951 98
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
FinalVolume: 132 330 45 77 217 138 123 973 73 148 951 98
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.49 1.00 0.85 0.32 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.86 0.14 1.00 1.81 0.19
Final Sat.: 929 1900 1615 599 1900 1615 1805 3324 249 1805 3227 333
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.14 0.17 0.03 0.13 0.11 0.09 0.07 0.29 0.29 0.08 0.29 0.29
Crit Moves: **** ****
Green/Cycle: 0.28 0.28 0.28 0.28 0.28 0.28 0.11 0.47 0.47 0.13 0.48 0.48
Volume/Cap: 0.51 0.63 0.10 0.47 0.41 0.31 0.61 0.63 0.63 0.63 0.61 0.61
Delay/Veh: 23.2 24.7 19.0 23.1 21.2 20.5 35.0 14.9 14.9 34.2 13.9 13.9
User DelAdj: 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: 23.2 24.7 19.0 23.1 21.2 20.5 35.0 14.9 14.9 34.2 13.9 13.9
LOS by Move: C C B C C C C B B C B B
HCM2kAvgQ: 3 7 1 2 4 3 4 10 10 4 9 9

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.869
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 34.1
Optimal Cycle: 75 Level Of Service: C

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.629
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 34 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 1.161
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 69.5
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and growth factors.

Saturation Flow Module table with 12 columns and 4 rows showing adjustment factors and saturation flow.

Capacity Analysis Module table with 12 columns and 14 rows showing delay, LOS, and approach delay.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th AV

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: C[15.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module table with 12 columns and 14 rows showing traffic volume and growth factors.

Critical Gap Module table with 12 columns and 3 rows showing critical gap and follow-up time.

Capacity Module table with 12 columns and 5 rows showing conflict volume, potential capacity, and move capacity.

Level of Service Module table with 12 columns and 10 rows showing delay, LOS, and approach delay.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.906
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 63.7
Optimal Cycle: 88 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.956
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 20.2
Optimal Cycle: 115 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 1.070
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 53.2
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns for flow directions and 10 rows for various volume and delay metrics.

Saturation Flow Module table with 12 columns and 5 rows for adjustment factors and final saturation values.

Capacity Analysis Module table with 12 columns and 15 rows for delay, LOS, and approach metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: C[18.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module table with 12 columns for flow directions and 10 rows for various volume and delay metrics.

Critical Gap Module table with 12 columns and 2 rows for gap and follow-up time metrics.

Capacity Module table with 12 columns and 4 rows for conflict, potential, and move capacity metrics.

Level of Service Module table with 12 columns and 10 rows for delay, LOS, and approach metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: C[20.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0)

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 613 13 53 144 0 0 0 0 6 0 68
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

Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx 6.5 6.2 7.1 6.5 6.2
FollowUpTim:xxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx 4.0 3.3 3.5 4.0 3.3

Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxxx 626 xxxxx xxxxxx xxxxx 876 144 889 870 620
Potent Cap.: xxxxx xxxxx xxxxxx 965 xxxxx xxxxxx xxxxx 290 909 266 292 492

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxx xxxxx xxxxxx 8.9 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.560
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.0
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Permitted, Split Phase), Rights (Include), Lanes (0 0 0 1 0)

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 0 637 163 25 229 0 0 0 0 43 0 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

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.97 0.97 0.92 0.92 1.00 1.00 1.00 1.00 0.92 1.00 0.92

Capacity Analysis Module:
Vol/Sat: 0.00 0.45 0.45 0.16 0.16 0.00 0.00 0.00 0.00 0.04 0.00 0.04
Crit Moves: ****

Green/Cycle: 0.00 0.68 0.68 0.68 0.68 0.00 0.00 0.00 0.00 0.20 0.00 0.20
Volume/Cap: 0.00 0.66 0.66 0.23 0.23 0.00 0.00 0.00 0.00 0.21 0.00 0.21
Delay/Veh: 0.0 6.0 6.0 3.1 3.1 0.0 0.0 0.0 0.0 17.0 0.0 17.0

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: A[9.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0)

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 3 columns: Critical Gp, FollowUpTim, and numerical values for gap and timing.

Capacity Module:

Table with 3 columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. and numerical values for capacity.

Level Of Service Module:

Table with 3 columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: A[9.4]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0 0 1 0 0)

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Critical Gap Module:

Table with 3 columns: Critical Gp, FollowUpTim, and numerical values for gap and timing.

Capacity Module:

Table with 3 columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. and numerical values for capacity.

Level Of Service Module:

Table with 3 columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.112
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 68.7
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Table with 12 columns representing volume and saturation flow for each approach and movement. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. for each approach and movement.

Table with 12 columns for Capacity Analysis Module. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.596
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 44 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Table with 12 columns representing volume and saturation flow for each approach and movement. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. for each approach and movement.

Table with 12 columns for Capacity Analysis Module. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.170
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 80.4
Optimal Cycle: 180 Level of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 columns for growth/initial/added/passing/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.951
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.4
Optimal Cycle: 109 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements. Table with 12 columns for volume and 12 columns for growth/initial/added/passing/initial fut/user adj/phf/mlf/final volume.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 5.2 Worst Case Level Of Service: F[381.6]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns for traffic volumes and 11 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: E[38.0]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module: Table with 11 columns for traffic volumes and 11 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gap and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module: Table with 11 columns for LOS metrics and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.010
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 55.4
Optimal Cycle: 151 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 10 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.833
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 25.6
Optimal Cycle: 70 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 10 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.858
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.1
Optimal Cycle: 76 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module: Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module: Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.005
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 47.1
Optimal Cycle: 149 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module: Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module: Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.504
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 8.7
Optimal Cycle: 26 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0
Volume Module:
Base Vol: 0 427 0 24 130 0 0 0 0 5 0 226
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: 0 427 0 24 130 0 0 0 0 5 0 226
Added Vol: 4 77 12 0 64 2 14 34 9 5 10 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 4 504 12 24 194 2 14 34 9 10 10 227
User Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
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: 4 544 13 26 210 2 15 37 10 11 11 245
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 4 544 13 26 210 2 15 37 10 11 11 245
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
FinalVolume: 4 544 13 26 210 2 15 37 10 11 11 245
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.62 1.00 0.85 0.36 1.00 0.85 0.49 0.97 0.97 0.73 0.86 0.86
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.79 0.21 1.00 0.04 0.96
Final Sat.: 1176 1900 1615 675 1900 1615 933 1456 385 1387 69 1558
Capacity Analysis Module:
Vol/Sat: 0.00 0.29 0.01 0.04 0.11 0.00 0.02 0.03 0.03 0.01 0.16 0.16
Crit Moves: ****
Green/Cycle: 0.57 0.57 0.57 0.57 0.57 0.57 0.31 0.31 0.31 0.31 0.31 0.31
Volume/Cap: 0.01 0.50 0.01 0.07 0.19 0.00 0.05 0.08 0.08 0.02 0.50 0.50
Delay/Veh: 4.7 6.9 4.7 4.9 5.3 4.7 12.1 12.2 12.2 11.9 14.9 14.9
User DelAdj: 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: 4.7 6.9 4.7 4.9 5.3 4.7 12.1 12.2 12.2 11.9 14.9 14.9
LOS by Move: A A A A A A B B B B B B
HCM2kAvgQ: 0 6 0 0 2 0 0 1 1 0 4 4
Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.8]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 1 0 0
Volume Module:
Base Vol: 0 427 0 0 135 0 0 0 0 0 0 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 1.00
Initial Bse: 0 427 0 0 135 0 0 0 0 0 0 0 0 0
Added Vol: 3 83 0 0 86 1 6 0 10 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 3 510 0 0 221 1 6 0 10 0 0 0
User Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
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: 3 551 0 0 239 1 6 0 11 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 3 551 0 0 239 1 6 0 11 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 240 xxxxx xxxxx xxxxx xxxxx xxxxx 797 797 239 802 797 551
Potent Cap.: 1339 xxxxx xxxxx xxxxx xxxxx xxxxx 359 322 805 305 322 538
Move Cap.: 1339 xxxxx xxxxx xxxxx xxxxx xxxxx 358 321 805 300 321 538
Volume/Cap: 0.00 xxxxx xxxxx xxxxx xxxxx xxxxx 0.02 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxxx xxxxx
Control Del: 7.7 xxxxx xxxxx
LOS by Move: A * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 548 xxxxx xxxxx 0 xxxxx
SharedQueue: 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 7.7 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 11.8 xxxxx xxxxx xxxxx xxxxx
Shared LOS: A * * * * * B * * * *
ApproachDel: xxxxxxx xxxxxxx 11.8 xxxxxxx
ApproachLOS: * * B *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 2.3 Worst Case Level Of Service: C[15.8]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Table with 12 columns for traffic volume and delay metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Table with 12 columns for critical gap and follow-up time metrics. Rows include Critical Gap and FollowUpTim.

Table with 12 columns for capacity and volume metrics. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Table with 12 columns for level of service and queue metrics. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 4.8 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Table with 12 columns for traffic volume and delay metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Table with 12 columns for PCE and delay metrics. Rows include AutoPCE, TruckPCE, ComboPCE, BicyclePCE, and AdjVolume.

Table with 12 columns for delay and queue metrics. Rows include Delay Module, CircVolume, MaxVolume, PedVolume, AdjMaxVol, ApproachVol, ApproachDel, and Queue.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 1.9 Worst Case Level Of Service: B[12.6]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (1, 0, 2, 0, 0)

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume

Critical Gap Module table with columns for Critical Gp, FollowUpTim

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: C[22.0]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0, 0, 1, 0, 0)

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume

Critical Gap Module table with columns for Critical Gp, FollowUpTim

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 FranklinBl/5th Av (South)

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: B[14.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns representing different traffic movements and 10 rows of volume data including Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns and 2 rows showing Critical Gap and FollowUpTim values.

Capacity Module:

Table with 12 columns and 4 rows showing Capacity data including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns and 10 rows showing Level Of Service data including 2Way95thQ, Control Del, LOS by Move, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 1.015
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 43.7
Optimal Cycle: 161 Level Of Service: D

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
-----|-----|-----|-----|
Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol: 78 316 71 238 597 36 239 790 116 101 1416 81
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: 78 316 71 238 597 36 239 790 116 101 1416 81
Added Vol: 19 14 6 0 18 0 0 0 25 9 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 97 330 77 238 615 36 239 790 141 110 1416 81
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: 97 330 77 238 615 36 239 790 141 110 1416 81
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 97 330 77 238 615 36 239 790 141 110 1416 81
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
FinalVolume: 97 330 77 238 615 36 239 790 141 110 1416 81
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.17 1.00 0.85 0.38 1.00 0.85 0.95 0.93 0.93 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.70 0.30 1.00 1.89 0.11
Final Sat.: 331 1900 1615 713 1900 1615 1805 2993 534 1805 3387 194
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.29 0.17 0.05 0.33 0.32 0.02 0.13 0.26 0.26 0.06 0.42 0.42
Crit Moves: **** *
Green/Cycle: 0.33 0.33 0.33 0.33 0.33 0.33 0.13 0.45 0.45 0.10 0.41 0.41
Volume/Cap: 0.89 0.53 0.14 1.01 0.98 0.07 1.01 0.59 0.59 0.64 1.01 1.01
Delay/Veh: 75.9 19.9 16.7 86.2 55.0 16.2 93.0 15.1 15.1 38.3 47.8 47.8
User DelAdj: 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: 75.9 19.9 16.7 86.2 55.0 16.2 93.0 15.1 15.1 38.3 47.8 47.8
LOS by Move: E B B F D B F B B D D D
HCM2kAvgQ: 5 6 1 10 20 1 10 9 9 4 26 26

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 1.183
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 108.3
Optimal Cycle: 180 Level Of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.772
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 15.1
Optimal Cycle: 49 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors like 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 100 Critical Vol./Cap.(X): 1.190
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 58.3
Optimal Cycle: 0 Level Of Service: F

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Table with 12 columns for traffic volume and 12 columns for saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Table with 12 columns for saturation flow. Rows include Adjustment, Lanes, and Final Sat.

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Delay/Veh, Delay Adj, AdjDel/Veh, LOS by Move, ApproachDel, Delay Adj, ApprAdjDel, LOS by Appr, and AllWayAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B[10.7]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic volume and 12 columns for saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Table with 12 columns for saturation flow. Rows include Critical Gap Module and FollowUpTim.

Table with 12 columns for capacity analysis. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Table with 12 columns for level of service. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freepoint Bl / 21st St

Cycle (sec): 70 Critical Vol./Cap.(X): 0.969
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 85.3
Optimal Cycle: 120 Level Of Service: F

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy

Cycle (sec): 70 Critical Vol./Cap.(X): 0.837
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.7
Optimal Cycle: 61 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and 12 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 100 Critical Vol./Cap.(X): 1.059
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 49.1
Optimal Cycle: 0 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic flow metrics across four directions.

Saturation Flow Module table with 12 columns for adjustment factors and saturation flow values.

Capacity Analysis Module table with 12 columns for delay, LOS, and approach delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 24th St / 5th Av

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: C[19.5]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module table with 12 columns for traffic flow metrics across four directions.

Critical Gap Module table with 12 columns for critical gap and follow-up time metrics.

Capacity Module table with 12 columns for conflict volume, potential capacity, and volume/capacity ratios.

Level of Service Module table with 12 columns for delay, LOS, and approach delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 24th St / Donner Wy

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: C[18.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0 0 1 0 0).

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 11 columns for volume counts and 11 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 11 columns for gap values and 3 rows for Critical Gap, FollowUpTim, etc.

Capacity Module: Table with 11 columns for capacity values and 5 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap, etc.

Level Of Service Module: Table with 11 columns for LOS values and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av

Cycle (sec): 50 Critical Vol./Cap.(X): 0.556
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.3
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Permitted, Split Phase), Rights (Include), and Lanes (0 0 0 1 0).

Volume Module: Table with 11 columns for volume counts and 11 rows for various traffic metrics like Base Vol, Growth Adj, etc.

Saturation Flow Module: Table with 11 columns for saturation flow values and 5 rows for Sat/Lane, Adjustment, Lanes, Final Sat., etc.

Capacity Analysis Module: Table with 11 columns for capacity analysis values and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #12 24th St / 10th Av

Average Delay (sec/veh): 3.8 Worst Case Level Of Service: A[8.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-1-0-0)

Volume Module: >> Count Date: 1 Sep 1997 <<. Table with 11 columns for volume counts and 11 rows for various adjustments like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 3 columns for gap values (4.1, 6.4, 6.5, 6.2) and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 3 columns for capacity values (28, 150, 150, 27) and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module: Table with 3 columns for LOS values (0.1, 7.3, A) and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 24th St / 11th Av

Average Delay (sec/veh): 5.1 Worst Case Level Of Service: A[8.7]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0-0-1-0)

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 11 columns for volume counts and 11 rows for various adjustments like Base Vol, Growth Adj, etc.

Critical Gap Module: Table with 3 columns for gap values (4.1, 6.4, 6.5, 6.2) and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 3 columns for capacity values (27, 1600, 1600, 211) and 4 rows for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module: Table with 3 columns for LOS values (0.1, 7.4, A) and 10 rows for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.007
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 37.5
Optimal Cycle: 152 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic flows. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for traffic flows. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for traffic flows. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.695
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.1
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic flows. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with 12 columns for traffic flows. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for traffic flows. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.107
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 61.4
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 1.133
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 65.6
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:except thru movements. Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: F[192.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module table with columns: >> Count Date: 29 Mar 2005 << and rows for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 2 rows: Critical Gp, FollowUpTim and 10 columns of values.

Capacity Module:

Table with 2 rows: Cnflct Vol, Move Cap, Volume/Cap and 10 columns of values.

Level Of Service Module:

Table with 2 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap, SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 43.2 Worst Case Level Of Service: F[1304.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module table with columns: >> Count Date: 29 Mar 2005 << and rows for Base Vol, Growth Adj, Initial Bse, Added Vol, Diverted Tr, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 2 rows: Critical Gp, FollowUpTim and 10 columns of values.

Capacity Module:

Table with 2 rows: Cnflct Vol, Move Cap, Volume/Cap and 10 columns of values.

Level Of Service Module:

Table with 2 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap, SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.000
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 65.4
Optimal Cycle: 142 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 11 rows for various adjustment factors like Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and 11 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.933
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 27.9
Optimal Cycle: 104 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 11 rows for various adjustment factors like Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and 11 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.929
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 33.0
Optimal Cycle: 102 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and saturation flow factors for various approaches and movements.

Saturation Flow Module:

Table with 12 columns representing saturation flow factors for different lane configurations.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics such as Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.133
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 67.7
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and saturation flow factors for various approaches and movements.

Saturation Flow Module:

Table with 12 columns representing saturation flow factors for different lane configurations.

Capacity Analysis Module:

Table with 12 columns representing capacity analysis metrics such as Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.520
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.6
Optimal Cycle: 27 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 0 106 0 154 537 0 0 0 0 18 0 14
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: 0 106 0 154 537 0 0 0 0 18 0 14
Added Vol: 7 130 10 1 161 5 5 11 6 15 28 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 7 236 10 155 698 5 5 11 6 33 28 15
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 8 276 12 181 817 6 6 13 7 39 33 18
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 8 276 12 181 817 6 6 13 7 39 33 18
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
FinalVolume: 8 276 12 181 817 6 6 13 7 39 33 18
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.25 1.00 0.85 0.58 1.00 0.85 0.73 0.95 0.95 0.75 0.95 0.95
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.65 0.35 1.00 0.65 0.35
Final Sat.: 466 1900 1615 1108 1900 1615 1381 1164 635 1429 1173 628
Capacity Analysis Module:
Vol/Sat: 0.02 0.15 0.01 0.16 0.43 0.00 0.00 0.01 0.01 0.03 0.03 0.03
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.03 0.21 0.01 0.24 0.63 0.01 0.02 0.06 0.06 0.14 0.14 0.14
Delay/Veh: 2.6 3.1 2.6 3.2 5.5 2.6 16.1 16.2 16.2 16.7 16.6 16.6
User DelAdj: 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: 2.6 3.1 2.6 3.2 5.5 2.6 16.1 16.2 16.2 16.7 16.6 16.6
LOS by Move: A A A A A A B B B B B B
HCM2kAvgQ: 0 2 0 1 8 0 0 0 0 1 1 1
Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.2 Worst Case Level Of Service: C[18.1]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 106 0 0 555 0 0 0 0 0 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: 0 106 0 0 555 0 0 0 0 0 0 0 0
Added Vol: 8 151 0 0 177 3 2 0 3 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 257 0 0 732 3 2 0 3 0 0 0 0
User Adj: 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.17
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: 9 301 0 0 856 4 2 0 4 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 301 0 0 856 4 2 0 4 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 860 xxxx xxxxx xxxx xxxx xxxxx 1178 1178 858 1179 1179 301
Potent Cap.: 790 xxxx xxxxx xxxx xxxx xxxxx 213 192 359 169 192 744
Move Cap.: 790 xxxx xxxxx xxxx xxxx xxxxx 211 190 359 166 190 744
Volume/Cap: 0.01 xxxx xxxxx xxxx xxxx xxxxx 0.01 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 9.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A * * * * * * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 280 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 9.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 18.1 xxxxx xxxxx xxxx xxxxx
Shared LOS: A * * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 18.1 xxxxxx
ApproachLOS: * * * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3

Average Delay (sec/veh): 3.0 Worst Case Level Of Service: D[28.9]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), Lanes (0, 1, 0, 0).

Volume Module:

Table with 12 columns for traffic volume and delay metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 12 columns for critical gap and follow-up time metrics: Critical Gap, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level Of Service Computation Report

FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C

Average Delay (sec/veh): 8.6 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Yield Sign), Rights (Include), Lanes (1).

Volume Module:

Table with 12 columns for traffic volume and delay metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

PCE Module:

Table with 12 columns for PCE metrics: AutoPCE, TruckPCE, ComboPCE, BicyclePCE, AdjVolume.

Delay Module: >> Time Period: 0.25 hours <<

Table with 4 columns for delay metrics: CircVolume, MaxVolume, PedVolume, AdjMaxVol, ApproachVol, ApproachDel, Queue.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 42.8 Worst Case Level Of Service: F[390.3]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 7.8 Worst Case Level Of Service: F[90.2]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 4 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim.

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 FranklinBl/5th Av (South)

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: D[28.0]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns representing different traffic movements and 10 rows of volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Critical Gap Module:

Table with 12 columns and 2 rows: Critical Gap and FollowUpTim.

Capacity Module:

Table with 12 columns and 4 rows: Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns and 10 rows: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 24th St / Broadway

Cycle (sec): 70 Critical Vol./Cap.(X): 0.557
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 14.8
Optimal Cycle: 43 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: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 20 20 4 20 20
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0
-----|-----|-----|-----|
Volume Module: >> Count Date: 2 Apr 2005 <<
Base Vol: 65 147 29 66 131 89 153 856 54 58 1033 90
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: 65 147 29 66 131 89 153 856 54 58 1033 90
Added Vol: 22 16 7 0 19 0 0 0 26 9 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 87 163 36 66 150 89 153 856 80 67 1033 90
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: 87 163 36 66 150 89 153 856 80 67 1033 90
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 87 163 36 66 150 89 153 856 80 67 1033 90
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
FinalVolume: 87 163 36 66 150 89 153 856 80 67 1033 90
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.51 1.00 0.85 0.47 1.00 0.85 0.95 0.94 0.94 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.83 0.17 1.00 1.84 0.16
Final Sat.: 971 1900 1615 899 1900 1615 1805 3259 305 1805 3281 286
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.09 0.09 0.02 0.07 0.08 0.06 0.08 0.26 0.26 0.04 0.31 0.31
Crit Moves: **** *
Green/Cycle: 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.60 0.60 0.12 0.57 0.57
Volume/Cap: 0.58 0.56 0.14 0.48 0.51 0.36 0.56 0.44 0.44 0.31 0.56 0.56
Delay/Veh: 33.2 29.8 25.9 29.6 28.7 27.4 30.0 7.8 7.8 29.0 10.0 10.0
User DelAdj: 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: 33.2 29.8 25.9 29.6 28.7 27.4 30.0 7.8 7.8 29.0 10.0 10.0
LOS by Move: C C C C C C C A A C B B
HCM2kAvgQ: 3 4 1 2 4 2 4 6 6 2 9 9

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freepoint Bl / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 0.659
Loss Time (sec): 8 (Y+R=4.0 sec) Average Delay (sec/veh): 21.3
Optimal Cycle: 41 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, PasserBy, Initial Fut, User, PHF, Reduct, Reduced, PCE, MLF, Final).

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 21st St / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 0.376
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 10.3
Optimal Cycle: 26 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for adjustment factors (Growth, Initial, Added, PasserBy, Initial Fut, User, PHF, Reduct, Reduced, PCE, MLF, Final).

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 21th St / 4th Av
Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[10.8]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 1 0 0 0 0 0 0 0 0 0 1
Volume Module:
Base Vol: 0 536 83 33 443 0 0 0 0 0 0 0 63
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: 0 536 83 33 443 0 0 0 0 0 0 0 63
Added Vol: 0 0 49 39 2 0 0 0 0 0 0 0 27
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 536 132 72 445 0 0 0 0 0 0 0 90
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: 0 536 132 72 445 0 0 0 0 0 0 0 90
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 536 132 72 445 0 0 0 0 0 0 0 90
Critical Gap Module:
Critical Gap:xxxxx xxxxx xxxxx 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 6.2
FollowUpTim:xxxxx xxxxx xxxxx 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 3.3
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxx 668 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 334
Potent Cap.: xxxxx xxxxx xxxxx 931 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 712
Move Cap.: xxxxx xxxxx xxxxx 931 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 712
Volume/Cap: xxxxx xxxxx xxxxx 0.08 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.13
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx 0.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.4
Control Del:xxxxx xxxxx xxxxx 9.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 10.8
LOS by Move: * * * A * * * * * * * * * * * B
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx
SharedQueue:xxxxx xxxxx xxxxx 0.3 xxxxx xxxxx
Shrd ConDel:xxxxx xxxxx xxxxx 9.2 xxxxx xxxxx
Shared LOS: * * * A * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx xxxxxx 10.8
ApproachLOS: * * * * * B
Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Freeport Bl / 21st St
Cycle (sec): 70 Critical Vol./Cap.(X): 0.674
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.8
Optimal Cycle: 45 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: Split Phase Split Phase Split Phase Split Phase
Rights: Include Include Ignore Include
Min. Green: 10 10 0 0 10 10 10 0 0 10 0 0 0 0
Lanes: 0 1 1 0 0 0 0 0 1 0 1 0 0 0 0 0 0
Volume Module:
Base Vol: 310 588 0 0 496 29 56 0 444 0 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: 310 588 0 0 496 29 56 0 444 0 0 0 0
Added Vol: 0 11 0 0 2 0 38 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 310 599 0 0 498 29 94 0 444 0 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
PHF Volume: 310 599 0 0 498 29 94 0 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 310 599 0 0 498 29 94 0 0 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00
FinalVolume: 310 599 0 0 498 29 94 0 0 0 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.93 1.00 1.00 0.99 0.99 0.95 1.00 1.00 1.00 1.00 1.00
Lanes: 0.68 1.32 0.00 0.00 0.94 0.06 1.00 0.00 1.00 0.00 0.00 0.00
Final Sat.: 1210 2338 0 0 1783 104 1805 0 1900 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.26 0.26 0.00 0.00 0.28 0.28 0.05 0.00 0.00 0.00 0.00 0.00
Crit Moves: **** *
Green/Cycle: 0.35 0.35 0.00 0.00 0.38 0.38 0.14 0.00 0.00 0.00 0.00 0.00
Volume/Cap: 0.73 0.73 0.00 0.00 0.73 0.73 0.36 0.00 0.00 0.00 0.00 0.00
Delay/Veh: 22.3 22.3 0.0 0.0 22.6 22.6 28.0 0.0 0.0 0.0 0.0 0.0
User DelAdj: 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: 22.3 22.3 0.0 0.0 22.6 22.6 28.0 0.0 0.0 0.0 0.0 0.0
LOS by Move: C C A A C C C A A A A A
HCM2kAvgQ: 11 11 0 0 11 11 2 0 0 0 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Freepoint Bl / Vallejo Wy
Cycle (sec): 70 Critical Vol./Cap.(X): 0.511
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 7.3
Optimal Cycle: 27 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing traffic volume and adjustments for various movements across different approaches.

Saturation Flow Module table showing saturation flow rates and adjustments for different lane configurations.

Capacity Analysis Module table showing capacity, critical moves, and delay metrics for each approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 Franklin Bl / 5th Av
Cycle (sec): 50 Critical Vol./Cap.(X): 0.277
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.7
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table showing traffic volume and adjustments for various movements across different approaches.

Saturation Flow Module table showing saturation flow rates and adjustments for different lane configurations.

Capacity Analysis Module table showing capacity, critical moves, and delay metrics for each approach.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.706
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.3
Optimal Cycle: 48 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for growth/initial/added/passing/initial user/PHF/MLF/Reduct/Reduced/PCF/MLF/Final volume.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 21st St/Sutterville Rd
Cycle (sec): 70 Critical Vol./Cap.(X): 0.469
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.8
Optimal Cycle: 44 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for growth/initial/added/passing/initial user/PHF/MLF/Reduct/Reduced/PCF/MLF/Final volume.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.593
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 17.8
Optimal Cycle: 45 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Split Phase and Protected.

Volume Module table with 12 columns and 15 rows showing traffic volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 5 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 11 rows showing Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.906
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 25.2
Optimal Cycle: 88 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Protected and Include.

Volume Module table with 12 columns and 15 rows showing traffic volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns and 5 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns and 11 rows showing Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #18 24th St/Sutterville Rd

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: F[64.4]

Table with 4 columns: Approach (North, South, East, West) and 3 rows: Movement (L-T-R), Control (Stop Sign, Uncontrolled), Rights (Include), Lanes.

Volume Module: Table with 11 columns for traffic flows and 11 rows for metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap, Move Cap, etc.

Level of Service Module: Table with 11 columns for LOS metrics and 11 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 25.4 Worst Case Level Of Service: F[558.3]

Table with 4 columns: Approach (North, South, East, West) and 3 rows: Movement (L-T-R), Control (Stop Sign, Uncontrolled), Rights (Include), Lanes.

Volume Module: Table with 11 columns for traffic flows and 11 rows for metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module: Table with 11 columns for gap metrics and 2 rows for Critical Gp and FollowUpTim.

Capacity Module: Table with 11 columns for capacity metrics and 5 rows for Cnflct Vol, Potent Cap, Move Cap, etc.

Level of Service Module: Table with 11 columns for LOS metrics and 11 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.916
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 34.4
Optimal Cycle: 99 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of volume and adjustment factors.

Saturation Flow Module table with 12 columns and 5 rows showing saturation flow rates and adjustments.

Capacity Analysis Module table with 12 columns and 10 rows showing capacity analysis metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 SR 99 SB Ramp/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.964
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 33.5
Optimal Cycle: 123 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of volume and adjustment factors.

Saturation Flow Module table with 12 columns and 5 rows showing saturation flow rates and adjustments.

Capacity Analysis Module table with 12 columns and 10 rows showing capacity analysis metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.947
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 33.2
Optimal Cycle: 112 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across four approaches.

Saturation Flow Module table with 12 columns for saturation flow factors.

Capacity Analysis Module table with 12 columns for capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 Freeport Bl (South)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.009
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 47.7
Optimal Cycle: 154 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across four approaches.

Saturation Flow Module table with 12 columns for saturation flow factors.

