

The Towers on Capitol Mall Environmental Impact Report Volume II Technical Appendix

Prepared for:

The City of Sacramento

Prepared by:

EIP Associates

May 2005

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Appendix A

INITIAL STUDY

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ENVIRONMENTAL CHECKLIST

I. BACKGROUND

1. Project Title: The Towers on Capitol Mall (P04-221)

2. Lead Agency Name and Address: City of Sacramento Planning and Building Department

1231 I Street, Room 300 Sacramento, CA 95814

3. Contact Person and Phone Number: Dana Allen 808-2762

4. Project Location: City of Sacramento Central Business District – bounded by 3rd and 4th Streets

and L Street and Capitol Mall

5. Project Sponsor's Name and Address:

Saca Development

77 Cadillac Drive, Suite 150 Sacramento, CA 95825

6. General Plan Designation: Regional Commercial and Office

7. Zoning: General Commercial District (C-3-SPD)

8. Description of Project: See Attached

9. Surrounding Land Uses and Setting: See Attached

10. Other Public Agencies Whose Approval is Required:

- Caltrans Division of Aeronautics (DOA) Will review flight path and helistop location and issue a heliport permit.
- Federal Aviation Administration (FAA) Will review flight paths and prepare an Airspace Determination.
- Sacramento Area Council of Governments (SACOG) –Airport Land Use Commission will review helistop to ensure consistency with regional airport plans.
- Sacramento Metropolitan Air Quality Management District (SMAQMD) Will issue a
 permit to operate required for any commercial and office uses.
- State Water Resources Control Board Will issue a Construction Storm Water Discharge permit.

II. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

Aesthetics		Agriculture Resources		Air Quality
Biological Resources		Cultural Resources		Geology/Soils
Hazards & Hazardous Materials		Hydrology/Water Quality		Land Use/Planning
Mineral Resources	•	Noise		Population/Housing
Public Services		Recreation		Transportation/Traffic
Utilities/Service Systems		Mandatory Findings of Signific	cance	Э

III. **DETERMINATION** (To be completed by the Lead Agency) On the basis of this initial evaluation: ☐ I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. ☐ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared. I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR OR NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required. Date CITY OF SACRAMENTO

Associate Planner City of Sacramento

IV. ENVIRONMENTAL CHECKLIST

Introduction

The following Checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. Included in each discussion are project-specific mitigation measures recommended as appropriate as part of the proposed project.

For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Potentially Significant With Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

Issues			Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
1.		STHETICS. uld the project:				
	a.	Have a substantial adverse effect on a scenic vista?	•			
	b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?				•
	c.	Substantially degrade the existing visual character or quality of the site and its surroundings?	•			
	d.	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	•			

- a. Capitol Mall, adjacent to the project site, is defined in the Sacramento Urban Design Plan as a "Protected View Corridor." The Plan's goal regarding protected view corridors is to preserve views of landmarks. Because the proposed project would be constructed along Capitol Mall, there is potential for the proposed project to negatively affect the view of the Capitol Building. This impact is considered **potentially significant** and this issue will be addressed in the EIR.
- b. There are no designated scenic resources or historic buildings within a State scenic highway in the project area. Therefore, there would be **no impact**. This issue will not be addressed in the EIR.
- c. The City of Sacramento has adopted guidelines for massing of buildings along Capitol Mall to ensure that the views along that corridor are not impeded. Because the proposed project would be the tallest structure in Sacramento (192 feet taller than the existing tallest building at 423 feet), the project would change the visual character of the area. The key concerns with respect to visual quality include: building height; the compatibility of the building's mass to surrounding development; the visual interface with development in the area, specifically the Capitol Building; and the creation of substantial shadows that could affect landscaped and/or residential areas, particularly in winter. For these reasons potential degradation of the existing visual character is considered **potentially significant** and this issue will be addressed in the EIR.
- d. Glare is caused by light reflections from pavement, vehicles and building materials, such as reflective glass and polished surfaces. During daylight hours, the amount of glare depends on the intensity and direction of sunlight. Glare can create hazards to motorists and nuisances for pedestrians and other viewers. At night, artificial lighting can cause glare or

disturb residents. The proposed project would include light fixtures around the buildings which would be visible from surrounding areas. Because the exact location of the lighting and the specific materials used for each building facade is not known at this time, this would be a **potentially significant impact**. Effects of light and glare will be addressed in the EIR.