Capacity Analysis Module table with 12 columns for capacity and delay metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 Road A/Road G
Cycle (sec): 50 Critical Vol./Cap.(X): 0.198
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.6
Optimal Cycle: 26 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 0 4 10 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0 1 0 0
Volume Module:
Base Vol: 0 82 0 0 93 0 0 0 0 0 0 0 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 82 0 0 93 0 0 0 0 0 0 0 0 0 0
Added Vol: 6 147 12 1 178 4 7 17 7 14 22 1
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 6 229 12 1 271 4 7 17 7 14 22 1
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 7 256 13 1 304 4 8 19 8 16 25 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 7 256 13 1 304 4 8 19 8 16 25 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
FinalVolume: 7 256 13 1 304 4 8 19 8 16 25 1
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.56 1.00 0.85 0.59 1.00 0.85 0.75 0.96 0.96 0.75 0.99 0.99
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.71 0.29 1.00 0.96 0.04
Final Sat.: 1074 1900 1615 1129 1900 1615 1419 1287 530 1417 1806 82
Capacity Analysis Module:
Vol/Sat: 0.01 0.13 0.01 0.00 0.16 0.00 0.01 0.01 0.01 0.01 0.01 0.01
Crit Moves: ****
Green/Cycle: 0.68 0.68 0.68 0.68 0.68 0.68 0.20 0.20 0.20 0.20 0.20 0.20
Volume/Cap: 0.01 0.20 0.01 0.00 0.23 0.00 0.03 0.07 0.07 0.06 0.07 0.07
Delay/Veh: 2.6 3.0 2.6 2.6 3.1 2.6 16.1 16.3 16.3 16.3 16.3 16.3
User DelAdj: 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: 2.6 3.0 2.6 2.6 3.1 2.6 16.1 16.3 16.3 16.3 16.3 16.3
LOS by Move: A A A A A A B B B B B B
HCM2kAvgQ: 0 2 0 0 2 0 0 0 0 0 0 0
Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #25 Road A/Road E
Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.3]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 1 0 0 0 0 0
Volume Module:
Base Vol: 0 82 0 0 93 0 0 0 0 0 0 0 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 82 0 0 93 0 0 0 0 0 0 0 0 0 0
Added Vol: 8 165 0 0 197 3 4 0 6 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 8 247 0 0 290 3 4 0 6 0 0 0 0 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 9 277 0 0 325 3 4 0 7 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 277 0 0 325 3 4 0 7 0 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 328 xxxx xxxxx xxxx xxxx xxxxx 621 621 326 624 623 277
Potent Cap.: 1243 xxxx xxxxx xxxx xxxx xxxxx 454 406 719 400 405 767
Move Cap.: 1243 xxxx xxxxx xxxx xxxx xxxxx 452 403 719 395 402 767
Volume/Cap: 0.01 xxxx xxxxx xxxx xxxx xxxxx 0.01 0.00 0.01 0.00 0.00 0.00
Level Of Service Module:
2Way95thQ: 0.0 xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Control Del: 7.9 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: A *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 582 xxxxx xxxx 0 xxxxx
SharedQueue: 0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxx xxxxx
Shrd ConDel: 7.9 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 11.3 xxxxx xxxxx xxxx xxxxx
Shared LOS: A *
ApproachDel: xxxxxx xxxxxx 11.3 xxxxxx
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Road A/Area 3
Average Delay (sec/veh): 3.4 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: Uncontrolled Uncontrolled Stop Sign Stop Sign
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: 0 82 0 0 93 0 0 0 0 0 0 0 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 1.00 1.00
Initial Bse: 0 82 0 0 93 0 0 0 0 0 0 0 0 0 0
Added Vol: 49 124 10 27 143 34 28 0 42 9 0 22
PasserByVol: 21 0 0 0 0 0 0 0 21 0 0 0 0 0
Initial Fut: 70 206 10 27 236 34 28 0 63 9 0 22
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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
PHF Volume: 78 231 11 30 264 38 31 0 71 10 0 25
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 78 231 11 30 264 38 31 0 71 10 0 25
Critical Gap Module:
Critical Gp: 4.1 xxxx xxxxxx 4.1 xxxx xxxxxx 7.1 6.5 6.2 7.1 6.5 6.2
FollowUpTim: 2.2 xxxx xxxxxx 2.2 xxxx xxxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Cnflct Vol: 302 xxxx xxxxxx 242 xxxx xxxxxx 749 743 283 772 756 236
Potent Cap.: 1270 xxxx xxxxxx 1336 xxxx xxxxxx 330 346 760 319 340 808
Move Cap.: 1270 xxxx xxxxxx 1336 xxxx xxxxxx 299 316 760 270 310 808
Volume/Cap: 0.06 xxxx xxxxxx 0.02 xxxx xxxxxx 0.10 0.00 0.09 0.04 0.00 0.03
Level Of Service Module:
2Way95thQ: 0.2 xxxx xxxxxx 0.1 xxxx xxxxxx xxxx xxxx xxxxxx xxxx xxxx xxxxxx
Control Del: 8.0 xxxx xxxxxx 7.8 xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx
LOS by Move: A * * A * * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxxx xxxx xxxx xxxxxx xxxx 516 xxxxxx xxxx 512 xxxxxx
SharedQueue:xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx 0.7 xxxxxx xxxxxx 0.2 xxxxxx
Shrd ConDel:xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx 13.7 xxxxxx xxxxxx 12.5 xxxxxx
Shared LOS: *
ApproachDel: xxxxxxx xxxxxxx 13.7 12.5
ApproachLOS: *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level Of Service Computation Report
FHWA Roundabout Method (Future Volume Alternative)

Intersection #27 Road A/Road C
Average Delay (sec/veh): 4.3 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: Yield Sign Yield Sign Yield Sign Yield Sign
Lanes: 1 1 1 1
Volume Module:
Base Vol: 31 82 0 0 93 0 0 0 53 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: 31 82 0 0 93 0 0 0 53 0 0 0
Added Vol: 14 183 0 0 194 0 0 0 11 0 0 0
PasserByVol: 0 21 0 0 21 0 0 0 0 0 0 0
Initial Fut: 45 286 0 0 308 0 0 0 64 0 0 0
User Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
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: 50 320 0 0 345 0 0 0 72 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 50 320 0 0 345 0 0 0 72 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
FinalVolume: 50 320 0 0 345 0 0 0 72 0 0 0
PCE Module:
AutoPCE: 50 320 0 0 345 0 0 0 72 0 0 0
TruckPCE: 0 0 0 0 0 0 0 0 0 0 0 0
ComboPCE: 0 0 0 0 0 0 0 0 0 0 0 0
BicyclePCE: 0 0 0 0 0 0 0 0 0 0 0 0
AdjVolume: 50 320 0 0 345 0 0 0 72 0 0 0
Delay Module: >> Time Period: 0.25 hours <<
CircVolume: 0 50 345 371
MaxVolume: 1200 1173 1014 xxxxxxx
PedVolume: 0 0 0 0
AdjMaxVol: 1200 1173 1014 xxxxxxx
ApproachVol: 371 345 72 xxxxxxx
ApproachDel: 4.3 4.3 3.8 xxxxxxx
Queue: 1.3 1.2 0.2 xxxxx

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Average Delay (sec/veh): 14.0 Worst Case Level Of Service: F[75.8]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns and 12 rows of volume and adjustment data.

Critical Gap Module:

Table with 12 columns and 2 rows of critical 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 10 rows of level of service and delay data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Road A/Area 2

Average Delay (sec/veh): 4.1 Worst Case Level Of Service: D[25.5]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns and 12 rows of volume and adjustment data.

Critical Gap Module:

Table with 12 columns and 2 rows of critical 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 10 rows of level of service and delay data.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C
Cumulative Saturday Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 FranklinBl/5th Av (South)

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: C[15.6]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns representing different traffic movements and 10 rows of volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Critical Gap Module:

Table with 12 columns and 2 rows showing Critical Gap and FollowUpTim values.

Capacity Module:

Table with 12 columns and 4 rows showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns and 10 rows showing Level of Service metrics like 2Way95thQ, Control Del, LOS by Move, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

LOS Worksheets
Cumulative Conditions
Mitigated

Curtis Park Village
Proposed Project (Mitigated)
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Proposed Project (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #4 24th St / 2nd AV
Cycle (sec): 70 Critical Vol./Cap.(X): 0.668
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.1
Optimal Cycle: 37 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 10 10 10 10 10 10 10 10 10 10 10 10
Lanes: 0 0 1 0 0 0 1 0 0 1 0 0 0 0 1 0 0
Volume Module:
Base Vol: 249 443 17 11 139 54 49 94 21 5 110 23
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: 249 443 17 11 139 54 49 94 21 5 110 23
Added Vol: 34 28 0 0 26 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 283 471 17 11 165 54 49 94 21 5 110 23
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: 283 471 17 11 165 54 49 94 21 5 110 23
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 283 471 17 11 165 54 49 94 21 5 110 23
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
FinalVolume: 283 471 17 11 165 54 49 94 21 5 110 23
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.80 0.80 0.80 0.97 0.97 0.85 0.81 0.81 0.81 0.97 0.97 0.97
Lanes: 0.37 0.61 0.02 0.06 0.94 1.00 0.30 0.57 0.13 0.03 0.80 0.17
Final Sat.: 561 934 34 115 1719 1615 462 886 198 67 1466 307
Capacity Analysis Module:
Vol/Sat: 0.50 0.50 0.50 0.10 0.10 0.03 0.11 0.11 0.11 0.08 0.08 0.08
Crit Moves: ****
Green/Cycle: 0.76 0.76 0.76 0.76 0.76 0.76 0.16 0.16 0.16 0.16 0.16 0.16
Volume/Cap: 0.67 0.67 0.67 0.13 0.13 0.04 0.67 0.67 0.67 0.47 0.47 0.47
Delay/Veh: 5.7 5.7 5.7 2.4 2.4 2.2 34.6 34.6 34.6 28.0 28.0 28.0
User DelAdj: 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: 5.7 5.7 5.7 2.4 2.4 2.2 34.6 34.6 34.6 28.0 28.0 28.0
LOS by Move: A A A A A A C C C C C C
HCM2kAvgQ: 9 9 9 1 1 0 5 5 5 3 3 3
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 50 Critical Vol./Cap.(X): 0.608
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.3
Optimal Cycle: 31 Level Of Service: A

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Min. Green, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.085
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 59.0
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights, Min. Green, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various traffic metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.110
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 63.3
Optimal Cycle: 180 Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Ovl			Include			Ovl		
Min. Green:	5	5	5	5	5	9	4	5	5	4	5	9
Lanes:	1	1	0	0	1	1	2	0	1	2	0	1

Volume Module: >> Count Date: 29 Mar 2005 <<

Base Vol:	295	18	630	364	23	168	537	865	173	175	1079	495
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:	295	18	630	364	23	168	537	865	173	175	1079	495
Added Vol:	0	0	25	0	0	0	0	52	0	22	44	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	295	18	655	364	23	168	537	917	173	197	1123	495
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:	295	18	655	364	23	168	537	917	173	197	1123	495
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	295	18	655	364	23	168	537	917	173	197	1123	495
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
FinalVolume:	295	18	655	364	23	168	537	917	173	197	1123	495

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.96	0.96	0.85	0.91	0.91	0.85	0.92	0.93	0.93	0.92	0.95	0.85
Lanes:	1.88	0.12	1.00	2.00	1.00	1.00	2.00	1.68	0.32	2.00	2.00	1.00
Final Sat.:	3420	209	1615	3448	1724	1615	3502	2964	559	3502	3610	1615

Capacity Analysis Module:

Vol/Sat:	0.09	0.09	0.41	0.11	0.01	0.10	0.15	0.31	0.31	0.06	0.31	0.31
Crit Moves:	****			****			****			****		
Green/Cycle:	0.31	0.31	0.38	0.10	0.10	0.23	0.14	0.35	0.35	0.07	0.28	0.38
Volume/Cap:	0.27	0.27	1.07	1.11	0.14	0.45	1.11	0.88	0.88	0.86	1.11	0.82
Delay/Veh:	18.2	18.2	78.0	112.7	29.1	23.8	104.5	28.4	28.4	59.2	88.5	28.1
User DelAdj:	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:	18.2	18.2	78.0	112.7	29.1	23.8	104.5	28.4	28.4	59.2	88.5	28.1
LOS by Move:	B	B	E	F	C	C	F	C	C	E	F	C
HCM2kAvgQ:	3	3	25	10	1	4	13	15	15	5	24	12

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 105 Critical Vol./Cap.(X): 0.789
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 23.2
Optimal Cycle: OPTIMIZED 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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	8	0	4	0	10	4	10	0	0	10	10
Lanes:	0	0	1	0	1	0	1	0	2	0	0	2

Volume Module: except thru movements

Base Vol:	0	1	0	32	0	196	338	1521	0	0	1553	107
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	1	0	32	0	196	338	1521	0	0	1553	107
Added Vol:	0	0	0	126	0	66	76	0	0	0	0	145
PasserByVol:	0	0	0	23	0	28	23	-23	0	0	-28	28
Initial Fut:	0	1	0	181	0	290	437	1498	0	0	1525	280
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	1	0	181	0	290	437	1498	0	0	1525	280
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	0	181	0	290	437	1498	0	0	1525	280
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
FinalVolume:	0	1	0	181	0	290	437	1498	0	0	1525	280

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.89	1.00	0.89	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.00	1.00	0.00	1.38	0.00	1.62	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	1900	0	2343	0	2734	1805	3800	0	0	3800	1615

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.08	0.00	0.11	0.24	0.39	0.00	0.00	0.40	0.17
Crit Moves:	****			****			****			****		
Green/Cycle:	0.00	0.08	0.00	0.09	0.00	0.37	0.28	0.75	0.00	0.00	0.47	0.47
Volume/Cap:	0.00	0.01	0.00	0.86	0.00	0.29	0.86	0.53	0.00	0.00	0.86	0.37
Delay/Veh:	0.0	44.8	0.0	60.1	0.0	23.3	49.6	5.7	0.0	0.0	29.5	18.4
User DelAdj:	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	44.8	0.0	60.1	0.0	23.3	49.6	5.7	0.0	0.0	29.5	18.4
LOS by Move:	A	D	A	E	A	C	D	A	A	A	C	B
HCM2kAvgQ:	0	0	0	7	0	4	16	10	0	0	25	6

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: E[40.4]

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 columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with columns for Critical Gap, FollowUpTim, and various delay values.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 110 Critical Vol./Cap.(X): 0.965
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 49.9
Optimal Cycle: 162 Level Of Service: D

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 columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.815
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 26.4
Optimal Cycle: 66 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<
Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume

Saturation Flow Module:
Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:
Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 95 Critical Vol./Cap.(X): 0.521
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 6.9
Optimal Cycle: OPTIMIZED Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:
Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume

Saturation Flow Module:
Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:
Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Proposed Project (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #4 24th St / 2nd AV
Cycle (sec): 70 Critical Vol./Cap.(X): 0.589
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.0
Optimal Cycle: 31 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 10 10 10 10 10 10 10 10 10 10 10 10
Lanes: 0 0 1! 0 0 0 1 0 0 1 0 0 1! 0 0
Volume Module:
Base Vol: 48 110 9 90 501 256 17 78 153 69 150 32
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: 48 110 9 90 501 256 17 78 153 69 150 32
Added Vol: 55 48 0 0 62 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 103 158 9 90 563 256 17 78 153 69 150 32
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: 103 158 9 90 563 256 17 78 153 69 150 32
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 103 158 9 90 563 256 17 78 153 69 150 32
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
FinalVolume: 103 158 9 90 563 256 17 78 153 69 150 32
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.64 0.64 0.64 0.92 0.92 0.85 0.89 0.89 0.89 0.81 0.81 0.81
Lanes: 0.38 0.59 0.03 0.14 0.86 1.00 0.07 0.31 0.62 0.27 0.60 0.13
Final Sat.: 467 716 41 240 1499 1615 116 533 1045 424 922 197
Capacity Analysis Module:
Vol/Sat: 0.22 0.22 0.22 0.38 0.38 0.16 0.15 0.15 0.15 0.16 0.16 0.16
Crit Moves: ****
Green/Cycle: 0.64 0.64 0.64 0.64 0.64 0.64 0.28 0.28 0.28 0.28 0.28 0.28
Volume/Cap: 0.35 0.35 0.35 0.59 0.59 0.25 0.53 0.53 0.53 0.59 0.59 0.59
Delay/Veh: 6.2 6.2 6.2 8.2 8.2 5.6 22.6 22.6 22.6 24.1 24.1 24.1
User DelAdj: 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: 6.2 6.2 6.2 8.2 8.2 5.6 22.6 22.6 22.6 24.1 24.1 24.1
LOS by Move: A A A A A A C C C C C C
HCM2k95thQ: 6 6 6 16 16 5 10 10 10 11 11 11
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 50 Critical Vol./Cap.(X): 0.596
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.8
Optimal Cycle: 30 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 for traffic volume and 12 rows for various adjustment factors like Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.010
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 33.5
Optimal Cycle: 161 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 traffic volume and 12 rows for various adjustment factors like Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.015
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 41.7
Optimal Cycle: 143 Level of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 105 Critical Vol./Cap.(X): 0.879
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 34.7
Optimal Cycle: OPTIMIZED Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:except thru movements

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd
Average Delay (sec/veh): 54.6 Worst Case Level Of Service: F[1726.1]
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 0 0 0 0 1 0 0 0 1 0 0 0 0 1 1 0
Volume Module:
Base Vol: 0 0 0 37 0 85 75 1448 0 0 1567 13
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 0 0 37 0 85 75 1448 0 0 1567 13
Added Vol: 0 0 0 0 0 0 0 302 0 0 360 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 37 0 85 75 1750 0 0 1927 13
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 0 0 37 0 85 75 1750 0 0 1927 13
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 0 0 37 0 85 75 1750 0 0 1927 13
Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxx 6.8 6.5 6.9 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx
FollowUpTim:xxxxx xxxxx xxxxx 3.5 4.0 3.3 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxx 2959 3834 970 1940 xxxxx xxxxx xxxxx xxxxx xxxxx
Potent Cap.: xxxxx xxxxx xxxxx 12 4 257 307 xxxxx xxxxx xxxxx xxxxx xxxxx
Move Cap.: xxxxx xxxxx xxxxx 10 3 257 307 xxxxx xxxxx xxxxx xxxxx xxxxx
Volume/Cap: xxxxx xxxxx xxxxx 3.89 0.00 0.33 0.24 xxxxx xxxxx xxxxx xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.9 xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 20.5 xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: * * * * * C * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx 29 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue:xxxxxx xxxxx xxxxx xxxxx 14.7 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel:xxxxxx xxxxx xxxxx xxxxx 1726 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * * F * * * * *
ApproachDel: xxxxxx 1726.1 xxxxxxx xxxxxxx
ApproachLOS: * F * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd
Cycle (sec): 110 Critical Vol./Cap.(X): 0.969
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 48.2
Optimal Cycle: 167 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 2 0 1 1 0 1 1 0
Volume Module:
Base Vol: 203 329 206 165 528 137 78 987 390 196 1278 179
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: 203 329 206 165 528 137 78 987 390 196 1278 179
Added Vol: 10 2 0 2 2 0 0 176 126 0 350 10
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 213 331 206 167 530 137 78 1163 516 196 1628 189
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: 213 331 206 167 530 137 78 1163 516 196 1628 189
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 213 331 206 167 530 137 78 1163 516 196 1628 189
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
FinalVolume: 213 331 206 167 530 137 78 1163 516 196 1628 189
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.89 0.89 0.95 0.92 0.92 0.95 0.95 0.85 0.95 0.93 0.93
Lanes: 1.00 1.23 0.77 1.00 1.59 0.41 1.00 2.00 1.00 1.00 1.79 0.21
Final Sat.: 1805 2096 1305 1805 2780 718 1805 3610 1615 1805 3183 369
Capacity Analysis Module:
Vol/Sat: 0.12 0.16 0.16 0.09 0.19 0.19 0.04 0.32 0.32 0.11 0.51 0.51
Crit Moves: **** *
Green/Cycle: 0.12 0.20 0.20 0.12 0.19 0.19 0.06 0.43 0.43 0.15 0.52 0.52
Volume/Cap: 0.99 0.80 0.80 0.80 0.99 0.99 0.68 0.74 0.74 0.74 0.99 0.99
Delay/Veh: 107.2 49.2 49.2 67.4 76.8 76.8 65.6 28.0 30.1 55.8 45.3 45.3
User DelAdj: 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: 107.2 49.2 49.2 67.4 76.8 76.8 65.6 28.0 30.1 55.8 45.3 45.3
LOS by Move: F D D E E E E C C E D D
HCM2k95thQ: 21 21 21 15 30 30 8 31 27 15 62 62
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.813
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 28.4
Optimal Cycle: 65 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 95 Critical Vol./Cap.(X): 1.007
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 32.3
Optimal Cycle: OPTIMIZED Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Proposed Project (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.714
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 16.6
Optimal Cycle: 49 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: Protected Prot+Permit Protected Protected
Rights: Ignore Include Include Ovl
Min. Green: 0 10 10 4 10 10 0 0 0 4 4 4
Lanes: 0 0 2 0 1 1 0 2 0 0 0 0 0 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol: 0 766 834 340 788 0 0 0 0 684 0 442
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: 0 766 834 340 788 0 0 0 0 684 0 442
Added Vol: 0 0 114 0 0 0 0 0 0 92 0 8
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 766 948 340 788 0 0 0 0 776 0 450
User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 0 766 0 340 788 0 0 0 0 776 0 450
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 766 0 340 788 0 0 0 0 776 0 450
PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 0 766 0 340 788 0 0 0 0 776 0 450
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.95 1.00 0.95 0.95 1.00 1.00 1.00 1.00 0.92 1.00 0.85
Lanes: 0.00 2.00 1.00 1.00 2.00 0.00 0.00 0.00 0.00 2.00 0.00 1.00
Final Sat.: 0 3610 1900 1805 3610 0 0 0 0 3502 0 1615
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.00 0.21 0.00 0.19 0.22 0.00 0.00 0.00 0.00 0.22 0.00 0.28
Crit Moves: **** ****
Green/Cycle: 0.00 0.30 0.00 0.60 0.56 0.00 0.00 0.00 0.00 0.31 0.00 0.57
Volume/Cap: 0.00 0.71 0.00 0.58 0.39 0.00 0.00 0.00 0.00 0.71 0.00 0.49
Delay/Veh: 0.0 24.2 0.0 11.5 8.8 0.0 0.0 0.0 0.0 23.7 0.0 9.2
User DelAdj: 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 24.2 0.0 11.5 8.8 0.0 0.0 0.0 0.0 23.7 0.0 9.2
LOS by Move: A C A B A A A A A C A A
HCM2k95thQ: 0 17 0 10 10 0 0 0 0 17 0 12

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.531
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 16.8
Optimal Cycle: 41 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors (Growth, Initial, Added, Passer, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 105 Critical Vol./Cap.(X): 0.811
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 30.3
Optimal Cycle: OPTIMIZED Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and 12 columns for various adjustment factors (Growth, Initial, Added, Passer, 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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Average Delay, Control, Rights, Lanes, Volume Module, Critical Gap Module, Capacity Module, and Level of Service Module.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Average Delay, Control, Rights, Lanes, Volume Module, Sat/Lane, Adjustment, Lanes, Final Sat., Capacity Analysis Module, and LOS by Move.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.771
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 25.3
Optimal Cycle: 58 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module table with 12 columns for saturation flow and adjustment factors.

Capacity Analysis Module table with 12 columns for capacity, cycle, delay, and LOS by movement.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Proposed Project (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 95 Critical Vol./Cap.(X): 0.779
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.4
Optimal Cycle: OPTIMIZED Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for volume and growth factors across different approaches and movements.

Saturation Flow Module table with 12 columns for saturation flow and adjustment factors.

Capacity Analysis Module table with 12 columns for capacity, cycle, delay, and LOS by movement.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 70 Critical Vol./Cap.(X): 0.668
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.1
Optimal Cycle: 37 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 10 10 10 10 10 10 10 10 10 10 10 10
Lanes: 0 0 1 0 0 0 1 0 0 1 0 0 0 0 1 0 0
-----|-----|-----|-----|
Volume Module:
Base Vol: 249 443 17 11 139 54 49 94 21 5 110 23
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: 249 443 17 11 139 54 49 94 21 5 110 23
Added Vol: 35 27 0 0 26 0 0 0 1 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 284 470 17 11 165 54 49 94 22 5 110 23
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: 284 470 17 11 165 54 49 94 22 5 110 23
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 284 470 17 11 165 54 49 94 22 5 110 23
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
FinalVolume: 284 470 17 11 165 54 49 94 22 5 110 23
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.80 0.80 0.80 0.97 0.97 0.85 0.82 0.82 0.82 0.97 0.97 0.97
Lanes: 0.37 0.61 0.02 0.06 0.94 1.00 0.30 0.57 0.13 0.03 0.80 0.17
Final Sat.: 563 932 34 115 1719 1615 460 882 206 67 1466 307
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.50 0.50 0.50 0.10 0.10 0.03 0.11 0.11 0.11 0.08 0.08 0.08
Crit Moves: **** ****
Green/Cycle: 0.75 0.75 0.75 0.75 0.75 0.75 0.16 0.16 0.16 0.16 0.16 0.16
Volume/Cap: 0.67 0.67 0.67 0.13 0.13 0.04 0.67 0.67 0.67 0.47 0.47 0.47
Delay/Veh: 5.8 5.8 5.8 2.4 2.4 2.2 34.5 34.5 34.5 27.9 27.9 27.9
User DelAdj: 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: 5.8 5.8 5.8 2.4 2.4 2.2 34.5 34.5 34.5 27.9 27.9 27.9
LOS by Move: A A A A A A C C C C C C
HCM2k95thQ: 17 17 17 2 2 1 9 9 9 7 7 7

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 50 Critical Vol./Cap.(X): 0.608
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.3
Optimal Cycle: 31 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.085
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 58.8
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.110
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 63.4
Optimal Cycle: 180 Level of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and 12 columns for various adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 105 Critical Vol./Cap.(X): 0.788
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.5
Optimal Cycle: OPTIMIZED Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements. Table with 12 columns for volume and 12 columns for various adjustment factors.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd
Average Delay (sec/veh): 0.8 Worst Case Level Of Service: E[40.4]
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 0 0 0 0 1 0 2 0 0 0 0 0 1 1 0
Volume Module:
Base Vol: 0 0 0 2 0 44 60 1453 0 0 1693 53
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 0 0 2 0 44 60 1453 0 0 1693 53
Added Vol: 0 0 0 0 0 0 0 127 0 0 146 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 2 0 44 60 1580 0 0 1839 53
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 0 0 2 0 44 60 1580 0 0 1839 53
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 0 0 2 0 44 60 1580 0 0 1839 53
Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxx 6.8 6.5 6.9 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx
FollowUpTim:xxxxx xxxxx xxxxx 3.5 4.0 3.3 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxx 2776 3566 946 1892 xxxxx xxxxx xxxxx xxxxx xxxxx
Potent Cap.: xxxxx xxxxx xxxxx 16 6 266 320 xxxxx xxxxx xxxxx xxxxx xxxxx
Move Cap.: xxxxx xxxxx xxxxx 13 5 266 320 xxxxx xxxxx xxxxx xxxxx xxxxx
Volume/Cap: xxxxx xxxxx xxxxx 0.15 0.00 0.17 0.19 xxxxx xxxxx xxxxx xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.7 xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 18.8 xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: * * * * * C * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx 147 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue:xxxxx xxxxx xxxxx xxxxx 1.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel:xxxxx xxxxx xxxxx xxxxx 40.4 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * * E * * * * *
ApproachDel: xxxxxx 40.4 xxxxxxx xxxxxxx
ApproachLOS: * E * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd
Cycle (sec): 110 Critical Vol./Cap.(X): 0.965
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 49.9
Optimal Cycle: 162 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 2 0 1 1 0 1 1 0
Volume Module:
Base Vol: 395 532 167 154 246 84 207 912 282 139 1301 80
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: 395 532 167 154 246 84 207 912 282 139 1301 80
Added Vol: 4 1 0 9 8 0 0 73 55 0 143 3
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 399 533 167 163 254 84 207 985 337 139 1444 83
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: 399 533 167 163 254 84 207 985 337 139 1444 83
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 399 533 167 163 254 84 207 985 337 139 1444 83
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
FinalVolume: 399 533 167 163 254 84 207 985 337 139 1444 83
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.92 0.92 0.95 0.91 0.91 0.95 0.95 0.85 0.95 0.94 0.94
Lanes: 1.00 1.52 0.48 1.00 1.50 0.50 1.00 2.00 1.00 1.00 1.89 0.11
Final Sat.: 1805 2650 830 1805 2612 864 1805 3610 1615 1805 3386 195
Capacity Analysis Module:
Vol/Sat: 0.22 0.20 0.20 0.09 0.10 0.10 0.11 0.27 0.21 0.08 0.43 0.43
Crit Moves: **** *
Green/Cycle: 0.23 0.23 0.23 0.10 0.10 0.10 0.12 0.44 0.44 0.12 0.44 0.44
Volume/Cap: 0.96 0.88 0.88 0.88 0.96 0.96 0.96 0.62 0.48 0.62 0.96 0.96
Delay/Veh: 76.9 52.5 52.5 84.5 87.8 87.8 99.4 24.7 22.5 51.2 44.9 44.9
User DelAdj: 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: 76.9 52.5 52.5 84.5 87.8 87.8 99.4 24.7 22.5 51.2 44.9 44.9
LOS by Move: E D D F F F F C C D D D
HCM2k95thQ: 31 27 27 16 18 18 20 25 15 11 52 52
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.815
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 26.4
Optimal Cycle: 66 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and growth factors across different approaches.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 95 Critical Vol./Cap.(X): 0.591
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 7.0
Optimal Cycle: OPTIMIZED Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and growth factors across different approaches.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #4 24th St / 2nd AV
Cycle (sec): 70 Critical Vol./Cap.(X): 0.588
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.0
Optimal Cycle: 31 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 10 10 10 10 10 10 10 10 10 10 10 10
Lanes: 0 0 1 0 0 0 1 0 0 1 0 0 0 0 1 0 0
Volume Module:
Base Vol: 48 110 9 90 501 256 17 78 153 69 150 32
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: 48 110 9 90 501 256 17 78 153 69 150 32
Added Vol: 56 48 0 0 61 0 0 0 2 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 104 158 9 90 562 256 17 78 155 69 150 32
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: 104 158 9 90 562 256 17 78 155 69 150 32
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 104 158 9 90 562 256 17 78 155 69 150 32
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
FinalVolume: 104 158 9 90 562 256 17 78 155 69 150 32
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.64 0.64 0.64 0.92 0.92 0.85 0.89 0.89 0.89 0.81 0.81 0.81
Lanes: 0.38 0.59 0.03 0.14 0.86 1.00 0.07 0.31 0.62 0.27 0.60 0.13
Final Sat.: 469 713 41 240 1499 1615 115 528 1049 424 921 196
Capacity Analysis Module:
Vol/Sat: 0.22 0.22 0.22 0.38 0.38 0.16 0.15 0.15 0.15 0.16 0.16 0.16
Crit Moves: ****
Green/Cycle: 0.64 0.64 0.64 0.64 0.64 0.64 0.28 0.28 0.28 0.28 0.28 0.28
Volume/Cap: 0.35 0.35 0.35 0.59 0.59 0.25 0.53 0.53 0.53 0.59 0.59 0.59
Delay/Veh: 6.2 6.2 6.2 8.2 8.2 5.6 22.7 22.7 22.7 24.0 24.0 24.0
User DelAdj: 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: 6.2 6.2 6.2 8.2 8.2 5.6 22.7 22.7 22.7 24.0 24.0 24.0
LOS by Move: A A A A A A C C C C C C
HCM2k95thQ: 6 6 6 16 16 5 10 10 10 11 11 11
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 50 Critical Vol./Cap.(X): 0.597
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.8
Optimal Cycle: 30 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and 3 rows: Movement, Control, Rights, Min. Green, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various adjustment factors like Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.010
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 33.5
Optimal Cycle: 161 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and 3 rows: Movement, Control, Rights, Min. Green, Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various adjustment factors like Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.015
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 41.7
Optimal Cycle: 143 Level of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 105 Critical Vol./Cap.(X): 0.880
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 34.8
Optimal Cycle: OPTIMIZED Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:except thru movements. Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume.

Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd
Average Delay (sec/veh): 54.9 Worst Case Level Of Service: F[1737.2]
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 0 0 0 1 0 0 1 0 0 0 0 1 1 0
Volume Module:
Base Vol: 0 0 0 37 0 85 75 1448 0 0 1567 13
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 0 0 37 0 85 75 1448 0 0 1567 13
Added Vol: 0 0 0 0 0 0 0 302 0 0 363 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 37 0 85 75 1750 0 0 1930 13
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 0 0 37 0 85 75 1750 0 0 1930 13
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 0 0 37 0 85 75 1750 0 0 1930 13
Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxx 6.8 6.5 6.9 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx
FollowUpTim:xxxxx xxxxx xxxxx 3.5 4.0 3.3 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxx 2962 3837 972 1943 xxxxx xxxxx xxxxx xxxxx xxxxx
Potent Cap.: xxxxx xxxxx xxxxx 12 4 256 306 xxxxx xxxxx xxxxx xxxxx xxxxx
Move Cap.: xxxxx xxxxx xxxxx 9 3 256 306 xxxxx xxxxx xxxxx xxxxx xxxxx
Volume/Cap: xxxxx xxxxx xxxxx 3.91 0.00 0.33 0.25 xxxxx xxxxx xxxxx xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.9 xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 20.6 xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: * * * * * C * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx 29 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue:xxxxxx xxxxx xxxxx xxxxx 14.8 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel:xxxxxx xxxxx xxxxx xxxxx 1737 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * * F * * * * *
ApproachDel: xxxxxx 1737.2 xxxxxxx xxxxxxx
ApproachLOS: * F * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd
Cycle (sec): 110 Critical Vol./Cap.(X): 0.969
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 48.2
Optimal Cycle: 166 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 2 0 1 1 0 1 1 0
Volume Module:
Base Vol: 203 329 206 165 528 137 78 987 390 196 1278 179
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: 203 329 206 165 528 137 78 987 390 196 1278 179
Added Vol: 10 2 0 2 2 0 0 176 126 0 353 7
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 213 331 206 167 530 137 78 1163 516 196 1631 186
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: 213 331 206 167 530 137 78 1163 516 196 1631 186
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 213 331 206 167 530 137 78 1163 516 196 1631 186
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
FinalVolume: 213 331 206 167 530 137 78 1163 516 196 1631 186
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.89 0.89 0.95 0.92 0.92 0.95 0.95 0.85 0.95 0.94 0.94
Lanes: 1.00 1.23 0.77 1.00 1.59 0.41 1.00 2.00 1.00 1.00 1.80 0.20
Final Sat.: 1805 2096 1305 1805 2780 718 1805 3610 1615 1805 3192 364
Capacity Analysis Module:
Vol/Sat: 0.12 0.16 0.16 0.09 0.19 0.19 0.04 0.32 0.32 0.11 0.51 0.51
Crit Moves: **** *
Green/Cycle: 0.12 0.20 0.20 0.12 0.19 0.19 0.06 0.43 0.43 0.15 0.52 0.52
Volume/Cap: 0.99 0.80 0.80 0.80 0.99 0.99 0.68 0.74 0.74 0.74 0.99 0.99
Delay/Veh: 107.0 49.2 49.2 67.3 76.6 76.6 65.6 28.0 30.1 55.9 45.2 45.2
User DelAdj: 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: 107.0 49.2 49.2 67.3 76.6 76.6 65.6 28.0 30.1 55.9 45.2 45.2
LOS by Move: F D D E E E E C C E D D
HCM2k95thQ: 21 21 21 14 30 30 8 31 27 15 62 62
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.813
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 28.4
Optimal Cycle: 65 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and saturation flow factors for various approaches and movements.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 95 Critical Vol./Cap.(X): 1.010
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 33.1
Optimal Cycle: OPTIMIZED Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and saturation flow factors for various approaches and movements.

Saturation Flow Module:

Table with 12 columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.714
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 16.6
Optimal Cycle: 49 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: Protected Prot+Permit Protected Protected
Rights: Ignore Include Include Ovl
Min. Green: 0 10 10 4 10 10 0 0 0 4 4 4
Lanes: 0 0 2 0 1 1 0 2 0 0 0 0 0 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol: 0 766 834 340 788 0 0 0 0 684 0 442
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: 0 766 834 340 788 0 0 0 0 684 0 442
Added Vol: 0 0 114 0 0 0 0 0 0 92 0 8
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 766 948 340 788 0 0 0 0 776 0 450
User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 0 766 0 340 788 0 0 0 0 776 0 450
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 766 0 340 788 0 0 0 0 776 0 450
PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 0 766 0 340 788 0 0 0 0 776 0 450
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.95 1.00 0.95 0.95 1.00 1.00 1.00 1.00 0.92 1.00 0.85
Lanes: 0.00 2.00 1.00 1.00 2.00 0.00 0.00 0.00 0.00 2.00 0.00 1.00
Final Sat.: 0 3610 1900 1805 3610 0 0 0 0 3502 0 1615
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.00 0.21 0.00 0.19 0.22 0.00 0.00 0.00 0.00 0.22 0.00 0.28
Crit Moves: **** ****
Green/Cycle: 0.00 0.30 0.00 0.60 0.56 0.00 0.00 0.00 0.00 0.31 0.00 0.57
Volume/Cap: 0.00 0.71 0.00 0.58 0.39 0.00 0.00 0.00 0.00 0.71 0.00 0.49
Delay/Veh: 0.0 24.2 0.0 11.5 8.8 0.0 0.0 0.0 0.0 23.7 0.0 9.2
User DelAdj: 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 24.2 0.0 11.5 8.8 0.0 0.0 0.0 0.0 23.7 0.0 9.2
LOS by Move: A C A B A A A A A C A A
HCM2kAvgQ: 0 9 0 5 5 0 0 0 0 9 0 6

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.531
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 16.8
Optimal Cycle: 41 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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Ovl			Include			Ovl		
Min. Green:	5	5	5	5	5	9	4	5	5	4	5	9
Lanes:	1	1	0	0	1	1	0	2	0	1	2	0

Volume Module:

Base Vol:	57	3	73	186	10	240	274	794	97	83	924	203
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:	57	3	73	186	10	240	274	794	97	83	924	203
Added Vol:	0	0	70	0	0	0	0	148	0	56	127	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	57	3	143	186	10	240	274	942	97	139	1051	203
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:	57	3	143	186	10	240	274	942	97	139	1051	203
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	3	143	186	10	240	274	942	97	139	1051	203
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
FinalVolume:	57	3	143	186	10	240	274	942	97	139	1051	203

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.96	0.96	0.85	0.91	0.91	0.85	0.92	0.94	0.94	0.92	0.95	0.85
Lanes:	1.90	0.10	1.00	2.00	1.00	1.00	2.00	1.81	0.19	2.00	2.00	1.00
Final Sat.:	3448	181	1615	3448	1724	1615	3502	3227	332	3502	3610	1615

Capacity Analysis Module:

Vol/Sat:	0.02	0.02	0.09	0.05	0.01	0.15	0.08	0.29	0.29	0.04	0.29	0.13
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.07	0.07	0.18	0.12	0.12	0.26	0.13	0.53	0.53	0.10	0.50	0.62
Volume/Cap:	0.23	0.23	0.50	0.45	0.05	0.58	0.58	0.55	0.55	0.38	0.58	0.20
Delay/Veh:	31.1	31.1	27.6	29.3	27.2	24.8	30.3	11.2	11.2	29.9	12.8	5.8
User DelAdj:	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:	31.1	31.1	27.6	29.3	27.2	24.8	30.3	11.2	11.2	29.9	12.8	5.8
LOS by Move:	C	C	C	C	C	C	C	B	B	C	B	A
HCM2kAvgQ:	1	1	3	3	0	5	4	8	8	2	9	2

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 105 Critical Vol./Cap.(X): 0.810
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.9
Optimal Cycle: OPTIMIZED 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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	8	0	4	0	10	4	10	0	0	10	10
Lanes:	0	0	1	0	1	0	1	0	2	0	0	2

Volume Module:

Base Vol:	0	0	0	24	0	144	52	871	0	0	1066	74
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	0	0	24	0	144	52	871	0	0	1066	74
Added Vol:	0	0	0	328	0	183	217	0	0	0	0	404
PasserByVol:	0	0	0	94	0	114	94	-94	0	0	-114	114
Initial Fut:	0	0	0	446	0	441	363	777	0	0	952	592
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	0	0	446	0	441	363	777	0	0	952	592
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	446	0	441	363	777	0	0	952	592
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
FinalVolume:	0	0	0	446	0	441	363	777	0	0	952	592

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.90	1.00	0.90	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.00	1.00	0.00	1.50	0.00	1.50	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	1900	0	2575	0	2566	1805	3800	0	0	3800	1615

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.17	0.20	0.20	0.00	0.00	0.25	0.37
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.00	0.00	0.00	0.21	0.00	0.46	0.25	0.70	0.00	0.00	0.45	0.45
Volume/Cap:	0.00	0.00	0.00	0.81	0.00	0.37	0.81	0.29	0.00	0.00	0.55	0.81
Delay/Veh:	0.0	0.0	0.0	43.9	0.0	18.5	47.8	6.0	0.0	0.0	21.4	31.6
User DelAdj:	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	0.0	0.0	43.9	0.0	18.5	47.8	6.0	0.0	0.0	21.4	31.6
LOS by Move:	A	A	A	D	A	B	D	A	A	A	C	C
HCM2kAvgQ:	0	0	0	11	0	6	13	5	0	0	11	18

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd
Average Delay (sec/veh): 34.4 Worst Case Level Of Service: F[806.0]
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 0 0 0 0 0 1 0 0 1 0 2 0 0 0 0 0 1 1 0
Volume Module:
Base Vol: 0 0 0 58 0 73 69 993 0 0 1146 27
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 0 0 58 0 73 69 993 0 0 1146 27
Added Vol: 0 0 0 0 0 0 0 0 328 0 0 407 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 58 0 73 69 1321 0 0 1553 27
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 0 0 58 0 73 69 1321 0 0 1553 27
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 0 0 58 0 73 69 1321 0 0 1553 27
Critical Gap Module:
Critical Gap: 6.8 6.5 6.9 4.1
FollowUpTim: 3.5 4.0 3.3 2.2
Capacity Module:
Conflict Vol: 2365 3026 790 1580
Potent Cap.: 30 13 337 422
Move Cap.: 26 11 337 422
Volume/Cap: 2.20 0.00 0.22 0.16
Level Of Service Module:
2Way95thQ: 0.6
Control Del: 15.2
LOS by Move: C
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: 54
SharedQueue: 13.3
Shrd ConDel: 806
Shared LOS: F
ApproachDel: 806.0
ApproachLOS: F
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd
Cycle (sec): 110 Critical Vol./Cap.(X): 0.813
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 35.1
Optimal Cycle: 83 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 2 0 1 1 0 1 1 0
Volume Module:
Base Vol: 114 197 231 211 231 83 73 856 207 237 976 138
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: 114 197 231 211 231 83 73 856 207 237 976 138
Added Vol: 11 1 0 4 4 0 0 191 137 0 396 6
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 125 198 231 215 235 83 73 1047 344 237 1372 144
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: 125 198 231 215 235 83 73 1047 344 237 1372 144
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 125 198 231 215 235 83 73 1047 344 237 1372 144
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
FinalVolume: 125 198 231 215 235 83 73 1047 344 237 1372 144
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.87 0.87 0.95 0.91 0.91 0.95 0.95 0.85 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.48 0.52 1.00 2.00 1.00 1.00 1.81 0.19
Final Sat.: 1805 1659 1659 1805 2564 905 1805 3610 1615 1805 3221 338
Capacity Analysis Module:
Vol/Sat: 0.07 0.12 0.14 0.12 0.09 0.09 0.04 0.29 0.21 0.13 0.43 0.43
Crit Moves:
Green/Cycle: 0.13 0.17 0.17 0.14 0.18 0.18 0.06 0.40 0.40 0.18 0.51 0.51
Volume/Cap: 0.52 0.71 0.83 0.83 0.52 0.52 0.64 0.73 0.53 0.73 0.83 0.83
Delay/Veh: 46.2 47.1 54.8 65.0 41.7 41.7 61.4 30.0 26.2 50.6 25.8 25.8
User DelAdj: 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: 46.2 47.1 54.8 65.0 41.7 41.7 61.4 30.0 26.2 50.6 25.8 25.8
LOS by Move: D D D E D D E C C D C C
HCM2kAvgQ: 5 8 10 9 6 6 4 17 9 9 25 25
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.771
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 25.3
Optimal Cycle: 58 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 2 5th Avenue (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 95 Critical Vol./Cap.(X): 0.784
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.7
Optimal Cycle: OPTIMIZED Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th Avenue (Mitigated)
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Option 3 10th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 70 Critical Vol./Cap.(X): 0.668
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.1
Optimal Cycle: 37 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:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Lanes:	0	0	1	0	1	0	0	0	1	0	0	1

Volume Module:

Base Vol:	249	443	17	11	139	54	49	94	21	5	110	23
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:	249	443	17	11	139	54	49	94	21	5	110	23
Added Vol:	35	27	0	0	26	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	284	470	17	11	165	54	49	94	21	5	110	23
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:	284	470	17	11	165	54	49	94	21	5	110	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	284	470	17	11	165	54	49	94	21	5	110	23
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
FinalVolume:	284	470	17	11	165	54	49	94	21	5	110	23

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.80	0.80	0.80	0.97	0.97	0.85	0.81	0.81	0.81	0.97	0.97	0.97
Lanes:	0.37	0.61	0.02	0.06	0.94	1.00	0.30	0.57	0.13	0.03	0.80	0.17
Final Sat.:	563	932	34	115	1719	1615	462	886	198	67	1466	307

Capacity Analysis Module:

Vol/Sat:	0.50	0.50	0.50	0.10	0.10	0.03	0.11	0.11	0.11	0.08	0.08	0.08
Crit Moves:	****						****					
Green/Cycle:	0.76	0.76	0.76	0.76	0.76	0.76	0.16	0.16	0.16	0.16	0.16	0.16
Volume/Cap:	0.67	0.67	0.67	0.13	0.13	0.04	0.67	0.67	0.67	0.47	0.47	0.47
Delay/Veh:	5.7	5.7	5.7	2.4	2.4	2.2	34.6	34.6	34.6	28.0	28.0	28.0
User DelAdj:	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:	5.7	5.7	5.7	2.4	2.4	2.2	34.6	34.6	34.6	28.0	28.0	28.0
LOS by Move:	A	A	A	A	A	A	C	C	C	C	C	C
HCM2k95thQ:	17	17	17	2	2	1	9	9	9	7	7	7

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 30 Critical Vol./Cap.(X): 0.667
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.8
Optimal Cycle: OPTIMIZED Level Of Service: A

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 11 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.085
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 58.8
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Approach, Movement, Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 11 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 5 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 11 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.110
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 63.4
Optimal Cycle: 180 Level of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Includes Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Grid of traffic volume data for various movements.

Saturation Flow Module: Grid of saturation flow data for different lane configurations.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 105 Critical Vol./Cap.(X): 0.784
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.1
Optimal Cycle: OPTIMIZED Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Includes Control, Rights, Min. Green, and Lanes.

Volume Module: except thru movements. Grid of traffic volume data for various movements.

Saturation Flow Module: Grid of saturation flow data for different lane configurations.

Capacity Analysis Module: Grid of capacity analysis data including Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 9.8 Worst Case Level Of Service: F[532.9]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Table with 11 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Table for Critical Gap Module with columns for Critical Gap, FollowUpTim, and various delay metrics.

Table for Capacity Module with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Table for Level Of Service Module with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 110 Critical Vol./Cap.(X): 0.963
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 49.7
Optimal Cycle: 161 Level Of Service: D

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L-T-R). Rows include Control, Rights, and Lanes.

Table with 11 columns for traffic volume metrics: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume.

Table for Saturation Flow Module with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Table for Capacity Analysis Module with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.815
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 26.4
Optimal Cycle: 66 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<. Table with 12 columns for volume and saturation flow data.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th Avenue (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 95 Critical Vol./Cap.(X): 0.587
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 7.0
Optimal Cycle: 33 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Table with 12 columns for volume and saturation flow data.

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, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #4 24th St / 2nd AV
Cycle (sec): 70 Critical Vol./Cap.(X): 0.588
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.0
Optimal Cycle: 31 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: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 10 10 10 10 10 10 10 10 10 10 10 10
Lanes: 0 0 1 0 0 0 1 0 0 1 0 0 1 0 0 0 0
Volume Module:
Base Vol: 48 110 9 90 501 256 17 78 153 69 150 32
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: 48 110 9 90 501 256 17 78 153 69 150 32
Added Vol: 56 48 0 0 61 0 0 0 1 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 104 158 9 90 562 256 17 78 154 69 150 32
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: 104 158 9 90 562 256 17 78 154 69 150 32
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 104 158 9 90 562 256 17 78 154 69 150 32
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
FinalVolume: 104 158 9 90 562 256 17 78 154 69 150 32
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.64 0.64 0.64 0.92 0.92 0.85 0.89 0.89 0.89 0.81 0.81 0.81
Lanes: 0.38 0.59 0.03 0.14 0.86 1.00 0.07 0.31 0.62 0.27 0.60 0.13
Final Sat.: 469 713 41 240 1499 1615 116 530 1047 424 922 197
Capacity Analysis Module:
Vol/Sat: 0.22 0.22 0.22 0.38 0.38 0.16 0.15 0.15 0.15 0.16 0.16 0.16
Crit Moves: ****
Green/Cycle: 0.64 0.64 0.64 0.64 0.64 0.64 0.28 0.28 0.28 0.28 0.28 0.28
Volume/Cap: 0.35 0.35 0.35 0.59 0.59 0.25 0.53 0.53 0.53 0.59 0.59 0.59
Delay/Veh: 6.2 6.2 6.2 8.2 8.2 5.6 22.6 22.6 22.6 24.0 24.0 24.0
User DelAdj: 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: 6.2 6.2 6.2 8.2 8.2 5.6 22.6 22.6 22.6 24.0 24.0 24.0
LOS by Move: A A A A A A C C C C C C
HCM2k95thQ: 6 6 6 16 16 5 10 10 10 11 11 11
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 30 Critical Vol./Cap.(X): 0.656
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.3
Optimal Cycle: OPTIMIZED Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.010
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 33.5
Optimal Cycle: 161 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.015
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 41.7
Optimal Cycle: 143 Level of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 105 Critical Vol./Cap.(X): 0.877
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 34.3
Optimal Cycle: OPTIMIZED Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:except thru movements. Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd
Average Delay (sec/veh): 62.3 Worst Case Level Of Service: F[1909.4]
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 0 0 0 0 1 0 0 0 1 0 2 0 0 0 0 0 1 1 0
Volume Module:
Base Vol: 0 0 0 37 0 85 75 1448 0 0 1567 13
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 0 0 37 0 85 75 1448 0 0 1567 13
Added Vol: 0 0 0 4 0 0 0 299 0 0 350 11
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 41 0 85 75 1747 0 0 1917 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: 0 0 0 41 0 85 75 1747 0 0 1917 24
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 0 0 41 0 85 75 1747 0 0 1917 24
Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxx 6.8 6.5 6.9 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx
FollowUpTim:xxxxx xxxxx xxxxx 3.5 4.0 3.3 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxx 2953 3826 971 1941 xxxxx xxxxx xxxxx xxxxx xxxxx
Potent Cap.: xxxxx xxxxx xxxxx 12 4 256 306 xxxxx xxxxx xxxxx xxxxx xxxxx
Move Cap.: xxxxx xxxxx xxxxx 10 3 256 306 xxxxx xxxxx xxxxx xxxxx xxxxx
Volume/Cap: xxxxx xxxxx xxxxx 4.27 0.00 0.33 0.24 xxxxx xxxxx xxxxx xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.9 xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 20.5 xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: * * * * * C * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx 27 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue:xxxxxx xxxxx xxxxx xxxxx 15.4 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel:xxxxxx xxxxx xxxxx xxxxx 1909 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * * F * * * * *
ApproachDel: xxxxxx 1909.4 xxxxxxx xxxxxxx
ApproachLOS: * F * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd
Cycle (sec): 110 Critical Vol./Cap.(X): 0.969
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 48.2
Optimal Cycle: 167 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 2 0 1 1 0 1 1 0
Volume Module:
Base Vol: 203 329 206 165 528 137 78 987 390 196 1278 179
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: 203 329 206 165 528 137 78 987 390 196 1278 179
Added Vol: 10 2 0 2 1 0 0 176 127 0 350 10
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 213 331 206 167 529 137 78 1163 517 196 1628 189
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: 213 331 206 167 529 137 78 1163 517 196 1628 189
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 213 331 206 167 529 137 78 1163 517 196 1628 189
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
FinalVolume: 213 331 206 167 529 137 78 1163 517 196 1628 189
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.89 0.89 0.95 0.92 0.92 0.95 0.95 0.85 0.95 0.93 0.93
Lanes: 1.00 1.23 0.77 1.00 1.59 0.41 1.00 2.00 1.00 1.00 1.79 0.21
Final Sat.: 1805 2096 1305 1805 2779 720 1805 3610 1615 1805 3183 369
Capacity Analysis Module:
Vol/Sat: 0.12 0.16 0.16 0.09 0.19 0.19 0.04 0.32 0.32 0.11 0.51 0.51
Crit Moves: **** *
Green/Cycle: 0.12 0.20 0.20 0.11 0.19 0.19 0.06 0.43 0.43 0.15 0.52 0.52
Volume/Cap: 0.99 0.80 0.80 0.80 0.99 0.99 0.68 0.74 0.74 0.74 0.99 0.99
Delay/Veh: 107.1 49.3 49.3 67.5 76.7 76.7 65.6 28.0 30.1 55.8 45.2 45.2
User DelAdj: 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: 107.1 49.3 49.3 67.5 76.7 76.7 65.6 28.0 30.1 55.8 45.2 45.2
LOS by Move: F D D E E E E C C E D D
HCM2k95thQ: 21 21 21 15 30 30 8 31 27 15 62 62
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 SR 99 NB Ramps/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.813
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 28.4
Optimal Cycle: 65 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 95 Critical Vol./Cap.(X): 1.004
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 32.0
Optimal Cycle: 180 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2k95thQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Option 3 10th-11th Avenue (Mitigated)
 Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

Curtis Park Village
 Option 3 10th-11th Avenue (Mitigated)
 Cumulative Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #14 Freeport Bl (North)/Sutterville Rd

 Cycle (sec): 70 Critical Vol./Cap.(X): 0.714
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 16.6
 Optimal Cycle: 49 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:	Protected			Prot+Permit			Protected			Protected		
Rights:	Ignore			Include			Include			Ovl		
Min. Green:	0	10	10	4	10	10	0	0	0	4	4	4
Lanes:	0	0	2	0	1	1	0	0	0	0	0	1

 Volume Module:

Base Vol:	0	766	834	340	788	0	0	0	0	684	0	442
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	766	834	340	788	0	0	0	0	684	0	442
Added Vol:	0	0	115	0	0	0	0	0	0	92	0	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	766	949	340	788	0	0	0	0	776	0	450
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	766	0	340	788	0	0	0	0	776	0	450
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	766	0	340	788	0	0	0	0	776	0	450
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	766	0	340	788	0	0	0	0	776	0	450

 Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.92	1.00	0.85
Lanes:	0.00	2.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	3610	1900	1805	3610	0	0	0	0	3502	0	1615

 Capacity Analysis Module:

Vol/Sat:	0.00	0.21	0.00	0.19	0.22	0.00	0.00	0.00	0.00	0.22	0.00	0.28
Crit Moves:	****			****			****			****		
Green/Cycle:	0.00	0.30	0.00	0.60	0.56	0.00	0.00	0.00	0.00	0.31	0.00	0.57
Volume/Cap:	0.00	0.71	0.00	0.58	0.39	0.00	0.00	0.00	0.00	0.71	0.00	0.49
Delay/Veh:	0.0	24.2	0.0	11.5	8.8	0.0	0.0	0.0	0.0	23.7	0.0	9.2
User DelAdj:	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	24.2	0.0	11.5	8.8	0.0	0.0	0.0	0.0	23.7	0.0	9.2
LOS by Move:	A	C	A	B	A	A	A	A	A	C	A	A
HCM2kAvgQ:	0	9	0	5	5	0	0	0	0	9	0	6

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.531
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 16.8
Optimal Cycle: 41 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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Ovl			Include			Ovl		
Min. Green:	5	5	5	5	5	9	4	5	5	4	5	9
Lanes:	1	1	0	0	1	1	2	0	1	2	0	1

Volume Module:

Base Vol:	57	3	73	186	10	240	274	794	97	83	924	203
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:	57	3	73	186	10	240	274	794	97	83	924	203
Added Vol:	0	0	70	0	0	0	0	148	0	56	127	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	57	3	143	186	10	240	274	942	97	139	1051	203
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:	57	3	143	186	10	240	274	942	97	139	1051	203
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	3	143	186	10	240	274	942	97	139	1051	203
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
FinalVolume:	57	3	143	186	10	240	274	942	97	139	1051	203

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.96	0.96	0.85	0.91	0.91	0.85	0.92	0.94	0.94	0.92	0.95	0.85
Lanes:	1.90	0.10	1.00	2.00	1.00	1.00	2.00	1.81	0.19	2.00	2.00	1.00
Final Sat.:	3448	181	1615	3448	1724	1615	3502	3227	332	3502	3610	1615

Capacity Analysis Module:

Vol/Sat:	0.02	0.02	0.09	0.05	0.01	0.15	0.08	0.29	0.29	0.04	0.29	0.13
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.07	0.07	0.18	0.12	0.12	0.26	0.13	0.53	0.53	0.10	0.50	0.62
Volume/Cap:	0.23	0.23	0.50	0.45	0.05	0.58	0.58	0.55	0.55	0.38	0.58	0.20
Delay/Veh:	31.1	31.1	27.6	29.3	27.2	24.8	30.3	11.2	11.2	29.9	12.8	5.8
User DelAdj:	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:	31.1	31.1	27.6	29.3	27.2	24.8	30.3	11.2	11.2	29.9	12.8	5.8
LOS by Move:	C	C	C	C	C	C	C	B	B	C	B	A
HCM2kAvgQ:	1	1	3	3	0	5	4	8	8	2	9	2

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 105 Critical Vol./Cap.(X): 0.797
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.5
Optimal Cycle: OPTIMIZED 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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	8	0	4	0	10	4	10	0	0	10	10
Lanes:	0	0	1	0	1	0	1	0	2	0	0	2

Volume Module:

Base Vol:	0	0	0	24	0	144	52	871	0	0	1066	74
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	0	0	24	0	144	52	871	0	0	1066	74
Added Vol:	0	0	0	321	0	181	215	3	0	0	3	391
PasserByVol:	0	0	0	94	0	114	94	-94	0	0	-114	114
Initial Fut:	0	0	0	439	0	439	361	780	0	0	955	579
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	0	0	439	0	439	361	780	0	0	955	579
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	439	0	439	361	780	0	0	955	579
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
FinalVolume:	0	0	0	439	0	439	361	780	0	0	955	579

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.90	1.00	0.90	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.00	1.00	0.00	1.50	0.00	1.50	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	1900	0	2573	0	2573	1805	3800	0	0	3800	1615

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.17	0.20	0.21	0.00	0.00	0.25	0.36
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.00	0.00	0.00	0.21	0.00	0.46	0.25	0.70	0.00	0.00	0.45	0.45
Volume/Cap:	0.00	0.00	0.00	0.80	0.00	0.37	0.80	0.29	0.00	0.00	0.56	0.80
Delay/Veh:	0.0	0.0	0.0	43.3	0.0	18.2	46.4	6.0	0.0	0.0	21.7	31.0
User DelAdj:	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	0.0	0.0	43.3	0.0	18.2	46.4	6.0	0.0	0.0	21.7	31.0
LOS by Move:	A	A	A	D	A	B	D	A	A	A	C	C
HCM2kAvgQ:	0	0	0	11	0	6	13	5	0	0	11	18

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd
Average Delay (sec/veh): 43.0 Worst Case Level Of Service: F[944.6]
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 0 0 0 0 0 1 0 0 1 0 2 0 0 0 0 0 1 1 0
Volume Module:
Base Vol: 0 0 0 58 0 73 69 993 0 0 1146 27
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 0 0 58 0 73 69 993 0 0 1146 27
Added Vol: 0 0 0 9 0 0 0 321 0 0 396 9
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 67 0 73 69 1314 0 0 1542 36
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 0 0 67 0 73 69 1314 0 0 1542 36
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 0 0 67 0 73 69 1314 0 0 1542 36
Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxx 6.8 6.5 6.9 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx
FollowUpTim:xxxxx xxxxx xxxxx 3.5 4.0 3.3 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxx 2355 3012 789 1578 xxxxx xxxxx xxxxx xxxxx xxxxx
Potent Cap.: xxxxx xxxxx xxxxx 31 14 338 423 xxxxx xxxxx xxxxx xxxxx xxxxx
Move Cap.: xxxxx xxxxx xxxxx 27 11 338 423 xxxxx xxxxx xxxxx xxxxx xxxxx
Volume/Cap: xxxxx xxxxx xxxxx 2.50 0.00 0.22 0.16 xxxxx xxxxx xxxxx xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.6 xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 15.2 xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: * * * * * C * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx 52 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue:xxxxxx xxxxx xxxxx xxxxx 14.6 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel:xxxxxx xxxxx xxxxx xxxxx 945 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * * F * * * * *
ApproachDel: xxxxxx 944.6 xxxxxxx xxxxxxx
ApproachLOS: * F * * *
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Option 3 10th-11th Avenue (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd
Cycle (sec): 110 Critical Vol./Cap.(X): 0.814
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 35.1
Optimal Cycle: 83 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 2 0 1 1 0 1 1 0
Volume Module:
Base Vol: 114 197 231 211 231 83 73 856 207 237 976 138
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: 114 197 231 211 231 83 73 856 207 237 976 138
Added Vol: 10 2 0 4 1 0 0 191 139 0 394 9
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 124 199 231 215 232 83 73 1047 346 237 1370 147
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: 124 199 231 215 232 83 73 1047 346 237 1370 147
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 124 199 231 215 232 83 73 1047 346 237 1370 147
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
FinalVolume: 124 199 231 215 232 83 73 1047 346 237 1370 147
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.87 0.87 0.95 0.91 0.91 0.95 0.95 0.85 0.95 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.47 0.53 1.00 2.00 1.00 1.00 1.81 0.19
Final Sat.: 1805 1659 1659 1805 2555 914 1805 3610 1615 1805 3211 345
Capacity Analysis Module:
Vol/Sat: 0.07 0.12 0.14 0.12 0.09 0.09 0.04 0.29 0.21 0.13 0.43 0.43
Crit Moves: **** *
Green/Cycle: 0.13 0.17 0.17 0.14 0.18 0.18 0.06 0.40 0.40 0.18 0.52 0.52
Volume/Cap: 0.51 0.71 0.83 0.83 0.51 0.51 0.64 0.73 0.54 0.73 0.83 0.83
Delay/Veh: 46.1 47.3 54.8 65.1 41.6 41.6 61.4 29.9 26.2 50.6 25.8 25.8
User DelAdj: 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: 46.1 47.3 54.8 65.1 41.6 41.6 61.4 29.9 26.2 50.6 25.8 25.8
LOS by Move: D D D E D D E C C D C C
HCM2kAvgQ: 5 8 10 9 6 6 4 17 9 9 25 25
Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Option 3 10th-11th Avenue (Mitigated)
 Cumulative Saturday Peak Hour

Level of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #22 SR 99 NB Ramps/Sutterville Rd

 Cycle (sec): 75 Critical Vol./Cap.(X): 0.772
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 25.3
 Optimal Cycle: 58 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:	Split Phase			Split Phase			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	7	10	10	0	0	0	7	10	0	0	10	10
Lanes:	1	1	0	0	0	0	1	1	0	0	2	1

Volume Module:

Base Vol:	371	0	165	0	0	0	693	808	0	0	558	338
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:	371	0	165	0	0	0	693	808	0	0	558	338
Added Vol:	172	0	0	0	0	0	145	43	0	0	53	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	543	0	165	0	0	0	838	851	0	0	611	338
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:	543	0	165	0	0	0	838	851	0	0	611	338
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	543	0	165	0	0	0	838	851	0	0	611	338
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
FinalVolume:	543	0	165	0	0	0	838	851	0	0	611	338

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	0.93	0.93	1.00	1.00	0.95	0.85
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	1.49	1.51	0.00	0.00	2.00	1.00
Final Sat.:	3618	0	1615	0	0	0	2622	2663	0	0	3610	1615

Capacity Analysis Module:

Vol/Sat:	0.15	0.00	0.10	0.00	0.00	0.00	0.32	0.32	0.00	0.00	0.17	0.21
Crit Moves:	****						****			****		
Green/Cycle:	0.19	0.00	0.19	0.00	0.00	0.00	0.41	0.41	0.00	0.00	0.27	0.27
Volume/Cap:	0.77	0.00	0.53	0.00	0.00	0.00	0.77	0.77	0.00	0.00	0.62	0.77
Delay/Veh:	33.9	0.0	28.7	0.0	0.0	0.0	20.7	20.7	0.0	0.0	25.2	33.4
User DelAdj:	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:	33.9	0.0	28.7	0.0	0.0	0.0	20.7	20.7	0.0	0.0	25.2	33.4
LOS by Move:	C	A	C	A	A	A	C	C	A	A	C	C
HCM2kAvgQ:	8	0	4	0	0	0	14	14	0	0	7	9

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Option 3 10th-11th Avenue (Mitigated)
 Cumulative Saturday Peak Hour

Level of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #28 Road A/Area 1

 Cycle (sec): 95 Critical Vol./Cap.(X): 0.773
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.2
 Optimal Cycle: 62 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:	Prot+Permit			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Ovl			Include		
Min. Green:	4	10	0	0	10	10	10	0	10	0	0	0
Lanes:	1	0	1	0	1	1	0	1	0	0	0	0

Volume Module:

Base Vol:	13	113	0	0	146	0	0	0	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:	13	113	0	0	146	0	0	0	22	0	0	0
Added Vol:	311	296	0	0	232	41	56	0	88	0	0	0
PasserByVol:	170	38	0	0	38	0	0	0	57	0	0	0
Initial Fut:	494	447	0	0	416	41	56	0	167	0	0	0
User Adj:	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
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:	553	501	0	0	466	46	63	0	187	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	553	501	0	0	466	46	63	0	187	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
FinalVolume:	553	501	0	0	466	46	63	0	187	0	0	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	1.00	1.00	0.85	0.89	1.00	0.89	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.00	1.00	0.25	0.00	0.75	0.00	0.00	0.00
Final Sat.:	1805	1900	0	0	1900	1615	424	0	1264	0	0	0

Capacity Analysis Module:

Vol/Sat:	0.31	0.26	0.00	0.00	0.25	0.03	0.15	0.00	0.15	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green/Cycle:	0.75	0.71	0.00	0.00	0.32	0.32	0.19	0.00	0.59	0.00	0.00	0.00
Volume/Cap:	0.68	0.37	0.00	0.00	0.77	0.09	0.77	0.00	0.25	0.00	0.00	0.00
Delay/Veh:	17.7	5.5	0.0	0.0	35.5	22.9	47.4	0.0	9.6	0.0	0.0	0.0
User DelAdj:	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:	17.7	5.5	0.0	0.0	35.5	22.9	47.4	0.0	9.6	0.0	0.0	0.0
LOS by Move:	B	A	A	A	D	C	D	A	A	A	A	A
HCM2kAvgQ:	9	6	0	0	14	1	9	0	4	0	0	0

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #2 Freeport Bl / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 0.559
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.7
Optimal Cycle: 36 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: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 10 4 10 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 57 580 22 21 538 10 40 50 24 40 62 180
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: 57 580 22 21 538 10 40 50 24 40 62 180
Added Vol: 0 0 0 1 9 0 0 0 2 0 4 17
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 57 580 22 22 547 10 40 50 26 40 66 197
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: 57 580 22 22 547 10 40 50 26 40 66 197
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 57 580 22 22 547 10 40 50 26 40 66 197
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
FinalVolume: 57 580 22 22 547 10 40 50 26 40 66 197
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.99 0.99 0.95 1.00 1.00 0.41 0.95 0.95 0.71 0.89 0.89
Lanes: 1.00 0.96 0.04 1.00 0.98 0.02 1.00 0.66 0.34 1.00 0.25 0.75
Final Sat.: 1805 1820 69 1805 1860 34 775 1186 617 1343 423 1264
Capacity Analysis Module:
Vol/Sat: 0.03 0.32 0.32 0.01 0.29 0.29 0.05 0.04 0.04 0.03 0.16 0.16
Crit Moves: ****
Green/Cycle: 0.10 0.55 0.55 0.06 0.51 0.51 0.27 0.27 0.27 0.27 0.27 0.27
Volume/Cap: 0.32 0.58 0.58 0.21 0.58 0.58 0.19 0.16 0.16 0.11 0.58 0.58
Delay/Veh: 30.4 11.4 11.4 32.5 13.0 13.0 20.3 19.8 19.8 19.5 24.2 24.2
User DelAdj: 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: 30.4 11.4 11.4 32.5 13.0 13.0 20.3 19.8 19.8 19.5 24.2 24.2
LOS by Move: C B B C B B C B B B C C
HCM2kAvgQ: 1 9 9 1 9 9 1 1 1 1 6 6
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 70 Critical Vol./Cap.(X): 0.666
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.1
Optimal Cycle: 37 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 50 Critical Vol./Cap.(X): 0.608
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.4
Optimal Cycle: 31 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.085
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 58.9
Optimal Cycle: 180 Level Of Service: E

Table with columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Protected, Protected+Permit, etc.), Rights, Min. Green, Lanes.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.099
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 60.8
Optimal Cycle: 180 Level Of Service: E

Table with columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Split Phase, Protected, etc.), Rights, Min. Green, Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.877
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 31.8
Optimal Cycle: 79 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:except thru movements

Table with 12 columns representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module:

Table with 12 columns for Sat/Lane and 4 rows for Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for Vol/Sat and 12 rows for Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: E[36.8]

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 representing traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module:

Table with 12 columns for Critical Gap and 2 rows for Critical Gp and FollowUpTim.

Capacity Module:

Table with 12 columns for Capacity and 4 rows for Conflict Vol, Potent Cap, Move Cap, and Volume/Cap.

Level Of Service Module:

Table with 12 columns for Level of Service and 8 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative A (Mitigated)
 Cumulative AM Peak Hour

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 1.004
 Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 49.8
 Optimal Cycle: 145 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	T	R		L	T	R		L	T	R		L	T	R					
Control:	Protected				Protected				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	7	10	10		7	10	10		7	10	10		7	10	10					
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	2	0	1	1	0	1	1	0

Volume Module:

Base Vol:	395	532	167	154	246	84	207	912	282	139	1301	80
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:	395	532	167	154	246	84	207	912	282	139	1301	80
Added Vol:	5	2	0	15	5	0	0	68	55	0	80	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	400	534	167	169	251	84	207	980	337	139	1381	87
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:	400	534	167	169	251	84	207	980	337	139	1381	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	400	534	167	169	251	84	207	980	337	139	1381	87
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
FinalVolume:	400	534	167	169	251	84	207	980	337	139	1381	87

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.92	0.92	0.95	0.91	0.91	0.95	0.95	0.85	0.95	0.94	0.94
Lanes:	1.00	1.52	0.48	1.00	1.50	0.50	1.00	2.00	1.00	1.00	1.88	0.12
Final Sat.:	1805	2651	829	1805	2602	871	1805	3610	1615	1805	3365	212

Capacity Analysis Module:

Vol/Sat:	0.22	0.20	0.20	0.09	0.10	0.10	0.11	0.27	0.21	0.08	0.41	0.41
Crit Moves:	****			****			****			****		
Green/Cycle:	0.21	0.23	0.23	0.11	0.13	0.13	0.11	0.37	0.37	0.13	0.39	0.39
Volume/Cap:	1.06	0.86	0.86	0.86	0.72	0.72	1.06	0.73	0.56	0.61	1.06	1.06
Delay/Veh:	91.6	36.7	36.7	62.5	36.8	36.8	113.5	22.6	20.1	35.5	63.5	63.5
User DelAdj:	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:	91.6	36.7	36.7	62.5	36.8	36.8	113.5	22.6	20.1	35.5	63.5	63.5
LOS by Move:	F	D	D	E	D	D	F	C	C	D	E	E
HCM2kAvgQ:	17	11	11	7	6	6	10	12	7	4	29	29

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #2 Freeport Bl / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 1.005
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 43.8
Optimal Cycle: 150 Level of Service: D
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 10 4 10 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 61 367 10 126 1274 43 20 67 29 46 187 33
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: 61 367 10 126 1274 43 20 67 29 46 187 33
Added Vol: 0 0 0 3 24 0 0 1 5 0 4 20
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 61 367 10 129 1298 43 20 68 34 46 191 53
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: 61 367 10 129 1298 43 20 68 34 46 191 53
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 61 367 10 129 1298 43 20 68 34 46 191 53
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
FinalVolume: 61 367 10 129 1298 43 20 68 34 46 191 53
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 1.00 1.00 0.95 1.00 1.00 0.40 0.95 0.95 0.65 0.97 0.97
Lanes: 1.00 0.97 0.03 1.00 0.97 0.03 1.00 0.67 0.33 1.00 0.78 0.22
Final Sat.: 1805 1842 50 1805 1830 61 760 1203 602 1229 1438 399
Capacity Analysis Module:
Vol/Sat: 0.03 0.20 0.20 0.07 0.71 0.71 0.03 0.06 0.06 0.04 0.13 0.13
Crit Moves: **** ****
Green/Cycle: 0.06 0.54 0.54 0.19 0.67 0.67 0.14 0.14 0.14 0.14 0.14 0.14
Volume/Cap: 0.59 0.37 0.37 0.37 1.06 1.06 0.18 0.40 0.40 0.26 0.93 0.93
Delay/Veh: 41.0 9.6 9.6 25.3 53.1 53.1 27.2 28.3 28.3 27.5 66.7 66.7
User DelAdj: 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: 41.0 9.6 9.6 25.3 53.1 53.1 27.2 28.3 28.3 27.5 66.7 66.7
LOS by Move: D A A C D D C C C C E E
HCM2kAvgQ: 2 5 5 3 44 44 1 2 2 1 9 9
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 70 Critical Vol./Cap.(X): 0.574
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.0
Optimal Cycle: 30 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for capacity and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 50 Critical Vol./Cap.(X): 0.558
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.7
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for different traffic volumes and 12 rows for various metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for saturation flow and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for capacity and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.001
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 31.7
Optimal Cycle: 146 Level Of Service: C

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns representing different traffic movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing different traffic movements. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.975
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 36.4
Optimal Cycle: 119 Level Of Service: D

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns representing different traffic movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns representing different traffic movements. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.832
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 24.5
Optimal Cycle: 68 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module:except thru movements

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for movements. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 37.1 Worst Case Level Of Service: F[1085.4]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Critical Gap Module:

Table with 12 columns for movements. Rows include Critical Gp and FollowUpTim.

Capacity Module:

Table with 12 columns for movements. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns for movements. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative A (Mitigated)
 Cumulative PM Peak Hour

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.981
 Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 48.6
 Optimal Cycle: 130 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	T	R		L	T	R		L	T	R		L	T	R					
Control:	Protected				Protected				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	7	10	10		7	10	10		7	10	10		7	10	10					
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	2	0	1	1	0	1	1	0

Volume Module:

Base Vol:	203	329	206	165	528	137	78	987	390	196	1278	179
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:	203	329	206	165	528	137	78	987	390	196	1278	179
Added Vol:	12	4	0	7	2	0	0	97	74	0	194	19
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	215	333	206	172	530	137	78	1084	464	196	1472	198
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:	215	333	206	172	530	137	78	1084	464	196	1472	198
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	215	333	206	172	530	137	78	1084	464	196	1472	198
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
FinalVolume:	215	333	206	172	530	137	78	1084	464	196	1472	198

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.90	0.90	0.95	0.92	0.92	0.95	0.95	0.85	0.95	0.93	0.93
Lanes:	1.00	1.24	0.76	1.00	1.59	0.41	1.00	2.00	1.00	1.00	1.76	0.24
Final Sat.:	1805	2103	1301	1805	2780	718	1805	3610	1615	1805	3125	420

Capacity Analysis Module:

Vol/Sat:	0.12	0.16	0.16	0.10	0.19	0.19	0.04	0.30	0.29	0.11	0.47	0.47
Crit Moves:	****			****			****			****		
Green/Cycle:	0.11	0.18	0.18	0.11	0.18	0.18	0.09	0.40	0.40	0.14	0.45	0.45
Volume/Cap:	1.05	0.86	0.86	0.86	1.05	1.05	0.46	0.75	0.72	0.75	1.05	1.05
Delay/Veh:	108.6	40.8	40.8	61.2	78.8	78.8	34.2	21.6	22.9	42.4	56.1	56.1
User DelAdj:	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:	108.6	40.8	40.8	61.2	78.8	78.8	34.2	21.6	22.9	42.4	56.1	56.1
LOS by Move:	F	D	D	E	E	E	C	C	C	D	E	E
HCM2kAvgQ:	10	9	9	7	15	15	2	13	10	6	31	31

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Reduced Commercial - Alternative A (Mitigated)
 Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

Curtis Park Village
 Reduced Commercial - Alternative A (Mitigated)
 Cumulative Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #2 Freeport Bl / 2nd Av

 Cycle (sec): 70 Critical Vol./Cap.(X): 0.505
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 13.6
 Optimal Cycle: 33 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: Protected Protected Permitted Permitted
 Rights: Include Include Include Include
 Min. Green: 4 10 10 4 10 10 4 10 10 4 10 0
 Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
 -----|-----|-----|-----|
 Volume Module:
 Base Vol: 36 284 9 47 574 17 19 37 19 35 62 74
 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: 36 284 9 47 574 17 19 37 19 35 62 74
 Added Vol: 0 0 0 3 24 0 0 1 5 0 5 23
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 36 284 9 50 598 17 19 38 24 35 67 97
 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: 36 284 9 50 598 17 19 38 24 35 67 97
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 36 284 9 50 598 17 19 38 24 35 67 97
 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
 FinalVolume: 36 284 9 50 598 17 19 38 24 35 67 97
 -----|-----|-----|-----|
 Saturation Flow Module:
 Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
 Adjustment: 0.95 1.00 1.00 0.95 1.00 1.00 0.51 0.94 0.94 0.72 0.91 0.91
 Lanes: 1.00 0.97 0.03 1.00 0.97 0.03 1.00 0.61 0.39 1.00 0.41 0.59
 Final Sat.: 1805 1832 58 1805 1840 52 969 1097 693 1364 707 1024
 -----|-----|-----|-----|
 Capacity Analysis Module:
 Vol/Sat: 0.02 0.15 0.15 0.03 0.32 0.32 0.02 0.03 0.03 0.03 0.09 0.09
 Crit Moves: **** ****
 Green/Cycle: 0.06 0.50 0.50 0.19 0.63 0.63 0.18 0.18 0.18 0.18 0.18 0.18
 Volume/Cap: 0.35 0.31 0.31 0.15 0.52 0.52 0.11 0.19 0.19 0.14 0.52 0.52
 Delay/Veh: 33.8 10.4 10.4 24.1 7.5 7.5 24.0 24.4 24.4 24.2 27.2 27.2
 User DelAdj: 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: 33.8 10.4 10.4 24.1 7.5 7.5 24.0 24.4 24.4 24.2 27.2 27.2
 LOS by Move: C B B C A A C C C C C
 HCM2kAvgQ: 1 4 4 1 8 8 0 1 1 1 4 4

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.700
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 16.3
Optimal Cycle: 48 Level of Service: B

Table with columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Protected, Prot+Permit, etc.), Rights, Min. Green, Lanes.

Volume Module table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.511
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 16.6
Optimal Cycle: 40 Level of Service: B

Table with columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Split Phase, Protected, etc.), Rights, Min. Green, Lanes.

Volume Module table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.704
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 18.8
Optimal Cycle: 48 Level of Service: B

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Protected, Include, Ovl), Rights, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for each approach.

Capacity Analysis Module table showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative A (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 20.1 Worst Case Level Of Service: F[420.0]

Table with 4 columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Stop Sign, Uncontrolled), Rights (Include), and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each approach.

Critical Gap Module table showing Critical Gap, FollowUpTim, and other metrics for each approach.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for each approach.

Level of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative A (Mitigated)
 Cumulative Saturday Peak Hour

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.806
 Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 28.4
 Optimal Cycle: 71 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:	Protected				Protected				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	7	10	10		7	10	10		7	10	10		7	10	10					
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	2	0	1	1	0	1	1	0

Volume Module:

Base Vol:	114	197	231	211	231	83	73	856	207	237	976	138
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:	114	197	231	211	231	83	73	856	207	237	976	138
Added Vol:	11	3	0	8	3	0	0	110	83	0	206	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	200	231	219	234	83	73	966	290	237	1182	153
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:	125	200	231	219	234	83	73	966	290	237	1182	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	200	231	219	234	83	73	966	290	237	1182	153
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 Volume:	125	200	231	219	234	83	73	966	290	237	1182	153

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.87	0.87	0.95	0.91	0.91	0.95	0.95	0.85	0.95	0.93	0.93
Lanes:	1.00	1.00	1.00	1.00	1.48	0.52	1.00	2.00	1.00	1.00	1.77	0.23
Final Sat.:	1805	1661	1661	1805	2561	908	1805	3610	1615	1805	3142	407

Capacity Analysis Module:

Vol/Sat:	0.07	0.12	0.14	0.12	0.09	0.09	0.04	0.27	0.18	0.13	0.38	0.38
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.13	0.16	0.16	0.14	0.18	0.18	0.09	0.36	0.36	0.18	0.44	0.44
Volume/Cap:	0.55	0.74	0.85	0.85	0.51	0.51	0.43	0.75	0.50	0.75	0.85	0.85
Delay/Veh:	33.7	34.8	43.6	54.4	28.5	28.5	33.9	23.5	19.5	38.6	23.5	23.5
User DelAdj:	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:	33.7	34.8	43.6	54.4	28.5	28.5	33.9	23.5	19.5	38.6	23.5	23.5
LOS by Move:	C	C	D	D	C	C	C	C	B	D	C	C
HCM2kAvgQ:	4	6	8	8	4	4	2	12	6	7	18	18

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #2 Freeport Bl / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 0.559
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.7
Optimal Cycle: 36 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: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 10 4 10 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 57 580 22 21 538 10 40 50 24 40 62 180
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: 57 580 22 21 538 10 40 50 24 40 62 180
Added Vol: 0 0 0 0 10 0 0 0 2 0 4 18
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 57 580 22 21 548 10 40 50 26 40 66 198
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: 57 580 22 21 548 10 40 50 26 40 66 198
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 57 580 22 21 548 10 40 50 26 40 66 198
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
FinalVolume: 57 580 22 21 548 10 40 50 26 40 66 198
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.99 0.99 0.95 1.00 1.00 0.41 0.95 0.95 0.71 0.89 0.89
Lanes: 1.00 0.96 0.04 1.00 0.98 0.02 1.00 0.66 0.34 1.00 0.25 0.75
Final Sat.: 1805 1820 69 1805 1860 34 773 1186 617 1343 422 1265
Capacity Analysis Module:
Vol/Sat: 0.03 0.32 0.32 0.01 0.29 0.29 0.05 0.04 0.04 0.03 0.16 0.16
Crit Moves: ****
Green/Cycle: 0.10 0.55 0.55 0.06 0.51 0.51 0.27 0.27 0.27 0.27 0.27 0.27
Volume/Cap: 0.32 0.58 0.58 0.20 0.58 0.58 0.19 0.16 0.16 0.11 0.58 0.58
Delay/Veh: 30.5 11.4 11.4 32.5 13.1 13.1 20.2 19.7 19.7 19.5 24.2 24.2
User DelAdj: 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: 30.5 11.4 11.4 32.5 13.1 13.1 20.2 19.7 19.7 19.5 24.2 24.2
LOS by Move: C B B C B B C B B B C C
HCM2kAvgQ: 1 9 9 1 9 9 1 1 1 1 6 6
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 70 Critical Vol./Cap.(X): 0.673
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.2
Optimal Cycle: 37 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume).

Saturation Flow Module:

Table with 12 columns for saturation flow metrics (Sat/Lane, Adjustment, Lanes, Final Sat.).

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 50 Critical Vol./Cap.(X): 0.609
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.4
Optimal Cycle: 31 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume metrics (Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume).

Saturation Flow Module:

Table with 12 columns for saturation flow metrics (Sat/Lane, Adjustment, Lanes, Final Sat.).

Capacity Analysis Module:

Table with 12 columns for capacity analysis metrics (Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ).

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.085
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 58.9
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.097
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 60.4
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.872
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 31.7
Optimal Cycle: 77 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module:except thru movements

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for movements. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for movements. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: E[36.4]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, and Volume Module.

Table with 12 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Critical Gap Module:

Table with 12 columns for movements. Rows include Critical Gp and FollowUpTim.

Capacity Module:

Table with 12 columns for movements. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns for movements. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative B (Mitigated)
 Cumulative AM Peak Hour

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.967
 Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 43.3
 Optimal Cycle: 121 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	T	R		L	T	R		L	T	R		L	T	R					
Control:	Protected				Protected				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	7	10	10		7	10	10		7	10	10		7	10	10					
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	2	0	1	1	0	2	0	1

Volume Module:

Base Vol:	395	532	167	154	246	84	207	912	282	139	1301	80
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:	395	532	167	154	246	84	207	912	282	139	1301	80
Added Vol:	3	2	0	15	5	0	0	70	56	0	73	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	398	534	167	169	251	84	207	982	338	139	1374	87
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:	398	534	167	169	251	84	207	982	338	139	1374	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	398	534	167	169	251	84	207	982	338	139	1374	87
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
FinalVolume:	398	534	167	169	251	84	207	982	338	139	1374	87

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.92	0.92	0.95	0.91	0.91	0.95	0.95	0.85	0.95	0.95	0.85
Lanes:	1.00	1.52	0.48	1.00	1.50	0.50	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1805	2651	829	1805	2602	871	1805	3610	1615	1805	3610	1615

Capacity Analysis Module:

Vol/Sat:	0.22	0.20	0.20	0.09	0.10	0.10	0.11	0.27	0.21	0.08	0.38	0.05
Crit Moves:	****			****			****			****		
Green/Cycle:	0.22	0.24	0.24	0.11	0.13	0.13	0.11	0.36	0.36	0.12	0.38	0.38
Volume/Cap:	1.01	0.84	0.84	0.84	0.72	0.72	1.01	0.75	0.57	0.62	1.01	0.14
Delay/Veh:	78.0	34.8	34.8	58.5	36.8	36.8	99.6	23.2	20.6	36.2	51.1	15.6
User DelAdj:	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:	78.0	34.8	34.8	58.5	36.8	36.8	99.6	23.2	20.6	36.2	51.1	15.6
LOS by Move:	E	C	C	E	D	D	F	C	C	D	D	B
HCM2kAvgQ:	16	11	11	6	6	6	10	12	7	4	25	1

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative PM Peak Hour

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #2 Freeport Bl / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 1.004
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 43.6
Optimal Cycle: 148 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 10 4 10 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 61 367 10 126 1274 43 20 67 29 46 187 33
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: 61 367 10 126 1274 43 20 67 29 46 187 33
Added Vol: 0 0 0 1 24 0 0 0 5 0 4 18
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 61 367 10 127 1298 43 20 67 34 46 191 51
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: 61 367 10 127 1298 43 20 67 34 46 191 51
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 61 367 10 127 1298 43 20 67 34 46 191 51
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
FinalVolume: 61 367 10 127 1298 43 20 67 34 46 191 51
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 1.00 1.00 0.95 1.00 1.00 0.40 0.95 0.95 0.65 0.97 0.97
Lanes: 1.00 0.97 0.03 1.00 0.97 0.03 1.00 0.66 0.34 1.00 0.79 0.21
Final Sat.: 1805 1842 50 1805 1830 61 760 1196 607 1235 1452 388
Capacity Analysis Module:
Vol/Sat: 0.03 0.20 0.20 0.07 0.71 0.71 0.03 0.06 0.06 0.04 0.13 0.13
Crit Moves: **** ****
Green/Cycle: 0.06 0.54 0.54 0.19 0.67 0.67 0.14 0.14 0.14 0.14 0.14 0.14
Volume/Cap: 0.59 0.37 0.37 0.37 1.06 1.06 0.18 0.39 0.39 0.26 0.92 0.92
Delay/Veh: 41.0 9.5 9.5 25.4 53.1 53.1 27.2 28.2 28.2 27.5 64.7 64.7
User DelAdj: 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: 41.0 9.5 9.5 25.4 53.1 53.1 27.2 28.2 28.2 27.5 64.7 64.7
LOS by Move: D A A C D D C C C C E E
HCM2kAvgQ: 2 5 5 3 44 44 1 2 2 1 9 9
Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 70 Critical Vol./Cap.(X): 0.573
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.0
Optimal Cycle: 30 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 50 Critical Vol./Cap.(X): 0.554
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.7
Optimal Cycle: 28 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing traffic volumes and 12 rows for various metrics 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.999
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 31.4
Optimal Cycle: 144 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.970
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 35.7
Optimal Cycle: 116 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.873
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 33.5
Optimal Cycle: 78 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module:except thru movements

Table with 10 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 10 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 10 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 35.0 Worst Case Level Of Service: F[1010.3]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module:

Table with 10 columns representing different traffic movements. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Critical Gap Module:

Table with 10 columns. Rows include Critical Gp and FollowUpTim.