Issues			Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
2.	In de agrie envirus Mod Cali opticimpo	etermining whether impacts to cultural resources are significant ironmental effects, lead agencies or refer to the California Agricultural d Evaluation and Site Assessment del (1997) prepared by the fornia Dept. of Conservation as an onal model to use in assessing acts on agriculture and farmland.				
	a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program in the California Resources Agency, to non-agricultural use?				•
	b.	Conflict with existing zoning for agricultural use, or a Williamson Act contract?				•
	c.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				•

a-c. The project site is located within an urban built-up area in the City's downtown. There are no agricultural resources on the site that would be affected. There would be **no impact** on agricultural resources as a result of the proposed project.

Issues			Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
3.	Whe crite air c cont mak	QUALITY. ere available, the significance eria established by the applicable quality management or air pollution trol district may be relied upon to se the following determinations: uld the project:				
	a.	Conflict with or obstruct implementation of the applicable air quality plan?	•			
	b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	=			
	C.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	•			
	d.	Expose sensitive receptors to substantial pollutant concentrations?	•			
	e.	Create objectionable odors affecting a substantial number of people?			•	

- a-d. The proposed project would include the construction of a 52-story, 615-foot tall building. Short-term construction emissions would be produced that could expose people to substantial pollutant concentrations or violate air quality standards. Similarly, operational emissions, particularly from automobile trips associated with the project, could result in, or contribute to, air quality violations. This would be a *potentially significant impact* and will be addressed in the EIR.
- e. The proposed project includes a residential component, a hotel, and various other retail uses. Restaurant uses could produce some odors, but restaurant uses already existing in the project vicinity, and restaurants are not generally considered incompatible due to odors. Residential, hotel, and retail uses typically do not produce odors that people would consider objectionable. Therefore, there would be *less-than-significant impact* associated with odors.

Issues			Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4.		LOGICAL RESOURCES. Ild the project:				
	a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		•		
	b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				
	C.	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				•
	d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?		•		
	e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			•	

Issues		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?				•

Information in this biological resource section was obtained from an arborist assessment conducted on October 27, 2004 and the December 2004 version of the California Natural Diversity Database (CNDDB, Attached).

The project site is located in Downtown Sacramento and because the site is currently developed, there are limited biological resources. The vegetation on the site consists of turf areas and ornamental shrubs, such as privet (*Ligistrum* sp.) and heavenly bamboo (*Nandina domestica*), and 58 ornamental trees. Trees on the site include one Arizona ash (*Fraxinus velutina*), 12 canary Island pine (*Pinus canariensis*), 2 cherry (*Prunus* sp.), 1 Chinese elm (*Ulmus parvifolia*), 10 European birch (*Betula pendula*), 20 honey locust (*Gleditsia triacanthos*), 10 mulberry (*Morus* sp.), and 2 coast redwood (*Sequoia sempervirens*). The majority of the trees on the site are less than ten inches in diameter. The largest tree on the site is a 27-inch Canary Island pine at the southwest corner of the building.

Trees on the interior of the project site, outside of the City's right-of-way, would not be under City jurisdiction and, therefore, would not be subject to the City's Tree Ordinance, as defined by the City of Sacramento Code of Ordinance, Chapter 12.56, Trees Generally, and Chapter 12.64, Heritage Trees (discussed below). However, the proposed project could require the removal of, or result in damage to, street trees, which would require compliance with the ordinance.