Capacity Module:

Table with 10 columns. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 10 columns. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative B (Mitigated)
 Cumulative PM Peak Hour

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.898
 Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 35.7
 Optimal Cycle: 93 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	T	R		L	T	R		L	T	R		L	T	R					
Control:	Protected				Protected				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	7	10	10		7	10	10		7	10	10		7	10	10					
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	2	0	1	1	0	2	0	1

Volume Module:

Base Vol:	203	329	206	165	528	137	78	987	390	196	1278	179
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:	203	329	206	165	528	137	78	987	390	196	1278	179
Added Vol:	9	5	0	7	3	0	0	85	60	0	177	21
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	212	334	206	172	531	137	78	1072	450	196	1455	200
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:	212	334	206	172	531	137	78	1072	450	196	1455	200
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	212	334	206	172	531	137	78	1072	450	196	1455	200
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
FinalVolume:	212	334	206	172	531	137	78	1072	450	196	1455	200

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.90	0.90	0.95	0.92	0.92	0.95	0.95	0.85	0.95	0.95	0.85
Lanes:	1.00	1.24	0.76	1.00	1.59	0.41	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1805	2106	1299	1805	2781	717	1805	3610	1615	1805	3610	1615

Capacity Analysis Module:

Vol/Sat:	0.12	0.16	0.16	0.10	0.19	0.19	0.04	0.30	0.28	0.11	0.40	0.12
Crit Moves:	****			****			****			****		
Green/Cycle:	0.12	0.20	0.20	0.12	0.20	0.20	0.09	0.38	0.38	0.14	0.42	0.42
Volume/Cap:	0.95	0.78	0.78	0.78	0.95	0.95	0.46	0.79	0.74	0.79	0.95	0.29
Delay/Veh:	79.7	34.3	34.3	48.8	52.6	52.6	34.2	23.7	24.8	46.3	34.4	14.5
User DelAdj:	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:	79.7	34.3	34.3	48.8	52.6	52.6	34.2	23.7	24.8	46.3	34.4	14.5
LOS by Move:	E	C	C	D	D	D	C	C	C	D	C	B
HCM2kAvgQ:	9	8	8	6	13	13	2	14	11	7	23	3

Note: Queue reported is the number of cars per lane.

Curtis Park Village
 Reduced Commercial - Alternative B (Mitigated)
 Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
 Command: Sat
 Volume: Sat
 Geometry: Baseline
 Impact Fee: Default Impact Fee
 Trip Generation: Sat
 Trip Distribution: Baseline
 Paths: Baseline
 Routes: Default Route
 Configuration: Sat

Curtis Park Village
 Reduced Commercial - Alternative B (Mitigated)
 Cumulative Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

 Intersection #2 Freeport Bl / 2nd Av

 Cycle (sec): 70 Critical Vol./Cap.(X): 0.502
 Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 13.5
 Optimal Cycle: 33 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: Protected Protected Permitted Permitted
 Rights: Include Include Include Include
 Min. Green: 4 10 10 4 10 10 4 10 10 4 10 0
 Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
 -----|-----|-----|-----|
 Volume Module:
 Base Vol: 36 284 9 47 574 17 19 37 19 35 62 74
 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: 36 284 9 47 574 17 19 37 19 35 62 74
 Added Vol: 0 0 0 1 23 0 0 0 5 0 5 21
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 36 284 9 48 597 17 19 37 24 35 67 95
 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: 36 284 9 48 597 17 19 37 24 35 67 95
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 36 284 9 48 597 17 19 37 24 35 67 95
 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
 FinalVolume: 36 284 9 48 597 17 19 37 24 35 67 95
 -----|-----|-----|-----|
 Saturation Flow Module:
 Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
 Adjustment: 0.95 1.00 1.00 0.95 1.00 1.00 0.51 0.94 0.94 0.72 0.91 0.91
 Lanes: 1.00 0.97 0.03 1.00 0.97 0.03 1.00 0.61 0.39 1.00 0.41 0.59
 Final Sat.: 1805 1832 58 1805 1840 52 975 1084 703 1366 717 1016
 -----|-----|-----|-----|
 Capacity Analysis Module:
 Vol/Sat: 0.02 0.15 0.15 0.03 0.32 0.32 0.02 0.03 0.03 0.03 0.09 0.09
 Crit Moves: **** ****
 Green/Cycle: 0.06 0.50 0.50 0.19 0.63 0.63 0.18 0.18 0.18 0.18 0.18 0.18
 Volume/Cap: 0.35 0.31 0.31 0.14 0.51 0.51 0.11 0.19 0.19 0.14 0.51 0.51
 Delay/Veh: 33.8 10.4 10.4 24.0 7.4 7.4 24.1 24.5 24.5 24.3 27.3 27.3
 User DelAdj: 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: 33.8 10.4 10.4 24.0 7.4 7.4 24.1 24.5 24.5 24.3 27.3 27.3
 LOS by Move: C B B C A A C C C C C C
 HCM2kAvgQ: 1 4 4 1 8 8 0 1 1 1 4 4

 Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.697
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 16.3
Optimal Cycle: 47 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Protected and Split Phase.

Volume Module table with 12 columns and 15 rows showing traffic volume metrics like Base Vol, Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module table with 12 columns and 5 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat values.

Capacity Analysis Module table with 12 columns and 12 rows showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.507
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 16.6
Optimal Cycle: 39 Level Of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and 3 rows: Movement, Control, Rights. Includes lane counts and control types like Split Phase and Protected.

Volume Module table with 12 columns and 15 rows showing traffic volume metrics like Base Vol, Growth Adj, Initial Bse, Added Vol, etc.

Saturation Flow Module table with 12 columns and 5 rows showing Sat/Lane, Adjustment, Lanes, and Final Sat values.

Capacity Analysis Module table with 12 columns and 12 rows showing Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.657
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 17.6
Optimal Cycle: 43 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic flows and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for lanes and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for lanes and 10 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Reduced Commercial - Alternative B (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 17.9 Worst Case Level Of Service: F[364.2]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Lanes.

Volume Module table with 12 columns for traffic flows and 12 rows for various volume metrics like Base Vol, Growth Adj, Initial Bse, etc.

Critical Gap Module table with 12 columns for lanes and 4 rows for Critical Gap, FollowUpTim.

Capacity Module table with 12 columns for lanes and 4 rows for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level Of Service Module table with 12 columns for lanes and 10 rows for 2Way95thQ, Control Del, LOS by Move, etc.

Note: Queue reported is the number of cars per lane.

 Curtis Park Village
 Reduced Commercial - Alternative B (Mitigated)
 Cumulative Saturday Peak Hour

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 75 Critical Vol./Cap.(X): 0.739
 Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 27.1
 Optimal Cycle: 60 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:	Protected				Protected				Protected				Protected							
Rights:	Include				Include				Include				Include							
Min. Green:	7	10	10		7	10	10		7	10	10		7	10	10					
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	2	0	1	1	0	2	0	1

Volume Module:

Base Vol:	114	197	231	211	231	83	73	856	207	237	976	138
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:	114	197	231	211	231	83	73	856	207	237	976	138
Added Vol:	7	4	0	9	3	0	0	95	68	0	176	16
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	121	201	231	220	234	83	73	951	275	237	1152	154
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:	121	201	231	220	234	83	73	951	275	237	1152	154
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	121	201	231	220	234	83	73	951	275	237	1152	154
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
FinalVolume:	121	201	231	220	234	83	73	951	275	237	1152	154

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.87	0.87	0.95	0.91	0.91	0.95	0.95	0.85	0.95	0.95	0.85
Lanes:	1.00	1.00	1.00	1.00	1.48	0.52	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1805	1661	1661	1805	2561	908	1805	3610	1615	1805	3610	1615

Capacity Analysis Module:

Vol/Sat:	0.07	0.12	0.14	0.12	0.09	0.09	0.04	0.26	0.17	0.13	0.32	0.10
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green/Cycle:	0.14	0.18	0.18	0.16	0.20	0.20	0.09	0.34	0.34	0.17	0.41	0.41
Volume/Cap:	0.48	0.68	0.78	0.78	0.46	0.46	0.43	0.78	0.51	0.78	0.78	0.23
Delay/Veh:	31.3	31.6	36.2	43.1	27.1	27.1	33.9	25.8	20.7	42.4	21.8	14.6
User DelAdj:	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:	31.3	31.6	36.2	43.1	27.1	27.1	33.9	25.8	20.7	42.4	21.8	14.6
LOS by Move:	C	C	D	D	C	C	C	C	C	D	C	B
HCM2kAvgQ:	3	6	7	7	4	4	2	12	6	7	14	2

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C (Mitigated)
Cumulative AM Peak Hour

Scenario Report

Scenario: AM
Command: AM
Volume: AM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: AM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: AM

Curtis Park Village
MultiFamily Alternative C (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)
Intersection #2 Freeport Bl / 2nd Av
Cycle (sec): 70 Critical Vol./Cap.(X): 0.559
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 15.7
Optimal Cycle: 36 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: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 10 4 10 10
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
Volume Module:
Base Vol: 57 580 22 21 538 10 40 50 24 40 62 180
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: 57 580 22 21 538 10 40 50 24 40 62 180
Added Vol: 0 0 0 1 11 0 0 0 2 0 4 17
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 57 580 22 22 549 10 40 50 26 40 66 197
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: 57 580 22 22 549 10 40 50 26 40 66 197
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 57 580 22 22 549 10 40 50 26 40 66 197
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
FinalVolume: 57 580 22 22 549 10 40 50 26 40 66 197
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.99 0.99 0.95 1.00 1.00 0.41 0.95 0.95 0.71 0.89 0.89
Lanes: 1.00 0.96 0.04 1.00 0.98 0.02 1.00 0.66 0.34 1.00 0.25 0.75
Final Sat.: 1805 1820 69 1805 1860 34 775 1186 617 1343 423 1264
Capacity Analysis Module:
Vol/Sat: 0.03 0.32 0.32 0.01 0.30 0.30 0.05 0.04 0.04 0.03 0.16 0.16
Crit Moves: ****
Green/Cycle: 0.10 0.55 0.55 0.06 0.51 0.51 0.27 0.27 0.27 0.27 0.27 0.27
Volume/Cap: 0.32 0.58 0.58 0.21 0.58 0.58 0.19 0.16 0.16 0.11 0.58 0.58
Delay/Veh: 30.5 11.4 11.4 32.5 13.0 13.0 20.3 19.8 19.8 19.5 24.2 24.2
User DelAdj: 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: 30.5 11.4 11.4 32.5 13.0 13.0 20.3 19.8 19.8 19.5 24.2 24.2
LOS by Move: C B B C B B C B B B C C
HCM2kAvgQ: 1 9 9 1 9 9 1 1 1 1 6 6
Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 70 Critical Vol./Cap.(X): 0.667
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 11.1
Optimal Cycle: 37 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 50 Critical Vol./Cap.(X): 0.609
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 6.4
Optimal Cycle: 31 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.085
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 58.9
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.102
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 61.6
Optimal Cycle: 180 Level Of Service: E

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module: >> Count Date: 29 Mar 2005 <<

Table with 12 columns for volume and saturation flow. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.812
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 22.9
Optimal Cycle: 64 Level Of Service: C

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Lanes, and Volume Module data.

Volume Module:except thru movements

Table showing traffic volume and delay metrics for each approach and movement, including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 10 columns representing saturation flow for different movements and lanes, including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 10 columns showing capacity analysis metrics such as Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: E[38.0]

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Lanes, and Volume Module data.

Table showing traffic volume and delay metrics for each approach and movement, including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table showing critical gap and follow-up time metrics for each approach and movement.

Capacity Module:

Table showing capacity metrics such as Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table showing level of service metrics including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 85 Critical Vol./Cap.(X): 0.988
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 47.2
Optimal Cycle: 151 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic volumes and adjustment factors like Growth Adj, Initial Bse, Added Vol, 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
MultiFamily Alternative C (Mitigated)
Cumulative AM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.261
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 4.2
Optimal Cycle: 26 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns representing different traffic volumes and adjustment factors like Growth Adj, Initial Bse, Added Vol, 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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative PM Peak Hour

Scenario Report

Scenario: PM
Command: PM
Volume: PM
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: PM
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: PM

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freeport Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 1.013
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 45.4
Optimal Cycle: 159 Level of Service: D

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
-----|-----|-----|-----|
Control: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 10 4 10 10
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
-----|-----|-----|-----|
Volume Module:
Base Vol: 61 367 10 126 1274 43 20 67 29 46 187 33
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: 61 367 10 126 1274 43 20 67 29 46 187 33
Added Vol: 0 0 0 4 29 0 0 1 6 0 5 26
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 61 367 10 130 1303 43 20 68 35 46 192 59
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: 61 367 10 130 1303 43 20 68 35 46 192 59
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 61 367 10 130 1303 43 20 68 35 46 192 59
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
FinalVolume: 61 367 10 130 1303 43 20 68 35 46 192 59
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 1.00 1.00 0.95 1.00 1.00 0.40 0.95 0.95 0.64 0.97 0.97
Lanes: 1.00 0.97 0.03 1.00 0.97 0.03 1.00 0.66 0.34 1.00 0.76 0.24
Final Sat.: 1805 1842 50 1805 1830 60 760 1190 613 1224 1403 431
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.03 0.20 0.20 0.07 0.71 0.71 0.03 0.06 0.06 0.04 0.14 0.14
Crit Moves: **** ****
Green/Cycle: 0.06 0.54 0.54 0.19 0.67 0.67 0.14 0.14 0.14 0.14 0.14 0.14
Volume/Cap: 0.59 0.37 0.37 0.37 1.06 1.06 0.18 0.40 0.40 0.26 0.96 0.96
Delay/Veh: 41.0 9.7 9.7 25.2 54.4 54.4 27.2 28.3 28.3 27.5 73.8 73.8
User DelAdj: 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: 41.0 9.7 9.7 25.2 54.4 54.4 27.2 28.3 28.3 27.5 73.8 73.8
LOS by Move: D A A C D D C C C C E E
HCM2kAvgQ: 2 5 5 3 45 45 1 2 2 1 10 10

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 24th St / 2nd AV

Cycle (sec): 70 Critical Vol./Cap.(X): 0.579
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 12.0
Optimal Cycle: 31 Level Of Service: B

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for various adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 24th St / Portola Wy

Cycle (sec): 50 Critical Vol./Cap.(X): 0.573
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 5.8
Optimal Cycle: 29 Level Of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for various adjustment factors (Growth, Initial, Added, Passer, Initial, User, PHF, Reduct, PCE, MLF, Final).

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.005
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 32.4
Optimal Cycle: 152 Level Of Service: C

Table with columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Protected, etc.), Rights, Min. Green, Lanes.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.990
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 38.3
Optimal Cycle: 127 Level Of Service: D

Table with columns: Approach (North, South, East, West Bound), Movement (L, T, R), Control (Split Phase, Protected, etc.), Rights, Min. Green, Lanes.

Volume Module:

Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns: Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.853
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 29.7
Optimal Cycle: 72 Level Of Service: C

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes, Min. Green, and Lanes.

Volume Module:except thru movements

Table with 12 columns representing different movement directions. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module:

Table with 12 columns. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 43.2 Worst Case Level Of Service: F[1304.3]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, Lanes.

Volume Module:

Table with 12 columns. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Critical Gap Module:

Table with 12 columns. Rows include Critical Gp and FollowUpTim.

Capacity Module:

Table with 12 columns. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 12 columns. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 85 Critical Vol./Cap.(X): 0.978
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 47.5
Optimal Cycle: 142 Level Of Service: D

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative PM Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 1.140
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 33.2
Optimal Cycle: 180 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module:

Table with 12 columns for traffic volume and 12 columns for adjustment factors. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns for saturation flow. Rows include Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns for capacity analysis. Rows include Vol/Sat, Crit Moves, Green/Cycle, Volume/Cap, Delay/Veh, User DelAdj, AdjDel/Veh, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative Saturday Peak Hour

Scenario Report

Scenario: Sat
Command: Sat
Volume: Sat
Geometry: Baseline
Impact Fee: Default Impact Fee
Trip Generation: Sat
Trip Distribution: Baseline
Paths: Baseline
Routes: Default Route
Configuration: Sat

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Freeport Bl / 2nd Av

Cycle (sec): 70 Critical Vol./Cap.(X): 0.514
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 13.8
Optimal Cycle: 34 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: Protected Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 4 10 10 4 10 10 4 10 10 4 10 10
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 1 0
-----|-----|-----|-----|
Volume Module:
Base Vol: 36 284 9 47 574 17 19 37 19 35 62 74
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: 36 284 9 47 574 17 19 37 19 35 62 74
Added Vol: 0 0 0 4 31 0 0 1 6 0 6 30
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 36 284 9 51 605 17 19 38 25 35 68 104
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: 36 284 9 51 605 17 19 38 25 35 68 104
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 36 284 9 51 605 17 19 38 25 35 68 104
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
FinalVolume: 36 284 9 51 605 17 19 38 25 35 68 104
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 1.00 1.00 0.95 1.00 1.00 0.50 0.94 0.94 0.72 0.91 0.91
Lanes: 1.00 0.97 0.03 1.00 0.97 0.03 1.00 0.60 0.40 1.00 0.40 0.60
Final Sat.: 1805 1832 58 1805 1841 52 944 1077 709 1362 683 1044
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.02 0.15 0.15 0.03 0.33 0.33 0.02 0.04 0.04 0.03 0.10 0.10
Crit Moves: **** ****
Green/Cycle: 0.06 0.50 0.50 0.18 0.62 0.62 0.19 0.19 0.19 0.19 0.19 0.19
Volume/Cap: 0.35 0.31 0.31 0.15 0.53 0.53 0.11 0.19 0.19 0.14 0.53 0.53
Delay/Veh: 33.8 10.6 10.6 24.2 7.8 7.8 23.7 24.1 24.1 23.8 27.1 27.1
User DelAdj: 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: 33.8 10.6 10.6 24.2 7.8 7.8 23.7 24.1 24.1 23.8 27.1 27.1
LOS by Move: C B B C A A C C C C C
HCM2kAvgQ: 1 4 4 1 8 8 0 1 1 1 4 4

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Freeport Bl (North)/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.706
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 16.5
Optimal Cycle: 48 Level of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic flows and 12 rows for metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for traffic flows and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for traffic flows and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 City College Dr/Sutterville Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 0.521
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 16.7
Optimal Cycle: 40 Level of Service: B

Table with 4 columns: Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns for traffic flows and 12 rows for metrics like Base Vol, Growth Adj, Initial Bse, etc.

Saturation Flow Module table with 12 columns for traffic flows and 4 rows for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with 12 columns for traffic flows and 12 rows for Vol/Sat, Crit Moves, Green/Cycle, etc.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 Road A/Sutterville Road

Cycle (sec): 70 Critical Vol./Cap.(X): 0.703
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 20.9
Optimal Cycle: 48 Level Of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

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, LOS by Move, and HCM2kAvgQ.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #19 Curtis Dr West/Sutterville Rd

Average Delay (sec/veh): 25.4 Worst Case Level Of Service: F[558.3]

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Lanes, and Volume Module.

Table with 12 columns for traffic flow metrics. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module table with 12 columns for Critical Gap and FollowUp Time.

Capacity Module table with 12 columns for Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Level of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 Franklin Bl/Sutterville Rd

Cycle (sec): 85 Critical Vol./Cap.(X): 0.812
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 30.2
Optimal Cycle: 75 Level of Service: C

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of volume and adjustment factors.

Saturation Flow Module table with 12 columns and 5 rows showing saturation flow rates and adjustment factors.

Capacity Analysis Module table with 12 columns and 10 rows showing capacity analysis metrics.

Note: Queue reported is the number of cars per lane.

Curtis Park Village
Multifamily Alternative C (Mitigated)
Cumulative Saturday Peak Hour

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 Road A/Area 1

Cycle (sec): 70 Critical Vol./Cap.(X): 0.719
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 9.6
Optimal Cycle: 42 Level of Service: A

Table with 4 columns: Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, and Lanes.

Volume Module table with 12 columns representing different traffic flows and 12 rows of volume and adjustment factors.

Saturation Flow Module table with 12 columns and 5 rows showing saturation flow rates and adjustment factors.

Capacity Analysis Module table with 12 columns and 10 rows showing capacity analysis metrics.

Note: Queue reported is the number of cars per lane.

Sutterville Road Access Feasibility Study

Prepared for:
City of Sacramento, California

Submitted by:

Dowling Associates, Inc.

Transportation Engineering • Planning • Research • Education



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Oakland, CA 94612

Phone: (510) 839-1742; Fax: (510) 839-0871

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Contact: Debbie Yueh (x126)

DRAFT

March 31, 2009



June 27, 2008

City of Sacramento
Department of Transportation
1231 I Street
Sacramento, CA 95814
Attn: Samar Hajeer, Senior Engineer

Subject: Sutterville Road Access Feasibility Study – Draft Report P07005.08

Dear Samar:

Dowling Associates is pleased to submit this revised draft report for the Sutterville Road Access Feasibility Study. The report documents our analysis of baseline and cumulative conditions.

Sincerely,

Dowling Associates, Inc.

<sent via email>

Mark Bowman
Principal

Debbie Yueh
Senior Planner

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Overview

Sutterville Road is a two-mile long east-west roadway that runs from I-5 near Riverside Boulevard east along the southern edge of Land Park to Freeport Boulevard. It then resumes about 1,200 feet north as a four-lane arterial road to Franklin Boulevard where it continues as 12th Avenue. A bridge on Sutterville Road passes over the Union Pacific railroad track. The study area is located to the immediate east of the overpass. Sutterville Road carried an average daily traffic volume of approximately 28,000 vehicles in 2007 in the study area.

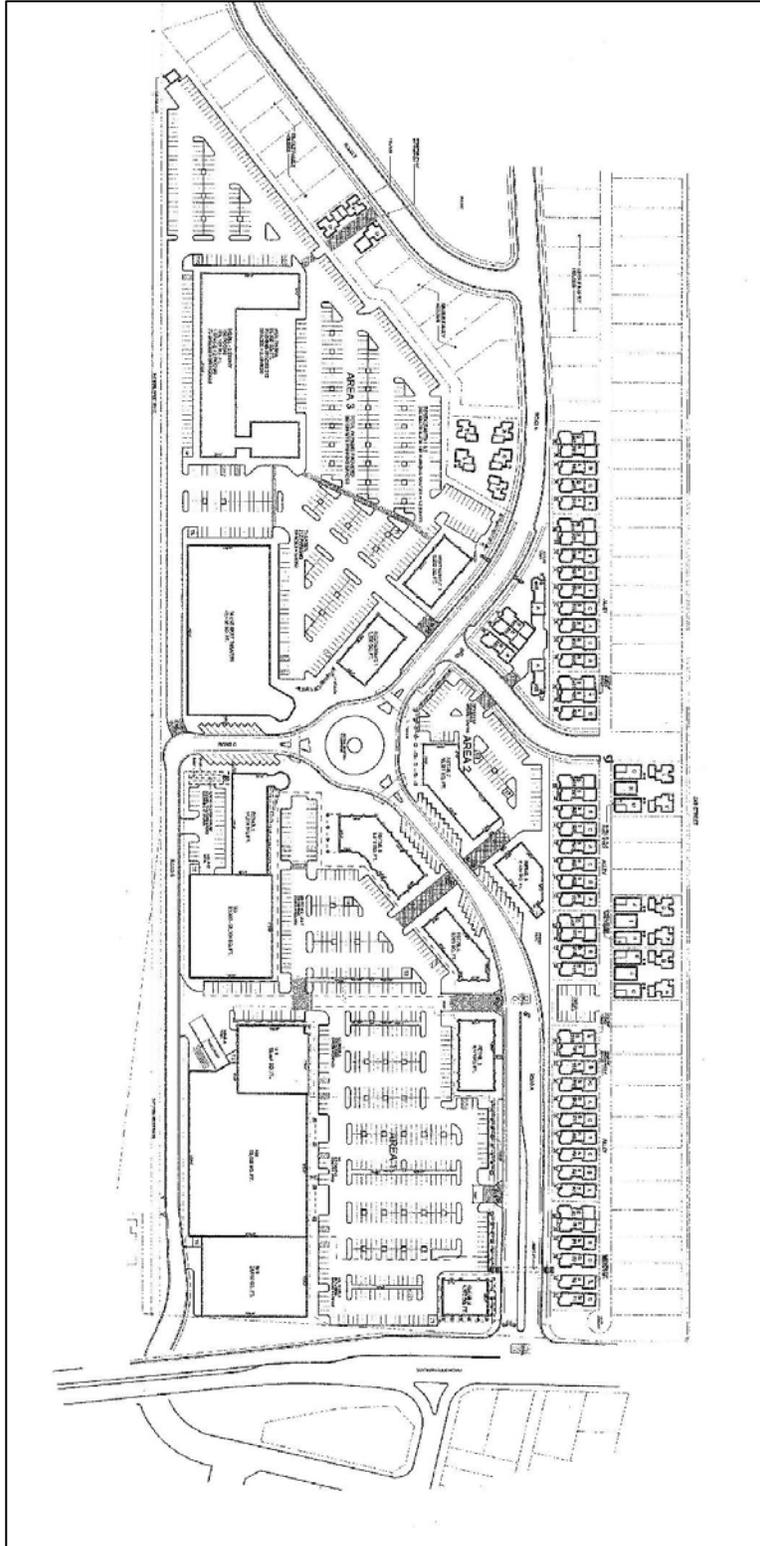
A center median divides Sutterville Road in the study area. Access between the north side and the south side of the roadway is provided by bypass loop ramps that traverse under Sutterville Road as shown in Figure 1. The bypass ramp on the north side of Sutterville Road is located in the proposed Curtis Park Village project site and is to be reconfigured as a part of that project (Curtis Park Village EIR, May 2008). After the implementation of Curtis Park Village, vehicles desiring to travel from the south to westbound Sutterville Road would have to pass through Curtis Park Village upon exiting from the underpass and enter Sutterville Road via the proposed Road A. Conversely, vehicles desiring to travel from westbound Sutterville Road to the south would enter Road A, pass through Curtis Park Village before entering the underpass. A proposed site plan of the Curtis Park Village project is shown in Figure 2.

The purpose of this study is to analyze the feasibility of two potential alternatives that would provide direct street connections between the north side and the south side of Sutterville Road. The effects of the alternatives on the adjacent street system are analyzed and mitigation measures are recommended. This doesn't include any geometric design or cost estimation.

Figure 1 Aerial Photo of Study Area



Figure 2 Proposed Curtis Park Village Site Plan



Project Alternatives

Two access alternatives were developed with guidance from City staff. Both alternatives focused on Road A, the main Curtis Park Village access point on the north side, and West Pacific Avenue on the south side of Sutterville Road. The two alternatives are described below:

Single Intersection. The Single Intersection Alternative would realign West Pacific Avenue to connect to Sutterville Road directly across from Road A and provide a standard four-legged signalized intersection.

Split Intersections. The Split Intersections Alternative would provide two signalized T-intersections at West Pacific Avenue and at Road A. The two intersections would be coordinated under one traffic signal controller as if it were one intersection. This alternative allows the existing alignment of West Pacific Avenue to remain.

Graphic presentations of the two alternatives are shown in Figure 3 and Figure 4. Under both alternatives, the existing underpass will remain as envisioned in the Curtis Park Village EIR and provide an alternative linkage between the south and the proposed Curtis Park Village development.

Traffic Analysis

This study focused on the effects of the proposed alternatives on the Sutterville Road intersections of Road A and West Pacific Avenue in the morning (AM) and afternoon (PM) peak hours under baseline and cumulative conditions. The alternative's potential impacts on nearby roadways will be qualitatively discussed. A brief description of each of the roadways is provided below:

Sutterville Road is a four-lane divided arterial between the railroad overpass and Jeffrey Avenue.

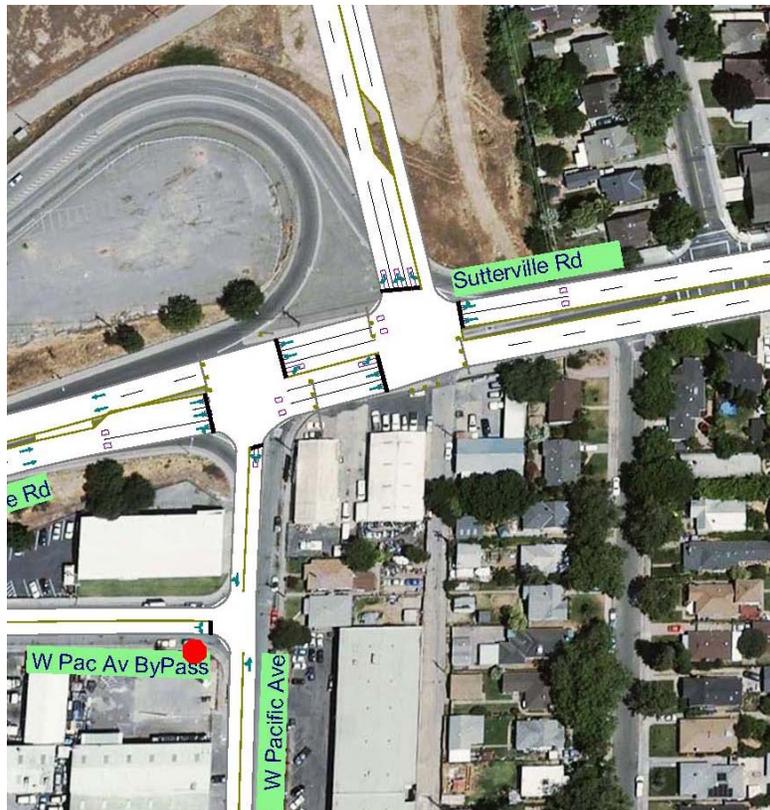
West Pacific Avenue is a two-lane local road that operates between Sutterville Road and 18th Avenue. It serves a mix of primarily industrial land uses north of Wilmington Avenue and residential land uses south of Wilmington Avenue.

Deeble Street is a two-lane local road that runs from West Pacific Avenue Bypass through an industrial area to terminate in the residential neighborhood south of Wilmington Avenue.

Figure 3 Single Intersection Alternative



Figure 4 Split Intersections Alternative



West Pacific Avenue Bypass is a two-lane road that connects West Pacific Avenue to Deeble Street on the north and south sides of Sutterville Road.

Jeffrey Avenue lies on the east of West Pacific Avenue and extends from Sutterville Road south to 18th Avenue. It then resumes 75 yards west and continues south to terminate at Lew Way. Residential land uses are found along the full length of the two-lane local roadway.

Wilmington Avenue runs parallel to and south of Sutterville Road between Deeble Street and Franklin Boulevard. In the study area, it has two travel lanes and serves as a divider between primarily industrial and residential land uses.

The traffic volumes used in this study were derived from data from the Curtis Park Village EIR. The development assumptions and mitigation measures identified in the Curtis Park Village EIR were assumed to be in place.

Both proposed project alternatives assume that all existing loop ramp traffic that is not generated by Curtis Park Village will be diverted onto Sutterville Road or West Pacific Avenue through the study intersection(s).

Analysis Methodology

“Levels of service” describe the operating conditions experienced by motorists. Level of service is a qualitative measure of the effect of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, driving comfort and convenience. Levels of service are designated "A" through "F" from best to worst, which cover the entire range of traffic operations that might occur. Level of Service (LOS) "A" through "E" generally represent traffic volumes at less than roadway capacity, while LOS "F" represents over capacity and/or forced flow conditions.

The City of Sacramento General Plan (October 1987) outlines the goals and policies that coordinate the transportation and circulation system with planned land uses. The General Plan (Goal D, Street and Road section) identifies LOS C as the goal for City’s local and major street system except at freeway ramp intersections, where the goal is LOS D.

The intersection level of service analysis was performed using the Synchro traffic impact analysis software package.

Signalized Intersections Analysis

Signalized intersection analyses were conducted using the operational methodology outlined in the Highway Capacity Manual (Transportation Research Board, Washington, D.C., 2000, Chapters 10 and 16). This procedure calculates an average stopped delay per vehicle at a signalized intersection, and assigns a level of service designation based upon the delay. The method also provides a calculation of the volume-to-capacity (v/c) ratio of the critical movements at the intersection. Table 1 shows level of service criteria for signalized intersections.

Table 1 Level Of Service Criteria – Signalized Intersections		
Level of Service (LOS)	Average Delay (seconds/vehicle)	Description
A	≤ 10	Very Low Delay: This level of service occurs when progression is extremely favorable and most vehicles arrive during a green phase. Most vehicles do not stop at all.
B	>10 and ≤ 20	Minimal Delays: This level of service generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.
C	> 20 and ≤ 35	Acceptable Delay: Delay increases due to only fair progression, longer cycle lengths, or both. Individual cycle failures (to service all waiting vehicles) may begin to appear at this level of service. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	> 35 and ≤ 55	Approaching Unstable Operation/Significant Delays: The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume / capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55 and ≤ 80	Unstable Operation/Substantial Delays: These high delay values generally indicate poor progression, long cycle lengths, and high volume / capacity ratios. Individual cycle failures are frequent occurrences.
F	> 80	Excessive Delays: This level, considered unacceptable to most drivers, often occurs with oversaturation (that is, when arrival traffic volumes exceed the capacity of the intersection). It may also occur at nearly saturated conditions with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

Source: Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 2000, pages 10-16 and 16-2.

Unsignalized Intersections Analysis

Stop sign controlled intersections were analyzed utilizing the methodology outlined in the Highway Capacity Manual (Transportation Research Board, Washington, D.C., 2000, Chapters 10 and 17). This methodology determines the Level of Service by calculating an average total delay per vehicle for each controlled movement and for the intersection as a whole. A LOS designation is assigned based upon the average control delay of all movements. Table 2 presents the relationship of total delay to level of service for stop controlled intersections.

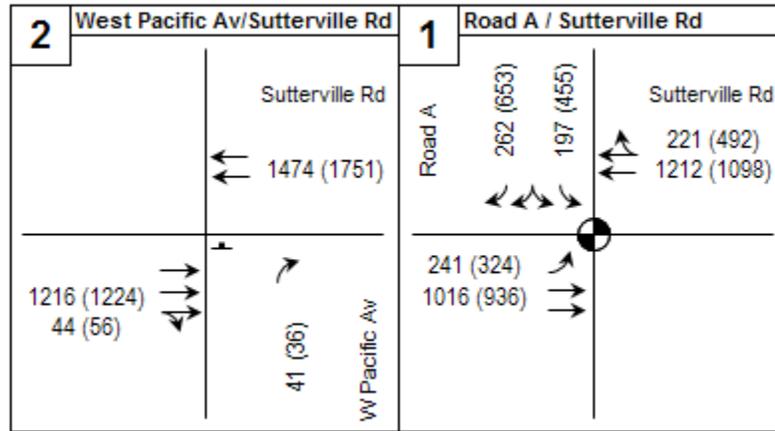
Level of Service	Average Control Delay (seconds/vehicle)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

Source: Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 2000, pages 10-16 and 16-2.

Baseline Conditions

The performance of the traffic operations under baseline conditions was established to serve as a basis to evaluate the effects of the proposed alternatives on the roadway network. The baseline traffic volumes include estimated traffic on the existing roadway network plus projected vehicle trips that would be generated by future developments that are pending or have been approved by the City, such as the Curtis Park Village development. The baseline No Project traffic volumes and lane geometries at the two study intersections are shown in Figure 5.

Figure 5 Intersection Volumes and Geometries – Baseline No Project Conditions



Baseline peak hour traffic volumes and lane geometries at the study intersections under the Single Intersection Alternative and the Split Intersection Alternative are shown in Figure 6 and Figure 7, respectively.

Figure 6 Intersection Volumes and Geometries - Single Intersection Alternative

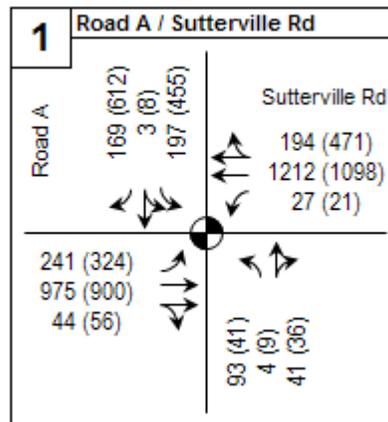
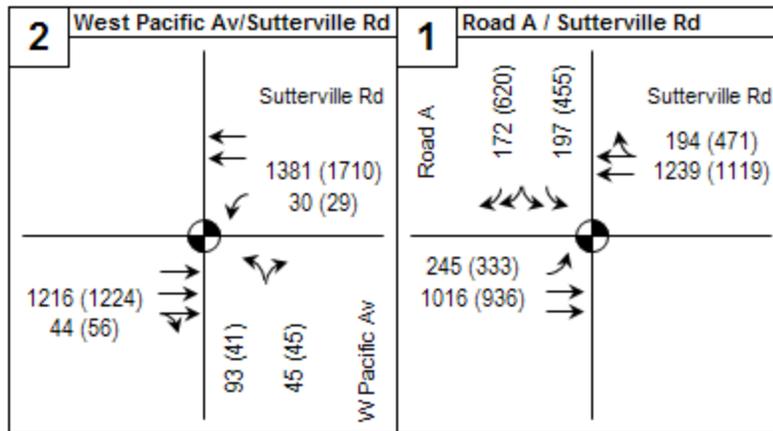


Figure 7 Intersection Volumes and Geometries - Split Intersections Alternative



Baseline Intersection Operations

The baseline AM and PM peak hour intersection level of service results are presented in Table 3.

Intersection	Peak Hour	No Project		Single Intersection Alternative		Split Intersections Alternative	
		Delay	LOS	Delay	LOS	Delay	LOS
Road A / Sutterville Road	AM	17.4	B	40.3	D	18.8	B
	PM	39.4	D	83.7	F	71.5	E
West Pacific Avenue/Sutterville Road	AM	0.2	A			7.6	A
	PM	0.1	A			9.1	A

Note:
 Delay denotes average vehicle delay in seconds
 LOS denotes level of service

If neither of the project alternatives is implemented, the intersection of Road A and Sutterville Road would operate at LOS D with over 39 seconds of average vehicle delay in the PM peak hour. The 95th percentile queue length for the single-lane eastbound left-turn movement is 390 feet and for the two-lane southbound left-turn movement is 248 in the PM peak hour.

With the implementation of the Single Intersection Alternative and the Split Intersections Alternative, the results indicated that the Road A and Sutterville Road intersection would operate at LOS F and LOS E under the two alternatives in the PM peak hour, respectively. The intersection would also degrade to LOS D under the Single Intersection Alternative in the AM peak hour.

The long eastbound and southbound left-turning queues at the Road A intersection may also impact traffic operations as the queues may extend beyond the storage bays and block the through traffic lanes. As shown in Table 4, the issue with storage capacity is particularly acute in the PM peak hour.

Table 4 Left-turning Movements 95th Percentile Queue Lengths at the Road A intersection – Baseline Conditions (in feet)					
Approach	Peak Hour	No Project	Single Intersection Alternative	Split Intersections Alternative	Maximum Available Capacity¹
Eastbound	AM	239	391	324	450 ²
	PM	390	597	482	450 ²
Southbound	AM	76	100	146	300 ³
	PM	248	253	418	300 ³
¹ Based of rough measurements of available site plans or aerial photos ² Estimated distance between the Sutterville Road Underpass and Road A less transition distance; other considerations may shorten available storage capacity. ³ Estimated maximum distance available for SB left-turn pocket based on Curtis Park site plan dated March 12, 2008.					

While not reflected in the level of service results, a potential operational and safety issue has been identified for the Split Intersections Alternative. Vehicles traveling from Curtis Park Village to the south or vice versa via the study intersections on Sutterville Road would have to cut across two travel lanes within a short distance to reach the left-turn pocket upon making the right turn. Blockage of the through lanes or increased safety hazard may result with such a

maneuver. However, the number of vehicles making such a maneuver is likely to be few because an alternative route is provided through the underpass.

Baseline Intersection Mitigation Measures

Improvement measures have been identified to lessen the impacts of the proposed project alternatives at the study intersections. These improvement measures and the improved outcomes are described below.

For the Single Intersection Alternative, implementing the following measures would improve the Road A/West Pacific Avenue and Sutterville Road intersection to LOS C in both the AM and PM peak hours with average delays of 22.1 seconds and 34 seconds, respectively.

- Add one eastbound left-turn lane to provide two left-turn lanes, one through lane and one through-right shared lane;
- Add one dedicated westbound right-turn lane. This improvement has been identified as a mitigation measure under cumulative conditions in the Curtis Park Village EIR;
- Optimize traffic signal phase split.

The 95th percentile left-turn queue would be 137 feet for the eastbound approach and 434 feet for the southbound approach in the PM peak hour. The project should provide sufficient storage capacities wherever feasible.

For the Split Intersections Alternative, implementing the following measures would improve the Road A and Sutterville Road intersection to LOS B (14.6 seconds of delay) in the AM peak hour and LOS C (32.4 seconds of delay) in the PM peak hour. The operations at the West Pacific Avenue and Sutterville Road intersections would also improve.

- Re-stripe the southbound lanes at the Road A intersection to provide one right-turn lane and two left-turn lanes;
- Add one eastbound left-turn lane to provide two left-turn lanes; one through lane and one through-right shared lane at the Road A intersection; and add one eastbound through lane at the West Pacific Avenue intersection as an extended left-turn pocket.
- Provide signage to direct vehicles traveling between Curtis Park Village and the south to use the Sutterville Road underpass.

The 95th percentile left-turn queue for the Split Intersections Alternative would be 211 feet for the eastbound approach and 269 feet for the southbound approach. The project should provide sufficient storage capacities wherever feasible.

Cumulative Conditions

The cumulative conditions analysis focuses on year 2027 conditions. As with baseline conditions, the traffic volumes were derived from the Curtis Park Village EIR and mitigation measures identified in that study are assumed to be implemented. Further, the baseline mitigation measures described above are also assumed to be in place for the analysis of cumulative conditions.

The traffic volumes and lane geometries for the Cumulative No Project, Single Intersection Alternative, and Split Intersection Alternative are presented in Figure 8, Figure 9, and Figure 10, respectively.

Figure 8 Cumulative Intersection Volumes and Geometries –No Project Conditions

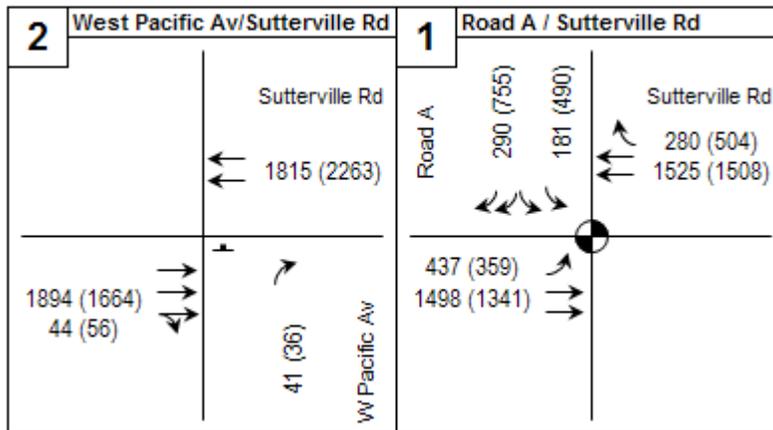


Figure 9 Cumulative Intersection Volumes and Geometries - Single Intersection Alternative

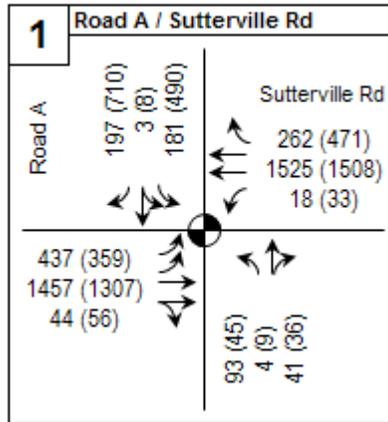
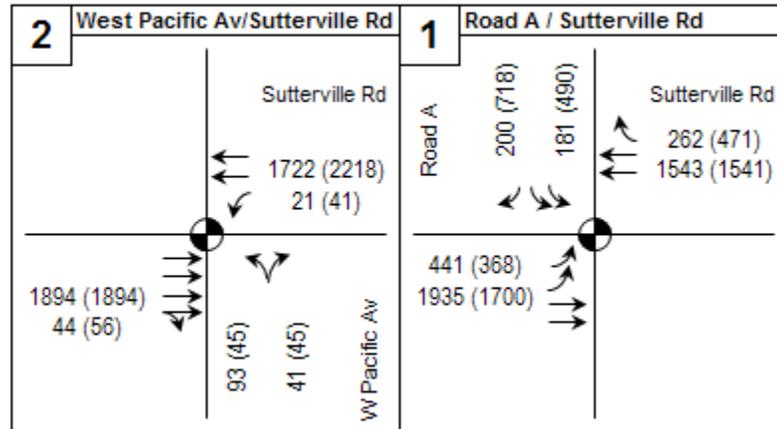


Figure 10 Cumulative Intersection Volumes and Geometries - Split Intersections Alternative



Cumulative Intersection Operations

The intersection level of service results are shown in Table 5. The Road A and Sutterville Road intersection would operate at LOS D under the No Project scenario in the PM peak hour. The 95th percentile left-turn queue would exceed possible storage capacity in the AM peak hour for both the eastbound and southbound approaches.

Intersection	Peak Hour	No Project		Single Intersection Alternative		Split Intersections Alternative	
		Delay	LOS	Delay	LOS	Delay	LOS
Road A / Sutterville Road	AM	28.6	C	44.6	D	17.6	B
	PM	35.7	D	49.9	D	28.0	C
West Pacific Avenue/Sutterville Road	AM	0.2	A			8.2	A
	PM	0.1	A			12.6	B

Note:
 Delay denotes average vehicle delay in seconds
 LOS denotes level of service

Under the Single Intersection Alternative, the Road A intersection would operate at LOS D in both the AM and PM peak hours. Under the Split Intersections Alternative, both the Road A and the West Pacific Avenue intersections would operate within City standards during the peak hours.

As shown in Table 6, the 95th percentile left-turn queue lengths at the Road A and Sutterville Road intersection may be adequately accommodated by the maximum available storage capacity.

Table 6 Left-turning Movements 95th Percentile Queue Lengths – Cumulative Conditions (in feet)					
Approach	Peak Hour	No Project	Single Intersection Alternative	Split Intersections Alternative	Maximum Available Capacity¹
Eastbound	AM	509	315	262	450 ²
	PM	443	286	224	450 ²
Southbound	AM	762	92	107	300 ³
	PM	286	273	293	300 ³
<p>¹ Based of rough measurements of available site plans or aerial photos</p> <p>² Estimated distance between the Sutterville Road Underpass and Road A less transition distance; other considerations may shorten available storage capacity.</p> <p>³ Estimated maximum distance available for SB left-turn pocket based on Curtis Park site plan dated March 12, 2008.</p>					

Cumulative Mitigation Measures

By optimizing the traffic signal phase split, the impacts of the Single Intersection Alternative would be lessened. The level of service at the Road A/West Pacific Avenue and Sutterville Road intersection would improve to LOS C in the AM peak hour but would remain at LOS D in the PM peak hour with a decrease in average delay by 8.4 seconds to 41.5 seconds.

Roadway Impacts

The potential impacts of the two project alternatives on the study roadway segments are discussed in this section.

The project alternatives have little effect on the roadway network beyond the study area, which is defined by the railroad underpass to the west, Jeffrey Avenue to the east, Wilmington Avenue to the south and Sutterville Road to the north. Even within the boundaries, the potential changes in traffic volumes on the study roadways are relatively minor.

West Pacific Avenue

The largest change would be seen on West Pacific Avenue, where vehicles would be diverted from the underpass. Under the baseline conditions, northbound traffic would increase by 93 (41) vehicles for both project alternatives during the AM (PM) peak hours; while southbound traffic would increase by 27(21) vehicles and 30(29) vehicles for the Single Intersection and the Split Intersections Alternatives, respectively. Under the cumulative conditions, northbound traffic would increase by 93(45) vehicles for both alternatives; while southbound traffic would increase by 18(33) vehicles and 21(41) vehicles for the Single Intersection and the Split Intersections Alternatives, respectively.

Sutterville Road

The only changes in traffic volumes on Sutterville Road occur between the intersections of Road A and West Pacific Avenue. The Single Intersection Alternative would result in an increase of 3(20) eastbound vehicles in the AM(PM) peak hours under both baseline and cumulative conditions. The Split Intersections Alternative would cause the westbound volumes to decrease by 63 (12) vehicles in the AM(PM) peak hours and the eastbound volumes to increase by 4(9) vehicles during the same periods.

Deeble Street

The traffic on Deeble Street between Sutterville Road and Wilmington Avenue would likely decline as a result of the project alternatives. With fewer vehicles utilizing the underpass, the diverted traffic not destined for locations on Deeble Street could be expected to utilize West Pacific Avenue.

Jeffrey Avenue

The traffic on Jeffrey Avenue between Sutterville Road and Wilmington Avenue is relatively light. The 2005 counts showed 10 northbound and 13 southbound vehicles during the AM peak hour and 15 vehicles on each direction during the PM peak hour. While a few of the northbound vehicles intended to head west on Sutterville Road may shift to West Pacific Road, it is unlikely the amount would be significant since the underpass option has always been available.

Wilmington Avenue

The reduction in traffic on Deeble Street would have a direct effect on Wilmington Avenue. The traffic on the segment between Deeble Street and West Pacific Avenue could be expected to decrease relatively. No other significant change on Wilmington Avenue is anticipated.

Conclusion

The advantages and disadvantages of the two access alternatives are summarized below.

Single Intersection Alternative

The advantages of the Single Intersection Alternative are:

- Standard 4-legged configuration that motorists, pedestrians and other users are familiar with;
- Few operational issues that would result in hazardous maneuvers.

The disadvantages of the Single Intersection Alternative are:

- The mitigated level of service at the Road A and Sutterville Road intersection is lower under the Single Intersection Alternative. Specifically, the intersection would continue to operate at substandard level at LOS D with 41.5 seconds of delay in the PM peak hour under cumulative conditions even after the recommended mitigation measures are implemented.
- The Single Intersection Alternative requires changes to the existing street network and right-of-way acquisition.

Split Intersection Alternative

The advantage of the Split Intersection Alternative is:

- The level of service at the Road A and Sutterville Road intersection is better than the Single Intersection Alternative. The intersection would operate at LOS C or better after the recommended mitigation measures are implemented.

The disadvantages of the Split Intersection Alternative are:

- As discussed under the Baseline Intersection Operation section, safety hazard may be created by vehicles traveling from Pacific Avenue to Road A or from Road A to Pacific Avenue. A no-right-turn-on-red restriction (RTOR) is needed at both intersections to resolve this potential safety issue. If the no RTOR restriction is applied, the level of service at the Road A intersection would degrade to substandard conditions. For instance, in the PM peak hour under cumulative conditions, the intersection operation would drop from LOS C with 28 seconds of delay to LOS D with 54.8 seconds of delay.
- Bicyclists who wish to cross Sutterville Road would also face the same difficult weaving maneuvers.
- The Split Intersection Alternative extends the eastbound left-turn pocket to west of Pacific Avenue in order to accommodate the heavy movement onto Road A. The necessary distance at Pacific Avenue between the two left-turn pocket segments may cause the signal to gap out early; thereby vehicles waiting in the western pocket segment might not be able to clear the eastern segment and would have to stop again. Any increase in gap time to remedy this situation would result increase delay at the intersection.
- Vehicles eager to make the eastbound left-turn may be caught in the Pacific Avenue intersection when the left-turn arrow turns red sooner than anticipated.

Recommendation

The Single Intersection Alternative is clearly the preferred design concept for reconfiguration of access to the South Sutterville Road area. The mitigated Single Intersection Alternative would operate at LOS C or better and avoid operational inefficiencies associated with the Split Intersection Alternative. The Single Intersection Alternative would also provide safer traffic operations and better service for pedestrians and bicyclists than the Split Intersection Alternative. The Single Intersection Alternative is more consistent with the City's goal

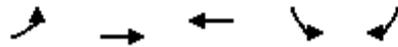
of providing a safe and efficient transportation system and a pedestrian-friendly environment.

Appendices

**Queue Analysis
and
Level of Service Calculation Sheets**

Queues

1: Sutterville Rd & Road A



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	241	1016	1433	312	147
v/c Ratio	0.73	0.39	0.82	0.51	0.25
Control Delay	44.3	5.1	23.3	20.6	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	5.1	23.3	20.6	13.6
Queue Length 50th (ft)	100	61	275	43	41
Queue Length 95th (ft)	#239	190	#591	76	79
Internal Link Dist (ft)		41	587	402	
Turn Bay Length (ft)				100	
Base Capacity (vph)	365	2613	1739	1038	557
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.66	0.39	0.82	0.30	0.26

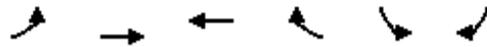
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & Road A

No Proj Baseline - AM Peak Hour

6/26/2008



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	241	1016	1212	221	197	262
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	0.95		0.97	0.91
Frt	1.00	1.00	0.98		0.94	0.85
Flt Protected	0.95	1.00	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	3457		3309	1441
Flt Permitted	0.95	1.00	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	3457		3309	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	241	1016	1212	221	197	262
RTOR Reduction (vph)	0	0	14	0	97	11
Lane Group Flow (vph)	241	1016	1419	0	215	136
Turn Type	Prot				pm+ov	
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	14.3	56.4	38.1		11.9	26.2
Effective Green, g (s)	14.3	56.4	38.1		11.9	26.2
Actuated g/C Ratio	0.19	0.74	0.50		0.16	0.34
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	332	2616	1726		516	570
v/s Ratio Prot	c0.14	0.29	c0.41		c0.06	0.04
v/s Ratio Perm						0.05
v/c Ratio	0.73	0.39	0.82		0.42	0.24
Uniform Delay, d1	29.2	3.6	16.2		29.1	17.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	7.7	0.4	4.6		0.5	0.2
Delay (s)	36.8	4.1	20.8		29.6	18.1
Level of Service	D	A	C		C	B
Approach Delay (s)		10.4	20.8		25.9	
Approach LOS		B	C		C	

Intersection Summary

HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	76.3	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 Unsignalized Intersection Capacity Analysis
2: Sutterville Rd & W Pacific Ave

No Proj Baseline - AM Peak Hour

6/26/2008



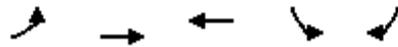
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↗
Volume (veh/h)	1216	44	0	1474	0	41
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1216	44	0	1474	0	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				121		
pX, platoon unblocked				0.65		
vC, conflicting volume	1216			1975 427		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1216			1429 427		
tC, single (s)	4.1			6.8 6.9		
tC, 2 stage (s)						
tF (s)	2.2			3.5 3.3		
p0 queue free %	100			100 93		
cM capacity (veh/h)	569			82 576		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	486	486	287	737	737	41
Volume Left	0	0	0	0	0	0
Volume Right	0	0	44	0	0	41
cSH	1700	1700	1700	1700	1700	576
Volume to Capacity	0.29	0.29	0.17	0.43	0.43	0.07
Queue Length 95th (ft)	0	0	0	0	0	6
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	11.7
Lane LOS						B
Approach Delay (s)	0.0			0.0		11.7
Approach LOS						B

Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization	44.1%		ICU Level of Service		A	
Analysis Period (min)	15					

Queues

1: Sutterville Rd & Road A



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	324	936	1590	755	353
v/c Ratio	0.97	0.39	1.02	0.83	0.51
Control Delay	84.5	7.8	53.2	35.7	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	84.5	7.8	53.2	35.7	18.8
Queue Length 50th (ft)	201	121	~538	179	142
Queue Length 95th (ft)	#390	172	#711	248	229
Internal Link Dist (ft)		41	848	401	
Turn Bay Length (ft)				100	
Base Capacity (vph)	333	2402	1565	1009	692
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.97	0.39	1.02	0.75	0.51

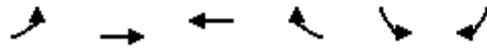
Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & Road A

No Proj Baseline PM Peak Hour

6/26/2008



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	324	936	1098	492	455	653
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	0.95		0.97	0.91
Frt	1.00	1.00	0.95		0.94	0.85
Flt Protected	0.95	1.00	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	3375		3299	1441
Flt Permitted	0.95	1.00	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	3375		3299	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	324	936	1098	492	455	653
RTOR Reduction (vph)	0	0	50	0	124	20
Lane Group Flow (vph)	324	936	1540	0	631	333
Turn Type	Prot				pm+ov	
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	18.0	65.1	43.1		22.8	40.8
Effective Green, g (s)	18.0	65.1	43.1		22.8	40.8
Actuated g/C Ratio	0.19	0.68	0.45		0.24	0.43
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	332	2402	1517		784	673
v/s Ratio Prot	c0.18	0.26	c0.46		c0.19	0.09
v/s Ratio Perm						0.14
v/c Ratio	0.98	0.39	1.02		0.80	0.49
Uniform Delay, d1	38.7	6.7	26.4		34.4	20.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	42.5	0.5	27.0		6.0	0.6
Delay (s)	81.2	7.2	53.4		40.5	20.6
Level of Service	F	A	D		D	C
Approach Delay (s)		26.2	53.4		34.1	
Approach LOS		C	D		C	

Intersection Summary

HCM Average Control Delay	39.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
2: Sutterville Rd & W Pacific Ave