Urban wildlife is largely limited to birds like the common crow (Corvus brachyrhynchos) and introduced species such as rock dove (Columba livia), house sparrow (Passer domesticus), and European starling (Sturnus vulgaris). The CNDDB query revealed recorded occurrences of the following within the Sacramento East and Sacramento West 7.5-minute topographic quadrangles (which includes the project site):

- two special-status plants: Sanford's arrowhead (Sagittaria sanfordii), rose mallow (Hibiscus Iasiocarpus);
- four special-status invertebrates: California linderiella (*Linderiella occidentalis*), valley
 elderberry longhorn beetle (*Desmocerus californicus dimorphus*), vernal pool fairy
 shrimp (*Branchinecta lynchi*), and vernal pool tadpole shrimp (*Lepidurus packardi*);
- two special status fish: Sacramento perch (*Archoplites interruptus*), and Sacramento splittail (*Pogonichthys macrolepidotus*);
- six special-status birds: bank swallow (Riparia riparia), burrowing owl (Athene cunicularia), Cooper's hawk (Accipiter cooperii), purple martin (Progne subis), Swainson's hawk (Buteo swainsoni) and tricolored blackbird (Agelaius tricolor);
- one mammal: American badger (Taxidea taxus); and
- two sensitive habitats: elderberry savannah, Great Valley cottonwood riparian forest.

All of the above species except burrowing owl, Cooper's hawk, purple martin and Swainson's hawk have specific habitat requirements (either wetlands or elderberry plants) that are not present on the project site. None of the above species or nests were observed during a site visit conducted in February 2005. Because the site is developed, it provides no foraging habitat for any of the birds, and no nesting habitat for burrowing owls (subterranean burrows). It is possible, but unlikely given the absence of foraging habitat and the high disturbance associated with the urban setting, that the large trees on site could serve as nesting sites for Cooper's hawk or Swainson's hawk.

Regulatory Context

Federal

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (16 USC, Sec. 703, Supp. I, 1989) regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50 Code of Federal Regulations (CFR) Section 10.13. This international treaty for the conservation and management of bird species that migrate through more than one country is enforced in the United States by the USFWS. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50 CFR 20. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors).

State

Fish and Game Code - Sections 3503, 3503.5, 3513

Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Fish and Game Code Section 3503.5 protects all birds-of-prey (raptors) and their eggs and nests. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act.

City of Sacramento

General Plan

The City of Sacramento General Plan's conservation strategy focuses on habitat conservation, minimization of impacts on sensitive biological resources, and the preservation of plant and animal diversity as the most effective way to protect individual special status species.

The following City of Sacramento General Plan guiding and implementing policy is applicable to the proposed project.

Goal A/Policy 2
Continue to implement the Heritage Tree Program.

Tree Preservation Ordinance

The City of Sacramento has adopted an ordinance to protect trees as a significant resource to the community. It is the City's policy to retain trees when possible regardless of their size. When circumstances will not allow for retention, permits are required to remove trees that are within City

jurisdiction. Removal of, or construction around, trees that are protected by the tree ordinance are subject to permission and inspection by City arborists. The City of Sacramento Tree Service Division reviews project plans and works with City of Sacramento Public Works during the construction process to minimize impacts to street trees in the City.

The Sacramento City Code includes the following provisions to protect city trees:

12.56.020 Definitions

"City street tree" means and includes any tree growing on a public street right-of-way. City street trees are maintained by the city.

"Maintenance easement private street tree" means and includes any tree growing within a maintenance easement. No parcel contains more than one maintenance easement private street tree per forty (40) feet of street frontage. If there is more than one tree in the maintenance easement per forty (40) feet of street frontage, only the one closest to the street is a maintenance easement private street tree, and the other(s) are private trees. "Street tree" means and includes both city street trees and maintenance easement provate trees (Prior code §45.01.002)

12.56.60.1 Protection of trees.

(a) No person shall remove, trim, prune, cut or otherwise perform maintenance on any city street tree without first obtaining a permit from the director pursuant to Chapter 12.56.070. (Prior Code Section 45.01.006).