No Proj Baseline PM Peak Hour
6/26/2008



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↗
Volume (veh/h)	1224	56	0	1751	0	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1224	56	0	1751	0	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				121		
pX, platoon unblocked				0.57		
vC, conflicting volume	1224			2128		436
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1224			1475		436
tC, single (s)	4.1			6.8		6.9
tC, 2 stage (s)						
tF (s)	2.2			3.5		3.3
p0 queue free %	100			100		94
cM capacity (veh/h)	565			67		568

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	490	490	301	876	876	36
Volume Left	0	0	0	0	0	0
Volume Right	0	0	56	0	0	36
cSH	1700	1700	1700	1700	1700	568
Volume to Capacity	0.29	0.29	0.18	0.52	0.52	0.06
Queue Length 95th (ft)	0	0	0	0	0	5
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	11.8
Lane LOS						B
Approach Delay (s)	0.0			0.0		11.8
Approach LOS						B

Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization	51.7%		ICU Level of Service		A	
Analysis Period (min)	15					

Queues
1: Sutterville Rd & W. Pacific Ave

Single Int Baseline AM Peak
6/26/2008



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	241	1019	27	1406	93	45	100	100	169
v/c Ratio	1.21	0.52	0.26	1.00	0.34	0.16	0.37	0.37	0.32
Control Delay	166.2	19.0	45.3	51.3	31.1	11.7	31.6	31.6	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	166.2	19.0	45.3	51.3	31.1	11.7	31.6	31.6	3.9
Queue Length 50th (ft)	~127	125	11	~337	35	1	40	40	0
Queue Length 95th (ft)	#391	#498	46	#818	88	29	100	100	20
Internal Link Dist (ft)		823		1021		193		277	
Turn Bay Length (ft)	250		100		100		100		
Base Capacity (vph)	199	1970	103	1403	555	532	529	531	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.21	0.52	0.26	1.00	0.17	0.08	0.19	0.19	0.32

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & W. Pacific Ave

Single Int Baseline AM Peak

6/26/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	241	975	44	27	1212	194	93	4	41	197	3	169
Ideal Flow (vphpl)	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
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	1770	3516		1770	3466		1770	1608		1681	1688	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	1770	3516		1770	3466		1770	1608		1681	1688	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	241	975	44	27	1212	194	93	4	41	197	3	169
RTOR Reduction (vph)	0	2	0	0	10	0	0	36	0	0	0	130
Lane Group Flow (vph)	241	1017	0	27	1396	0	93	9	0	100	100	39
Turn Type	Prot			Prot			Split			Split		pm+ov
Protected Phases	5	2		1	6		8	8		4	4	5
Permitted Phases												4
Actuated Green, G (s)	7.6	36.5		1.3	30.2		8.9	8.9		9.2	9.2	16.8
Effective Green, g (s)	7.6	36.5		1.3	30.2		8.9	8.9		9.2	9.2	16.8
Actuated g/C Ratio	0.11	0.51		0.02	0.42		0.12	0.12		0.13	0.13	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	187	1785		32	1456		219	199		215	216	370
v/s Ratio Prot	c0.14	0.29		0.02	c0.40		c0.05	0.01		c0.06	0.06	0.01
v/s Ratio Perm												0.01
v/c Ratio	1.29	0.57		0.84	0.96		0.42	0.05		0.47	0.46	0.11
Uniform Delay, d1	32.2	12.3		35.2	20.2		29.1	27.8		29.1	29.1	21.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	164.0	1.3		95.7	15.6		1.3	0.1		1.6	1.6	0.1
Delay (s)	196.1	13.6		130.9	35.9		30.5	27.9		30.7	30.6	21.8
Level of Service	F	B		F	D		C	C		C	C	C
Approach Delay (s)		48.5			37.7			29.6			26.6	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	40.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	71.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Queues
1: Sutterville Rd & W. Pacific Ave

Single Int Baseline PM Peak
6/26/2008



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	324	956	21	1569	41	45	232	231	612
v/c Ratio	2.19	0.47	0.26	0.94	0.20	0.21	0.88	0.87	0.91
Control Delay	576.9	15.4	54.5	35.3	37.5	17.2	68.8	67.5	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	576.9	15.4	54.5	35.3	37.5	17.2	68.8	67.5	28.9
Queue Length 50th (ft)	~266	115	11	355	20	4	~129	~127	91
Queue Length 95th (ft)	#597	392	43	#900	55	36	253	252	#328
Internal Link Dist (ft)		823		1021		193		426	
Turn Bay Length (ft)	250		100		100		100		
Base Capacity (vph)	148	2028	80	1661	448	442	265	266	676
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.19	0.47	0.26	0.94	0.09	0.10	0.88	0.87	0.91

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & W. Pacific Ave

Single Int Baseline PM Peak

6/26/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	↖
Volume (vph)	324	900	56	21	1098	471	41	9	36	455	8	612
Ideal Flow (vphpl)	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
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		0.95	0.95	1.00
Frt	1.00	0.99		1.00	0.95		1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	1770	3508		1770	3380		1770	1639		1681	1688	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	1770	3508		1770	3380		1770	1639		1681	1688	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	324	900	56	21	1098	471	41	9	36	455	8	612
RTOR Reduction (vph)	0	4	0	0	41	0	0	33	0	0	0	282
Lane Group Flow (vph)	324	952	0	21	1528	0	41	12	0	232	231	330
Turn Type	Prot			Prot			Split			Split		pm+ov
Protected Phases	5	2		1	6		8	8		4	4	5
Permitted Phases												4
Actuated Green, G (s)	7.2	49.5		1.4	43.7		8.5	8.5		13.5	13.5	20.7
Effective Green, g (s)	7.2	49.5		1.4	43.7		8.5	8.5		13.5	13.5	20.7
Actuated g/C Ratio	0.08	0.56		0.02	0.49		0.10	0.10		0.15	0.15	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	143	1953		28	1661		169	157		255	256	369
v/s Ratio Prot	c0.18	0.27		0.01	c0.45		c0.02	0.01		c0.14	0.14	0.07
v/s Ratio Perm												0.14
v/c Ratio	2.27	0.49		0.75	0.92		0.24	0.08		0.91	0.90	0.89
Uniform Delay, d1	40.9	12.0		43.6	21.0		37.2	36.6		37.1	37.1	33.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	591.3	0.9		71.8	9.8		0.7	0.2		33.0	31.7	22.8
Delay (s)	632.1	12.9		115.4	30.8		38.0	36.9		70.1	68.8	55.9
Level of Service	F	B		F	C		D	D		E	E	E
Approach Delay (s)		169.6			31.9			37.4			61.7	
Approach LOS		F			C			D			E	

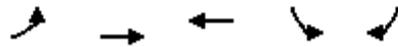
Intersection Summary

HCM Average Control Delay	83.7	HCM Level of Service	F
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Queues

1: Sutterville Rd & Road A

6/26/2008



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	245	1016	1433	254	115
v/c Ratio	0.89	0.40	0.82	0.74	0.22
Control Delay	57.3	1.9	21.8	42.2	6.6
Queue Delay	257.7	0.2	0.3	2.1	0.1
Total Delay	315.0	2.0	22.1	44.3	6.7
Queue Length 50th (ft)	87	14	192	40	0
Queue Length 95th (ft)	m#324	20	#643	#146	46
Internal Link Dist (ft)		41	848	418	
Turn Bay Length (ft)				100	
Base Capacity (vph)	275	2532	1737	344	528
Starvation Cap Reductn	120	628	0	0	0
Spillback Cap Reductn	0	0	45	27	42
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.58	0.53	0.85	0.80	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

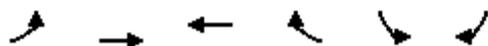
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: Sutterville Rd & Road A

Split Int Baseline AM Peak

6/26/2008



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑	↗		↙	↘
Volume (vph)	245	1016	1239	194	197	172
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	0.95		0.97	0.91
Frt	1.00	1.00	0.98		0.97	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	3467		3362	1441
Flt Permitted	0.95	1.00	1.00		0.96	1.00
Satd. Flow (perm)	1770	3539	3467		3362	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	245	1016	1239	194	197	172
RTOR Reduction (vph)	0	0	12	0	30	85
Lane Group Flow (vph)	245	1016	1421	0	224	30
Turn Type	Prot				pm+ov	
Protected Phases	5	12	6		8	5
Permitted Phases						8
Actuated Green, G (s)	12.8	49.7	32.9		6.2	19.0
Effective Green, g (s)	12.8	49.7	32.9		6.2	19.0
Actuated g/C Ratio	0.18	0.69	0.46		0.09	0.26
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	316	2453	1591		291	462
v/s Ratio Prot	c0.14	0.29	c0.41		c0.07	0.01
v/s Ratio Perm						0.01
v/c Ratio	0.78	0.41	0.89		0.77	0.07
Uniform Delay, d1	28.1	4.7	17.8		32.0	19.7
Progression Factor	0.76	0.24	1.00		1.00	1.00
Incremental Delay, d2	10.6	0.1	6.8		11.6	0.1
Delay (s)	31.9	1.2	24.6		43.6	19.8
Level of Service	C	A	C		D	B
Approach Delay (s)		7.2	24.6		36.2	
Approach LOS		A	C		D	

Intersection Summary

HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	19.8
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Queues
2: Sutterville Rd & W Pacific Ave



Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1260	30	1381	138
v/c Ratio	0.37	0.22	0.55	0.77
Control Delay	8.3	51.2	2.1	56.3
Queue Delay	0.1	6.8	1.0	0.7
Total Delay	8.4	58.0	3.1	57.1
Queue Length 50th (ft)	34	11	9	42
Queue Length 95th (ft)	245	m23	36	#190
Internal Link Dist (ft)	151		41	163
Turn Bay Length (ft)				
Base Capacity (vph)	3370	138	2532	180
Starvation Cap Reductn	0	76	820	0
Spillback Cap Reductn	767	0	0	3
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.48	0.48	0.81	0.78

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
2: Sutterville Rd & W Pacific Ave

Split Int Baseline AM Peak
6/26/2008

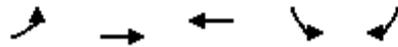


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑	↵↵	
Volume (vph)	1216	44	30	1381	93	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.91		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.96	
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	5059		1770	3539	1723	
Flt Permitted	1.00		0.95	1.00	0.97	
Satd. Flow (perm)	5059		1770	3539	1723	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1216	44	30	1381	93	45
RTOR Reduction (vph)	3	0	0	0	19	0
Lane Group Flow (vph)	1257	0	30	1381	119	0
Turn Type			Prot			
Protected Phases	2		1	16	4	
Permitted Phases						
Actuated Green, G (s)	43.9		1.8	49.7	6.2	
Effective Green, g (s)	43.9		1.8	49.7	6.2	
Actuated g/C Ratio	0.61		0.03	0.69	0.09	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	3097		44	2453	149	
v/s Ratio Prot	0.25		0.02	c0.39	c0.07	
v/s Ratio Perm						
v/c Ratio	0.41		0.68	0.56	0.80	
Uniform Delay, d1	7.2		34.7	5.5	32.1	
Progression Factor	1.00		1.49	0.23	1.00	
Incremental Delay, d2	0.1		22.5	0.2	24.9	
Delay (s)	7.3		74.0	1.4	57.0	
Level of Service	A		E	A	E	
Approach Delay (s)	7.3			3.0	57.0	
Approach LOS	A			A	E	

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	11.8
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Queues

1: Sutterville Rd & Road A



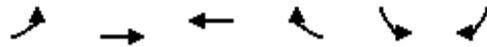
Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	333	936	1590	734	341
v/c Ratio	1.17	0.39	1.01	1.17	0.45
Control Delay	132.8	1.8	45.9	118.5	5.0
Queue Delay	245.7	0.2	6.4	281.8	0.6
Total Delay	378.5	2.0	52.3	400.3	5.6
Queue Length 50th (ft)	~167	14	312	~167	0
Queue Length 95th (ft)	#482	23	#825	#418	74
Internal Link Dist (ft)		41	848	568	
Turn Bay Length (ft)				100	
Base Capacity (vph)	285	2376	1582	629	755
Starvation Cap Reductn	92	594	0	0	0
Spillback Cap Reductn	0	0	33	221	158
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.73	0.53	1.03	1.80	0.57

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & Road A

Split Int Baseline PM Peak
6/26/2008



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑	↗		↙	↘
Volume (vph)	333	936	1119	471	455	620
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	0.95		0.97	0.91
Frt	1.00	1.00	0.96		0.94	0.85
Flt Protected	0.95	1.00	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	3382		3305	1441
Flt Permitted	0.95	1.00	1.00		0.97	1.00
Satd. Flow (perm)	1770	3539	3382		3305	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	333	936	1119	471	455	620
RTOR Reduction (vph)	0	0	40	0	98	228
Lane Group Flow (vph)	333	936	1550	0	636	113
Turn Type	Prot				pm+ov	
Protected Phases	5	12	6		8	5
Permitted Phases						8
Actuated Green, G (s)	14.8	53.5	34.7		12.2	27.0
Effective Green, g (s)	14.8	53.5	34.7		12.2	27.0
Actuated g/C Ratio	0.18	0.65	0.42		0.15	0.33
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	321	2317	1436		494	547
v/s Ratio Prot	c0.19	0.26	c0.46		c0.19	0.04
v/s Ratio Perm						0.04
v/c Ratio	1.04	0.40	1.08		1.29	0.21
Uniform Delay, d1	33.5	6.6	23.5		34.8	19.6
Progression Factor	0.75	0.17	1.00		1.00	1.00
Incremental Delay, d2	58.4	0.1	48.3		144.2	0.2
Delay (s)	83.4	1.3	71.8		178.9	19.8
Level of Service	F	A	E		F	B
Approach Delay (s)		22.8	71.8		128.4	
Approach LOS		C	E		F	

Intersection Summary

HCM Average Control Delay	71.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	81.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Queues
2: Sutterville Rd & W Pacific Ave



Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1280	29	1710	86
v/c Ratio	0.40	0.24	0.72	0.28
Control Delay	10.3	50.8	8.5	20.8
Queue Delay	0.0	10.2	53.0	0.0
Total Delay	10.3	61.0	61.5	20.8
Queue Length 50th (ft)	60	13	91	15
Queue Length 95th (ft)	278	m22	m573	70
Internal Link Dist (ft)	151		41	163
Turn Bay Length (ft)				
Base Capacity (vph)	3173	119	2376	310
Starvation Cap Reductn	0	66	838	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.40	0.55	1.11	0.28

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
2: Sutterville Rd & W Pacific Ave

Split Int Baseline PM Peak
6/26/2008



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↵	↑↑	↵↵	
Volume (vph)	1224	56	29	1710	41	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.91		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.93	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	5052		1770	3539	1691	
Flt Permitted	1.00		0.95	1.00	0.98	
Satd. Flow (perm)	5052		1770	3539	1691	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1224	56	29	1710	41	45
RTOR Reduction (vph)	3	0	0	0	38	0
Lane Group Flow (vph)	1277	0	29	1710	48	0
Turn Type			Prot			
Protected Phases	2		1	16	4	
Permitted Phases						
Actuated Green, G (s)	47.7		1.8	53.5	12.2	
Effective Green, g (s)	47.7		1.8	53.5	12.2	
Actuated g/C Ratio	0.58		0.02	0.65	0.15	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	2950		39	2317	253	
v/s Ratio Prot	0.25		0.02	c0.48	c0.03	
v/s Ratio Perm						
v/c Ratio	0.43		0.74	0.74	0.19	
Uniform Delay, d1	9.5		39.7	9.4	30.4	
Progression Factor	1.00		1.29	0.64	1.00	
Incremental Delay, d2	0.1		22.9	0.4	0.4	
Delay (s)	9.6		74.2	6.5	30.8	
Level of Service	A		E	A	C	
Approach Delay (s)	9.6			7.6	30.8	
Approach LOS	A			A	C	

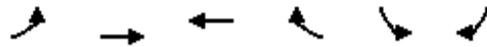
Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	81.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Queues

No Project Cumulative - AM Peak Hour

1: Sutterville Rd & Road A

6/26/2008



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	437	1498	1525	280	320	151
v/c Ratio	1.17	0.57	0.90	0.31	0.52	0.25
Control Delay	130.9	6.7	29.0	3.9	18.8	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	130.9	6.7	29.0	3.9	18.8	14.5
Queue Length 50th (ft)	~234	110	308	5	39	47
Queue Length 95th (ft)	#509	340	#647	56	72	85
Internal Link Dist (ft)		41	587		427	
Turn Bay Length (ft)					100	
Base Capacity (vph)	375	2623	1686	889	1048	605
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.17	0.57	0.90	0.31	0.31	0.25

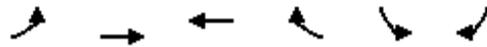
Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & Road A

No Project Cumulative - AM Peak Hour

6/26/2008



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	437	1498	1525	280	181	290
Ideal Flow (vphpl)	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	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.93	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.97	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3285	1441
Flt Permitted	0.95	1.00	1.00	1.00	0.97	1.00
Satd. Flow (perm)	1770	3539	3539	1583	3285	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	437	1498	1525	280	181	290
RTOR Reduction (vph)	0	0	0	134	118	4
Lane Group Flow (vph)	437	1498	1525	146	202	147
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	16.1	56.4	36.3	36.3	11.6	27.7
Effective Green, g (s)	16.1	56.4	36.3	36.3	11.6	27.7
Actuated g/C Ratio	0.21	0.74	0.48	0.48	0.15	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	375	2626	1690	756	501	601
v/s Ratio Prot	c0.25	0.42	c0.43		c0.06	0.05
v/s Ratio Perm				0.09		0.05
v/c Ratio	1.17	0.57	0.90	0.19	0.40	0.24
Uniform Delay, d1	29.9	4.4	18.2	11.4	29.1	16.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	99.7	0.9	8.3	0.6	0.5	0.2
Delay (s)	129.6	5.3	26.5	12.0	29.6	17.1
Level of Service	F	A	C	B	C	B
Approach Delay (s)		33.4	24.3		25.6	
Approach LOS		C	C		C	

Intersection Summary

HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	76.0	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 Unsignalized Intersection Capacity Analysis
2: Sutterville Rd & W Pacific Ave

No Project Cumulative - AM Peak Hour
6/26/2008



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↗
Volume (veh/h)	1894	44	0	1815	0	41
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1894	44	0	1815	0	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				121		
pX, platoon unblocked				0.59		
vC, conflicting volume	1894			2824		653
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1894			2703		653
tC, single (s)	4.1			6.8		6.9
tC, 2 stage (s)						
tF (s)	2.2			3.5		3.3
p0 queue free %	100			100		90
cM capacity (veh/h)	311			10		410

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	758	758	423	908	908	41
Volume Left	0	0	0	0	0	0
Volume Right	0	0	44	0	0	41
cSH	1700	1700	1700	1700	1700	410
Volume to Capacity	0.45	0.45	0.25	0.53	0.53	0.10
Queue Length 95th (ft)	0	0	0	0	0	8
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	14.8
Lane LOS						B
Approach Delay (s)	0.0			0.0		14.8
Approach LOS						B

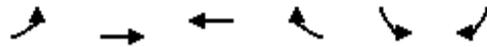
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			53.5%		ICU Level of Service	A
Analysis Period (min)			15			

Queues

No Project Cumulative PM Peak Hour

1: Sutterville Rd & Road A

6/26/2008



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	359	1341	1508	504	845	400
v/c Ratio	1.10	0.57	0.97	0.53	0.87	0.58
Control Delay	119.1	10.4	44.6	5.5	38.5	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.1	10.4	44.6	5.5	38.5	21.8
Queue Length 50th (ft)	~266	228	490	23	209	185
Queue Length 95th (ft)	#443	286	#661	96	286	289
Internal Link Dist (ft)		41	848		568	
Turn Bay Length (ft)					100	
Base Capacity (vph)	326	2352	1556	943	1019	694
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.57	0.97	0.53	0.83	0.58

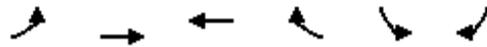
Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & Road A

No Project Cumulative PM Peak Hour

6/26/2008



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	359	1341	1508	504	490	755
Ideal Flow (vphpl)	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	0.95	0.95	1.00	0.97	0.91
Frt	1.00	1.00	1.00	0.85	0.94	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.97	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3291	1441
Flt Permitted	0.95	1.00	1.00	1.00	0.97	1.00
Satd. Flow (perm)	1770	3539	3539	1583	3291	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	359	1341	1508	504	490	755
RTOR Reduction (vph)	0	0	0	247	134	5
Lane Group Flow (vph)	359	1341	1508	257	711	395
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases				6		4
Actuated Green, G (s)	18.0	65.1	43.1	43.1	24.8	42.8
Effective Green, g (s)	18.0	65.1	43.1	43.1	24.8	42.8
Actuated g/C Ratio	0.18	0.66	0.44	0.44	0.25	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	325	2353	1558	697	834	689
v/s Ratio Prot	c0.20	0.38	c0.43		c0.22	0.11
v/s Ratio Perm				0.16		0.17
v/c Ratio	1.10	0.57	0.97	0.37	0.85	0.57
Uniform Delay, d1	40.0	8.8	26.7	18.3	34.8	20.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	81.0	1.0	16.3	1.5	8.4	1.2
Delay (s)	121.0	9.9	43.1	19.8	43.3	21.8
Level of Service	F	A	D	B	D	C
Approach Delay (s)		33.3	37.2		36.4	
Approach LOS		C	D		D	

Intersection Summary

HCM Average Control Delay	35.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	97.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
2: Sutterville Rd & W Pacific Ave

No Project Cumulative PM Peak Hour

6/26/2008



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↗
Volume (veh/h)	1664	56	0	2263	0	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1664	56	0	2263	0	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				121		
pX, platoon unblocked					0.58	
vC, conflicting volume			1664		2824	583
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1664		2694	583
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	92
cM capacity (veh/h)			383		10	456

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	666	666	389	1132	1132	36
Volume Left	0	0	0	0	0	0
Volume Right	0	0	56	0	0	36
cSH	1700	1700	1700	1700	1700	456
Volume to Capacity	0.39	0.39	0.23	0.67	0.67	0.08
Queue Length 95th (ft)	0	0	0	0	0	6
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	13.6
Lane LOS						B
Approach Delay (s)	0.0			0.0		13.6
Approach LOS						B

Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			65.9%		ICU Level of Service	C
Analysis Period (min)			15			

Queues
1: Sutterville Rd & W. Pacific Ave

Single Int Cumulative AM Peak
6/26/2008



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	437	1501	18	1525	262	93	45	92	92	197
v/c Ratio	1.13	0.73	0.18	1.07	0.35	0.34	0.16	0.35	0.35	0.37
Control Delay	119.4	21.1	44.5	70.8	10.2	31.0	11.8	31.3	31.3	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.4	21.1	44.5	70.8	10.2	31.0	11.8	31.3	31.3	4.0
Queue Length 50th (ft)	~112	225	7	~384	23	35	1	35	35	0
Queue Length 95th (ft)	#315	#852	35	#896	122	88	29	92	92	22
Internal Link Dist (ft)		823		1021			193		277	
Turn Bay Length (ft)	250		100			100		100		
Base Capacity (vph)	388	2062	101	1427	741	556	533	529	531	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.13	0.73	0.18	1.07	0.35	0.17	0.08	0.17	0.17	0.37

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & W. Pacific Ave

Single Int Cumulative AM Peak

6/26/2008

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 			 		 	 	 
Volume (vph)	437	1457	44	18	1525	262	93	4	41	181	3	197
Ideal Flow (vphpl)	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
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	3433	3524		1770	3539	1583	1770	1608		1681	1688	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	3433	3524		1770	3539	1583	1770	1608		1681	1688	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	437	1457	44	18	1525	262	93	4	41	181	3	197
RTOR Reduction (vph)	0	1	0	0	0	98	0	36	0	0	0	152
Lane Group Flow (vph)	437	1500	0	18	1525	164	93	9	0	92	92	45
Turn Type	Prot			Prot		Perm	Split			Split		pm+ov
Protected Phases	5	2		1	6		8	8		4	4	5
Permitted Phases						6						4
Actuated Green, G (s)	7.6	38.1		0.5	31.0	31.0	8.9	8.9		9.0	9.0	16.6
Effective Green, g (s)	7.6	38.1		0.5	31.0	31.0	8.9	8.9		9.0	9.0	16.6
Actuated g/C Ratio	0.10	0.53		0.01	0.43	0.43	0.12	0.12		0.12	0.12	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	360	1852		12	1513	677	217	197		209	210	362
v/s Ratio Prot	c0.13	0.43		0.01	c0.43		c0.05	0.01		c0.05	0.05	0.01
v/s Ratio Perm						0.10						0.02
v/c Ratio	1.21	0.81		1.50	1.01	0.24	0.43	0.05		0.44	0.44	0.12
Uniform Delay, d1	32.5	14.2		36.0	20.8	13.2	29.4	28.1		29.4	29.4	22.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	119.2	4.0		450.0	25.1	0.8	1.4	0.1		1.5	1.5	0.2
Delay (s)	151.6	18.2		486.0	45.8	14.1	30.8	28.2		30.9	30.9	22.3
Level of Service	F	B		F	D	B	C	C		C	C	C
Approach Delay (s)		48.3			45.6			29.9			26.5	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	44.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	72.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Queues
1: Sutterville Rd & W. Pacific Ave

Single Int Future PM Peak
6/26/2008



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	359	1363	33	1508	471	45	45	250	248	710
v/c Ratio	1.10	0.70	0.41	0.92	0.50	0.22	0.20	0.89	0.88	1.04
Control Delay	120.4	21.0	61.1	35.0	6.7	38.0	17.2	70.5	68.6	62.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	120.4	21.0	61.1	35.0	6.7	38.0	17.2	70.5	68.6	62.2
Queue Length 50th (ft)	~108	271	17	360	24	22	4	~142	~138	~189
Queue Length 95th (ft)	#286	#711	#71	#875	146	59	36	273	271	#504
Internal Link Dist (ft)		823		1021			193		426	
Turn Bay Length (ft)	250		100			100		100		
Base Capacity (vph)	325	1940	80	1633	938	434	429	280	281	680
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.70	0.41	0.92	0.50	0.10	0.10	0.89	0.88	1.04

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & W. Pacific Ave

Single Int Future PM Peak

6/26/2008

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	359	1307	56	33	1508	471	45	9	36	490	8	710
Ideal Flow (vphpl)	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
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	3433	3517		1770	3539	1583	1770	1639		1681	1688	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	3433	3517		1770	3539	1583	1770	1639		1681	1688	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	359	1307	56	33	1508	471	45	9	36	490	8	710
RTOR Reduction (vph)	0	2	0	0	0	204	0	33	0	0	0	255
Lane Group Flow (vph)	359	1361	0	33	1508	267	45	12	0	250	248	455
Turn Type	Prot			Prot		Perm	Split			Split		pm+ov
Protected Phases	5	2		1	6		8	8		4	4	5
Permitted Phases						6						4
Actuated Green, G (s)	8.2	47.8		2.3	41.9	41.9	8.6	8.6		14.4	14.4	22.6
Effective Green, g (s)	8.2	47.8		2.3	41.9	41.9	8.6	8.6		14.4	14.4	22.6
Actuated g/C Ratio	0.09	0.54		0.03	0.47	0.47	0.10	0.10		0.16	0.16	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	316	1887		46	1664	744	171	158		272	273	402
v/s Ratio Prot	c0.10	0.39		0.02	c0.43		c0.03	0.01		0.15	0.15	c0.10
v/s Ratio Perm						0.17						0.18
v/c Ratio	1.14	0.72		0.72	0.91	0.36	0.26	0.08		0.92	0.91	1.13
Uniform Delay, d1	40.4	15.6		43.1	21.8	15.0	37.3	36.6		36.8	36.7	33.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	92.7	2.4		41.5	8.7	1.3	0.8	0.2		33.5	31.2	85.7
Delay (s)	133.1	18.0		84.6	30.5	16.4	38.1	36.9		70.3	67.9	118.9
Level of Service	F	B		F	C	B	D	D		E	E	F
Approach Delay (s)		42.0			28.1			37.5			98.4	
Approach LOS		D			C			D			F	

Intersection Summary

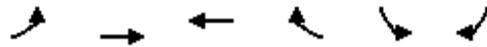
HCM Average Control Delay	49.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	89.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Queues

Split Int. Cumulative AM Peak

6/26/2008

1: Sutterville Rd & Road A



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	441	1935	1543	262	181	200
v/c Ratio	0.92	0.76	0.85	0.28	0.57	0.33
Control Delay	51.5	8.7	22.4	4.2	39.3	5.9
Queue Delay	355.1	0.3	0.0	0.0	0.0	0.0
Total Delay	406.5	9.0	22.4	4.2	39.3	5.9
Queue Length 50th (ft)	81	36	210	6	32	0
Queue Length 95th (ft)	m#262	#791	#696	64	#107	54
Internal Link Dist (ft)		41	848		568	
Turn Bay Length (ft)					100	
Base Capacity (vph)	481	2532	1816	921	320	609
Starvation Cap Reductn	236	140	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.80	0.81	0.85	0.28	0.57	0.33

Intersection Summary

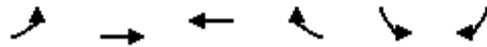
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & Road A

Split Int. Cumulative AM Peak
6/26/2008

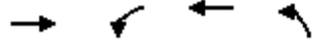


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	441	1935	1543	262	181	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3539	1583	3433	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1583	3433	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	441	1935	1543	262	181	200
RTOR Reduction (vph)	0	0	0	119	0	148
Lane Group Flow (vph)	441	1935	1543	143	181	52
Turn Type	Prot		Perm		pm+ov	
Protected Phases	5	12	6		8	5
Permitted Phases				6		8
Actuated Green, G (s)	12.7	50.6	33.9	33.9	6.2	18.9
Effective Green, g (s)	12.7	50.6	33.9	33.9	6.2	18.9
Actuated g/C Ratio	0.17	0.70	0.47	0.47	0.09	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	601	2467	1653	739	293	499
v/s Ratio Prot	0.13	c0.55	c0.44		c0.05	0.02
v/s Ratio Perm				0.09		0.01
v/c Ratio	0.73	0.78	0.93	0.19	0.62	0.10
Uniform Delay, d1	28.3	7.4	18.3	11.3	32.1	20.4
Progression Factor	0.83	0.53	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	1.6	10.1	0.1	3.8	0.1
Delay (s)	27.8	5.5	28.4	11.5	35.9	20.5
Level of Service	C	A	C	B	D	C
Approach Delay (s)		9.6	26.0		27.8	
Approach LOS		A	C		C	

Intersection Summary

HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	72.6	Sum of lost time (s)	15.8
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Queues
2: Sutterville Rd & W Pacific Ave



Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1938	21	1722	134
v/c Ratio	0.44	0.15	0.68	0.75
Control Delay	7.9	51.2	4.2	54.9
Queue Delay	0.3	3.9	0.9	136.3
Total Delay	8.1	55.0	5.1	191.3
Queue Length 50th (ft)	45	8	8	41
Queue Length 95th (ft)	308	m16	#664	#186
Internal Link Dist (ft)	275		41	163
Turn Bay Length (ft)				
Base Capacity (vph)	4446	138	2532	179
Starvation Cap Reductn	0	77	477	0
Spillback Cap Reductn	1487	0	0	74
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.65	0.34	0.84	1.28

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
2: Sutterville Rd & W Pacific Ave

Split Int. Cumulative AM Peak
6/26/2008

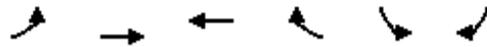


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↑		↙	↑↑	↘	
Volume (vph)	1894	44	21	1722	93	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.86		1.00	0.95	1.00	
Frt	1.00		1.00	1.00	0.96	
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	6386		1770	3539	1726	
Flt Permitted	1.00		0.95	1.00	0.97	
Satd. Flow (perm)	6386		1770	3539	1726	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1894	44	21	1722	93	41
RTOR Reduction (vph)	2	0	0	0	17	0
Lane Group Flow (vph)	1936	0	21	1722	117	0
Turn Type			Prot			
Protected Phases	2		1	16	4	
Permitted Phases						
Actuated Green, G (s)	45.9		0.7	50.6	6.2	
Effective Green, g (s)	45.9		0.7	50.6	6.2	
Actuated g/C Ratio	0.63		0.01	0.70	0.09	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	4037		17	2467	147	
v/s Ratio Prot	0.30		0.01	c0.49	c0.07	
v/s Ratio Perm						
v/c Ratio	0.48		1.24	0.70	0.79	
Uniform Delay, d1	7.0		35.9	6.5	32.6	
Progression Factor	1.00		1.50	0.24	1.00	
Incremental Delay, d2	0.1		241.8	0.5	24.7	
Delay (s)	7.1		295.8	2.0	57.3	
Level of Service	A		F	A	E	
Approach Delay (s)	7.1			5.6	57.3	
Approach LOS	A			A	E	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	72.6	Sum of lost time (s)	11.8
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Queues

1: Sutterville Rd & Road A



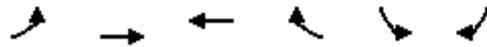
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	368	1700	1541	471	490	718
v/c Ratio	0.98	0.72	0.88	0.48	1.02	0.87
Control Delay	67.4	8.9	24.4	5.0	78.2	21.8
Queue Delay	349.7	0.2	1.4	0.0	0.0	115.2
Total Delay	417.1	9.1	25.9	5.0	78.2	137.0
Queue Length 50th (ft)	69	26	219	12	92	66
Queue Length 95th (ft)	#224	#299	#707	110	#293	#409
Internal Link Dist (ft)		41	848		456	
Turn Bay Length (ft)					100	
Base Capacity (vph)	374	2367	1761	988	481	824
Starvation Cap Reductn	171	153	0	0	0	0
Spillback Cap Reductn	0	0	90	0	0	252
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.81	0.77	0.92	0.48	1.02	1.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & Road A

Split Int Cumulative PM Peak
6/26/2008



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	368	1700	1541	471	490	718
Ideal Flow (vphpl)	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	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3539	1583	3433	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1583	3433	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	368	1700	1541	471	490	718
RTOR Reduction (vph)	0	0	0	215	0	354
Lane Group Flow (vph)	368	1700	1541	256	490	364
Turn Type	Prot			Perm		pm+ov
Protected Phases	5	12	6		8	5
Permitted Phases				6		8
Actuated Green, G (s)	9.7	46.6	32.9	32.9	9.2	18.9
Effective Green, g (s)	9.7	46.6	32.9	32.9	9.2	18.9
Actuated g/C Ratio	0.14	0.65	0.46	0.46	0.13	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	465	2303	1626	727	441	506
v/s Ratio Prot	0.11	c0.48	c0.44		c0.14	0.10
v/s Ratio Perm				0.16		0.13
v/c Ratio	0.79	0.74	0.95	0.35	1.11	0.72
Uniform Delay, d1	30.0	8.4	18.5	12.5	31.2	23.9
Progression Factor	0.72	0.59	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	1.1	12.0	0.3	76.6	4.9
Delay (s)	29.8	6.1	30.5	12.8	107.8	28.8
Level of Service	C	A	C	B	F	C
Approach Delay (s)		10.3	26.4		60.9	
Approach LOS		B	C		E	

Intersection Summary

HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	15.8
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Queues
2: Sutterville Rd & W Pacific Ave

Split Int Cumulative PM Peak
6/26/2008



Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1950	41	2218	90
v/c Ratio	0.49	0.30	0.94	0.33
Control Delay	10.6	47.2	14.0	21.4
Queue Delay	0.0	13.8	43.2	0.0
Total Delay	10.6	61.0	57.1	21.4
Queue Length 50th (ft)	62	15	61	15
Queue Length 95th (ft)	330	m27	#1022	71
Internal Link Dist (ft)	270		41	163
Turn Bay Length (ft)				
Base Capacity (vph)	3953	138	2367	275
Starvation Cap Reductn	0	76	344	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.49	0.66	1.10	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
2: Sutterville Rd & W Pacific Ave

Split Int Cumulative PM Peak
6/26/2008



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↑		↵	↑↑	↵	
Volume (vph)	1894	56	41	2218	45	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.86		1.00	0.95	1.00	
Frt	1.00		1.00	1.00	0.93	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	6380		1770	3539	1695	
Flt Permitted	1.00		0.95	1.00	0.98	
Satd. Flow (perm)	6380		1770	3539	1695	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1894	56	41	2218	45	45
RTOR Reduction (vph)	3	0	0	0	38	0
Lane Group Flow (vph)	1947	0	41	2218	52	0
Turn Type			Prot			
Protected Phases	2		1	16	4	
Permitted Phases						
Actuated Green, G (s)	40.8		1.8	46.6	9.2	
Effective Green, g (s)	40.8		1.8	46.6	9.2	
Actuated g/C Ratio	0.57		0.03	0.65	0.13	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	3636		44	2303	218	
v/s Ratio Prot	0.31		0.02	c0.63	c0.03	
v/s Ratio Perm						
v/c Ratio	0.54		0.93	0.96	0.24	
Uniform Delay, d1	9.5		34.8	11.7	28.0	
Progression Factor	1.00		1.36	0.57	1.00	
Incremental Delay, d2	0.2		66.8	6.0	0.6	
Delay (s)	9.7		114.1	12.7	28.6	
Level of Service	A		F	B	C	
Approach Delay (s)	9.7			14.5	28.6	
Approach LOS	A			B	C	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	15.8
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Queues
1: Sutterville Rd & W. Pacific Ave

Single Int Baseline AM Peak (Mitigated)

6/26/2008



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	241	1019	27	1212	194	93	45	100	100	169
v/c Ratio	0.62	0.52	0.26	0.85	0.26	0.34	0.16	0.37	0.37	0.32
Control Delay	42.5	19.0	45.3	31.2	7.6	31.1	11.7	31.6	31.6	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	19.0	45.3	31.2	7.6	31.1	11.7	31.6	31.6	3.9
Queue Length 50th (ft)	49	125	11	236	8	35	1	40	40	0
Queue Length 95th (ft)	#161	#498	46	#672	72	88	29	100	100	20
Internal Link Dist (ft)		823		1021			193		277	
Turn Bay Length (ft)	250		100			100		100		
Base Capacity (vph)	386	1970	103	1423	733	555	532	529	531	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.52	0.26	0.85	0.26	0.17	0.08	0.19	0.19	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & W. Pacific Ave

Single Int Baseline AM Peak (Mitigated)

6/26/2008

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 	 	 	 		 	 	
Volume (vph)	241	975	44	27	1212	194	93	4	41	197	3	169
Ideal Flow (vphpl)	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
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	3433	3516		1770	3539	1583	1770	1608		1681	1688	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	3433	3516		1770	3539	1583	1770	1608		1681	1688	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	241	975	44	27	1212	194	93	4	41	197	3	169
RTOR Reduction (vph)	0	2	0	0	0	93	0	36	0	0	0	130
Lane Group Flow (vph)	241	1017	0	27	1212	101	93	9	0	100	100	39
Turn Type	Prot			Prot		Perm	Split			Split		pm+ov
Protected Phases	5	2		1	6		8	8		4	4	5
Permitted Phases						6						4
Actuated Green, G (s)	7.6	36.5		1.3	30.2	30.2	8.9	8.9		9.2	9.2	16.8
Effective Green, g (s)	7.6	36.5		1.3	30.2	30.2	8.9	8.9		9.2	9.2	16.8
Actuated g/C Ratio	0.11	0.51		0.02	0.42	0.42	0.12	0.12		0.13	0.13	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	363	1785		32	1486	665	219	199		215	216	370
v/s Ratio Prot	c0.07	0.29		0.02	c0.34		c0.05	0.01		c0.06	0.06	0.01
v/s Ratio Perm						0.06						0.01
v/c Ratio	0.66	0.57		0.84	0.82	0.15	0.42	0.05		0.47	0.46	0.11
Uniform Delay, d1	30.9	12.3		35.2	18.4	12.9	29.1	27.8		29.1	29.1	21.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.5	1.3		95.7	5.1	0.5	1.3	0.1		1.6	1.6	0.1
Delay (s)	35.4	13.6		130.9	23.4	13.4	30.5	27.9		30.7	30.6	21.8
Level of Service	D	B		F	C	B	C	C		C	C	C
Approach Delay (s)		17.8			24.1			29.6			26.6	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	71.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Queues
1: Sutterville Rd & W. Pacific Ave

Single Int Baseline PM Peak (Mitigated)

6/26/2008



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	324	956	21	1098	471	41	45	232	231	612
v/c Ratio	1.00	0.48	0.27	0.67	0.48	0.20	0.21	0.83	0.82	0.88
Control Delay	91.4	15.8	54.9	23.6	4.0	37.8	17.3	61.3	60.4	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.4	15.8	54.9	23.6	4.0	37.8	17.3	61.3	60.4	25.6
Queue Length 50th (ft)	87	120	11	217	0	20	4	126	126	92
Queue Length 95th (ft)	#255	392	43	#537	73	55	36	253	252	#319
Internal Link Dist (ft)		823		1021			193		426	
Turn Bay Length (ft)	250		100			100		100		
Base Capacity (vph)	325	2006	79	1635	985	434	429	280	281	694
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.48	0.27	0.67	0.48	0.09	0.10	0.83	0.82	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & W. Pacific Ave

Single Int Baseline PM Peak (Mitigated)

6/26/2008

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 					 	 	
Volume (vph)	324	900	56	21	1098	471	41	9	36	455	8	612
Ideal Flow (vphpl)	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
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	3433	3508		1770	3539	1583	1770	1639		1681	1688	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	3433	3508		1770	3539	1583	1770	1639		1681	1688	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	324	900	56	21	1098	471	41	9	36	455	8	612
RTOR Reduction (vph)	0	4	0	0	0	247	0	33	0	0	0	270
Lane Group Flow (vph)	324	952	0	21	1098	224	41	12	0	232	231	342
Turn Type	Prot			Prot		Perm	Split			Split		pm+ov
Protected Phases	5	2		1	6		8	8		4	4	5
Permitted Phases						6						4
Actuated Green, G (s)	8.2	49.4		1.4	42.6	42.6	8.5	8.5		14.4	14.4	22.6
Effective Green, g (s)	8.2	49.4		1.4	42.6	42.6	8.5	8.5		14.4	14.4	22.6
Actuated g/C Ratio	0.09	0.55		0.02	0.47	0.47	0.09	0.09		0.16	0.16	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	314	1932		28	1681	752	168	155		270	271	399
v/s Ratio Prot	c0.09	0.27		0.01	c0.31		c0.02	0.01		c0.14	0.14	0.08
v/s Ratio Perm						0.14						0.14
v/c Ratio	1.03	0.49		0.75	0.65	0.30	0.24	0.08		0.86	0.85	0.86
Uniform Delay, d1	40.8	12.4		44.0	17.9	14.4	37.6	37.0		36.7	36.6	32.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	59.3	0.9		71.8	2.0	1.0	0.8	0.2		22.8	21.9	16.4
Delay (s)	100.0	13.3		115.8	19.9	15.4	38.4	37.3		59.4	58.5	48.4
Level of Service	F	B		F	B	B	D	D		E	E	D
Approach Delay (s)		35.3			19.8			37.8			53.0	
Approach LOS		D			B			D			D	

Intersection Summary

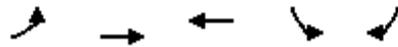
HCM Average Control Delay	34.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	89.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Queues

Split Int. Baseline AM Peak Hour (Mitigated)

1: Sutterville Rd & Road A

6/26/2008



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	245	1016	1433	197	172
v/c Ratio	0.66	0.40	0.75	0.62	0.32
Control Delay	34.0	2.5	17.6	41.1	6.6
Queue Delay	157.5	0.2	0.0	0.0	0.0
Total Delay	191.4	2.7	17.6	41.1	6.6
Queue Length 50th (ft)	44	14	166	36	0
Queue Length 95th (ft)	m#143	81	#604	#120	52
Internal Link Dist (ft)		41	848	568	
Turn Bay Length (ft)				100	
Base Capacity (vph)	374	2532	1899	320	545
Starvation Cap Reductn	190	628	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.33	0.53	0.75	0.62	0.32

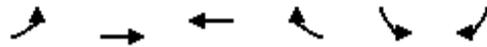
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis Split Int. Baseline AM Peak Hour (Mitigated)
 1: Sutterville Rd & Road A 6/26/2008



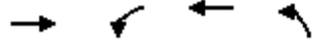
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔↔	↑↑	↑↔		↔↔	↔
Volume (vph)	245	1016	1239	194	197	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95	0.95		0.97	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3433	3539	3467		3433	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3433	3539	3467		3433	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	245	1016	1239	194	197	172
RTOR Reduction (vph)	0	0	11	0	0	134
Lane Group Flow (vph)	245	1016	1422	0	197	38
Turn Type	Prot		pm+ov			
Protected Phases	5	12	6		8	5
Permitted Phases						8
Actuated Green, G (s)	9.8	49.7	35.9		6.2	16.0
Effective Green, g (s)	9.8	49.7	35.9		6.2	16.0
Actuated g/C Ratio	0.14	0.69	0.50		0.09	0.22
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	469	2453	1736		297	442
v/s Ratio Prot	c0.07	0.29	c0.41		c0.06	0.01
v/s Ratio Perm						0.01
v/c Ratio	0.52	0.41	0.82		0.66	0.09
Uniform Delay, d1	28.8	4.7	15.1		31.7	22.1
Progression Factor	0.77	0.34	1.00		1.00	1.00
Incremental Delay, d2	1.0	0.1	3.1		5.5	0.1
Delay (s)	23.1	1.7	18.3		37.2	22.1
Level of Service	C	A	B		D	C
Approach Delay (s)		5.9	18.3		30.2	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay		14.6	HCM Level of Service B
HCM Volume to Capacity ratio		0.73	
Actuated Cycle Length (s)		71.7	Sum of lost time (s) 19.8
Intersection Capacity Utilization		63.0%	ICU Level of Service B
Analysis Period (min)		15	
c Critical Lane Group			

Queues
2: Sutterville Rd & W Pacific Ave

Split Int. Baseline AM Peak Hour (Mitigated)

6/26/2008



Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1260	30	1381	138
v/c Ratio	0.30	0.22	0.55	0.77
Control Delay	7.5	51.1	1.6	56.3
Queue Delay	0.1	6.8	0.6	0.7
Total Delay	7.6	57.9	2.1	57.1
Queue Length 50th (ft)	25	11	5	42
Queue Length 95th (ft)	179	m26	30	#190
Internal Link Dist (ft)	275		41	163
Turn Bay Length (ft)				
Base Capacity (vph)	4246	138	2532	180
Starvation Cap Reductn	0	76	664	0
Spillback Cap Reductn	1247	0	0	3
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.42	0.48	0.74	0.78

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis Split Int. Baseline AM Peak Hour (Mitigated)
 2: Sutterville Rd & W Pacific Ave 6/26/2008



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↑		↙	↑↑	↘	
Volume (vph)	1216	44	30	1381	93	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.86		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.96	
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	6374		1770	3539	1723	
Flt Permitted	1.00		0.95	1.00	0.97	
Satd. Flow (perm)	6374		1770	3539	1723	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1216	44	30	1381	93	45
RTOR Reduction (vph)	3	0	0	0	19	0
Lane Group Flow (vph)	1257	0	30	1381	119	0
Turn Type			Prot			
Protected Phases	2		1	16	4	
Permitted Phases						
Actuated Green, G (s)	43.9		1.8	49.7	6.2	
Effective Green, g (s)	43.9		1.8	49.7	6.2	
Actuated g/C Ratio	0.61		0.03	0.69	0.09	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	3903		44	2453	149	
v/s Ratio Prot	0.20		0.02	c0.39	c0.07	
v/s Ratio Perm						
v/c Ratio	0.32		0.68	0.56	0.80	
Uniform Delay, d1	6.7		34.7	5.5	32.1	
Progression Factor	1.00		1.47	0.14	1.00	
Incremental Delay, d2	0.0		25.6	0.2	24.9	
Delay (s)	6.8		76.7	1.0	57.0	
Level of Service	A		E	A	E	
Approach Delay (s)	6.8			2.6	57.0	
Approach LOS	A			A	E	

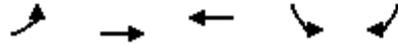
Intersection Summary			
HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	11.8
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Queues

Split Intersections Baseline PM Peak

1: Sutterville Rd & Road A

6/26/2008



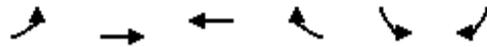
Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	333	936	1590	455	620
v/c Ratio	0.89	0.40	0.92	0.95	0.75
Control Delay	51.4	2.5	27.4	61.8	12.8
Queue Delay	264.0	0.2	1.0	0.0	9.5
Total Delay	315.3	2.7	28.4	61.8	22.2
Queue Length 50th (ft)	62	13	225	84	34
Queue Length 95th (ft)	#211	53	#732	#269	#273
Internal Link Dist (ft)		41	848	439	
Turn Bay Length (ft)				100	
Base Capacity (vph)	374	2367	1724	481	829
Starvation Cap Reductn	165	610	0	0	0
Spillback Cap Reductn	0	0	34	0	180
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.59	0.53	0.94	0.95	0.96

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & Road A

Split Intersections Baseline PM Peak
6/26/2008

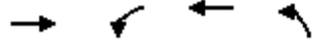


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	333	936	1119	471	455	620
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	0.97	0.95	0.95		0.97	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3433	3539	3382		3433	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	3433	3539	3382		3433	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	333	936	1119	471	455	620
RTOR Reduction (vph)	0	0	43	0	0	359
Lane Group Flow (vph)	333	936	1547	0	455	261
Turn Type	Prot				pm+ov	
Protected Phases	5	12	6		8	5
Permitted Phases						8
Actuated Green, G (s)	9.7	46.6	32.9		9.2	18.9
Effective Green, g (s)	9.7	46.6	32.9		9.2	18.9
Actuated g/C Ratio	0.14	0.65	0.46		0.13	0.26
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	465	2303	1554		441	506
v/s Ratio Prot	c0.10	0.26	c0.46		c0.13	0.07
v/s Ratio Perm						0.09
v/c Ratio	0.72	0.41	1.00		1.03	0.52
Uniform Delay, d1	29.6	5.9	19.3		31.2	22.4
Progression Factor	0.74	0.28	1.00		1.00	1.00
Incremental Delay, d2	5.0	0.1	21.6		51.3	0.9
Delay (s)	27.0	1.8	40.8		82.5	23.3
Level of Service	C	A	D		F	C
Approach Delay (s)		8.4	40.8		48.4	
Approach LOS		A	D		D	

Intersection Summary

HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	19.8
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Queues
2: Sutterville Rd & W Pacific Ave



Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1280	29	1710	86
v/c Ratio	0.32	0.21	0.72	0.31
Control Delay	9.0	45.6	7.3	20.4
Queue Delay	0.0	6.4	15.7	0.0
Total Delay	9.0	51.9	22.9	20.4
Queue Length 50th (ft)	35	11	38	13
Queue Length 95th (ft)	194	m20	m#639	67
Internal Link Dist (ft)	270		41	163
Turn Bay Length (ft)				
Base Capacity (vph)	3942	138	2367	276
Starvation Cap Reductn	0	76	684	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.32	0.47	1.02	0.31

Intersection Summary

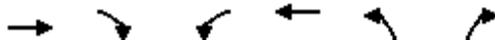
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
2: Sutterville Rd & W Pacific Ave

Split Intersections Baseline PM Peak
6/26/2008



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑↑		↵	↑↑	↵	
Volume (vph)	1224	56	29	1710	41	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.86		1.00	0.95	1.00	
Frt	0.99		1.00	1.00	0.93	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	6366		1770	3539	1691	
Flt Permitted	1.00		0.95	1.00	0.98	
Satd. Flow (perm)	6366		1770	3539	1691	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1224	56	29	1710	41	45
RTOR Reduction (vph)	5	0	0	0	39	0
Lane Group Flow (vph)	1275	0	29	1710	47	0
Turn Type			Prot			
Protected Phases	2		1	16	4	
Permitted Phases						
Actuated Green, G (s)	40.8		1.8	46.6	9.2	
Effective Green, g (s)	40.8		1.8	46.6	9.2	
Actuated g/C Ratio	0.57		0.03	0.65	0.13	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	3628		44	2303	217	
v/s Ratio Prot	0.20		0.02	c0.48	c0.03	
v/s Ratio Perm						
v/c Ratio	0.35		0.66	0.74	0.22	
Uniform Delay, d1	8.3		34.6	8.4	28.0	
Progression Factor	1.00		1.33	0.48	1.00	
Incremental Delay, d2	0.1		15.0	0.6	0.5	
Delay (s)	8.3		60.9	4.6	28.5	
Level of Service	A		E	A	C	
Approach Delay (s)	8.3			5.6	28.5	
Approach LOS	A			A	C	

Intersection Summary

HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	15.8
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Queues
1: Sutterville Rd & W. Pacific Ave

Single Int Cumulative AM Peak (Mit)

6/26/2008



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	437	1501	18	1525	262	93	45	92	92	197
v/c Ratio	0.94	0.68	0.21	0.99	0.33	0.37	0.17	0.38	0.38	0.36
Control Delay	66.8	19.0	51.3	47.7	8.5	37.2	13.4	37.6	37.5	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.8	19.0	51.3	47.7	8.5	37.2	13.4	37.6	37.5	3.9
Queue Length 50th (ft)	109	237	8	~420	20	42	2	44	44	0
Queue Length 95th (ft)	#314	#834	37	#921	109	99	31	103	103	25
Internal Link Dist (ft)		823		1021			193		277	
Turn Bay Length (ft)	250		100			100		100		
Base Capacity (vph)	467	2214	87	1542	797	494	478	350	351	554
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.68	0.21	0.99	0.33	0.19	0.09	0.26	0.26	0.36

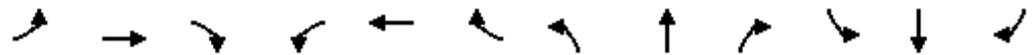
Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & W. Pacific Ave

Single Int Cumulative AM Peak (Mit)

6/26/2008



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	437	1457	44	18	1525	262	93	4	41	181	3	197
Ideal Flow (vphpl)	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
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	3433	3524		1770	3539	1583	1770	1608		1681	1688	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	3433	3524		1770	3539	1583	1770	1608		1681	1688	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	437	1457	44	18	1525	262	93	4	41	181	3	197
RTOR Reduction (vph)	0	1	0	0	0	104	0	36	0	0	0	149
Lane Group Flow (vph)	437	1500	0	18	1525	158	93	9	0	92	92	48
Turn Type	Prot			Prot		Perm	Split			Split		pm+ov
Protected Phases	5	2		1	6		8	8		4	4	5
Permitted Phases						6						4
Actuated Green, G (s)	10.6	47.8		0.6	37.8	37.8	9.4	9.4		9.5	9.5	20.1
Effective Green, g (s)	10.6	47.8		0.6	37.8	37.8	9.4	9.4		9.5	9.5	20.1
Actuated g/C Ratio	0.13	0.57		0.01	0.45	0.45	0.11	0.11		0.11	0.11	0.24
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	437	2022		13	1606	718	200	181		192	193	382
v/s Ratio Prot	c0.13	0.43		0.01	c0.43		c0.05	0.01		c0.05	0.05	0.02
v/s Ratio Perm						0.10						0.01
v/c Ratio	1.00	0.74		1.38	0.95	0.22	0.47	0.05		0.48	0.48	0.12
Uniform Delay, d1	36.4	13.2		41.4	21.8	13.8	34.6	33.0		34.6	34.6	24.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	43.1	2.5		392.7	13.3	0.7	1.7	0.1		1.9	1.9	0.1
Delay (s)	79.4	15.7		434.1	35.1	14.5	36.3	33.1		36.5	36.4	24.9
Level of Service	E	B		F	D	B	D	C		D	D	C
Approach Delay (s)		30.0			36.1			35.2			30.5	
Approach LOS		C			D			D			C	

Intersection Summary

HCM Average Control Delay	32.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	83.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Queues

1: Sutterville Rd & W. Pacific Ave

6/26/2008



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	359	1363	33	1508	471	45	45	250	248	710
v/c Ratio	0.96	0.73	0.40	1.00	0.54	0.22	0.20	0.82	0.81	0.95
Control Delay	77.4	22.4	59.2	50.8	8.4	36.8	16.7	57.3	56.1	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.4	22.4	59.2	50.8	8.4	36.8	16.7	57.3	56.1	34.8
Queue Length 50th (ft)	93	278	17	378	32	22	4	131	130	122
Queue Length 95th (ft)	#265	#718	#70	#892	172	57	35	265	264	#422
Internal Link Dist (ft)		823		1021			193		426	
Turn Bay Length (ft)	250		100			100		100		
Base Capacity (vph)	375	1864	82	1504	880	467	459	304	306	748
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.73	0.40	1.00	0.54	0.10	0.10	0.82	0.81	0.95

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: Sutterville Rd & W. Pacific Ave

Single Int Future PM Peak (Mit)

6/26/2008

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	359	1307	56	33	1508	471	45	9	36	490	8	710
Ideal Flow (vphpl)	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
Lane Util. Factor	0.97	0.95		1.00	0.95	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	3433	3517		1770	3539	1583	1770	1639		1681	1688	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	3433	3517		1770	3539	1583	1770	1639		1681	1688	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	359	1307	56	33	1508	471	45	9	36	490	8	710
RTOR Reduction (vph)	0	2	0	0	0	204	0	32	0	0	0	277
Lane Group Flow (vph)	359	1361	0	33	1508	267	45	13	0	250	248	433
Turn Type	Prot			Prot		Perm	Split			Split		pm+ov
Protected Phases	5	2		1	6		8	8		4	4	5
Permitted Phases						6						4
Actuated Green, G (s)	9.2	44.7		2.3	37.8	37.8	8.6	8.6		15.3	15.3	24.5
Effective Green, g (s)	9.2	44.7		2.3	37.8	37.8	8.6	8.6		15.3	15.3	24.5
Actuated g/C Ratio	0.11	0.51		0.03	0.43	0.43	0.10	0.10		0.18	0.18	0.28
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	363	1809		47	1539	689	175	162		296	297	446
v/s Ratio Prot	c0.10	0.39		0.02	c0.43		c0.03	0.01		0.15	0.15	c0.10
v/s Ratio Perm						0.17						0.17
v/c Ratio	0.99	0.75		0.70	0.98	0.39	0.26	0.08		0.84	0.84	0.97
Uniform Delay, d1	38.8	16.7		42.0	24.2	16.7	36.2	35.5		34.6	34.6	30.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	43.8	2.9		38.0	18.6	1.6	0.8	0.2		19.3	18.0	34.9
Delay (s)	82.6	19.7		79.9	42.8	18.3	37.0	35.8		53.9	52.6	65.7
Level of Service	F	B		E	D	B	D	D		D	D	E
Approach Delay (s)		32.8			37.7			36.4			60.6	
Approach LOS		C			D			D			E	

Intersection Summary

HCM Average Control Delay	41.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	86.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			