12.64.020 Definitions

"Heritage tree" means:

- (1) any tree of any species with a trunk circumference of one hundred (100) inches or more, which is of good quality in terms of health, vigor of growth, and conformity to generally accepted horticultural standards of shape for its species.
- (2) any native species of oak (*Quercus* spp.), California buckeye (*Aesculus californica*), and sycamore (*Platanus racemosa*), having a circumference of 36 inches or greater when a single trunk or cumulative circumference of 36 inches or greater when a multi-trunk tree.
- (3) any tree thirty (36) inches in circumference or greater in a riparian zone. The riparian zone is measured from the center line of the water course to thirty (30) feet beyond the high water line.
- (4) Any tree, grove of trees or woodland trees designated by resolution of the city council to be of historic or environmental value or of significant community benefit. (Prior code Section 45.04.211)

12.64.040 Protection of heritage trees during construction activity.

During construction activity on any property upon which is located a heritage tree, the following rules shall apply. Unless the express written permission of the director is first obtained, no person shall:

- (a) Change the amount of irrigation provided to any heritage tree from that which was provided prior to the commencement of construction activity;
- (b) Trench, grade or pave into the drip line area of a heritage tree;
- (c) Change, by more than two (2) feet, grade elevations within thirty (30) feet of the drip line area of a heritage tree;
- (d) Park or operate any motor vehicle within the drip line area of any heritage tree;
- (e) Place or store any equipment or construction materials within the drip line area of any heritage tree;

- (f) Attach any signs, ropes, cables or any other items to any heritage tree;
- (g) Cut or trim any branch of a heritage tree for temporary construction purposes;
- (h) Place or allow to flow into or over the drip line area of any heritage tree any oil, fuel, concrete mix or other deleterious substance.

Where written permission of the director [City Neighborhood Services Director] is sought under this section, the director may grant such permission with such reasonable conditions as may be necessary to effectuate the intent and purpose of this chapter. (Prior code Section 45.04.216)

a. The California Natural Diversity Database (CNDDB) search reveled 10 special-status plant and wildlife species occurring within the Sacramento East and Sacramento West quadrangles, none of which are recorded within the project site. As discussed above, only two special status birds could potentially use the site for nesting. Swainson's hawk has occurred along the Sacramento River, approximately one mile northwest of the site and Cooper's hawk has occurred along the Natomas East Main Drainage Canal near Northgate Boulevard. Several miles from the project site.

The lack of available native habitat greatly reduces the potential occurrence of special-status wildlife species in urban areas. In addition, all work to implement the proposed project would take place within existing rights-of-way and on existing paved areas. However, tree removal could result in potentially significant impacts on nesting birds, protected by the Migratory Bird Treaty Act and mitigation would be required. Mitigation Measure B-1 would ensure that tree removal occurs outside of the breeding period. Mitigation Measure B-2 would identify active nests within and adjacent to the proposed project site. If none are found, no additional mitigation would be required. Mitigation Measure B-3 outlines avoidance measures and Mitigation Measure B-4 outlines necessary permits, should the avoidance measures not be feasible. Implementation of these measures would reduce this impact to *less than significant*. This issue will not be analyzed in the EIR.

Mitigation Measure B-1

To prevent direct impacts on nesting birds, tree removal shall occur between September 16 and February 28.

Mitigation Measure B-2

If construction activities would occur during the breeding season (approximately March 1 through September 15), the project applicant, in consultation with the CDFG and USFWS, shall conduct a pre-construction, breeding season survey of the project site during the same calendar year that construction is planned to begin. The survey shall be constructed by a qualified avian biologist to determine if any birds are nesting on or directly adjacent to the project site.

If phased construction procedures are planned for the proposed project, the results of the above survey shall be valid only for the season when it is conducted.

A report shall be submitted to the project applicant and the City of Sacramento, following the

California Department of Fish and Game, *California Natural Diversity Database*, December 5, 2004 version, printed January 14, 2005.

California Department of Fish and Game, California Natural Diversity Database, December 5, 2004 version, printed January 14, 2005.

completion of the nesting survey that includes, at a minimum, the following information:

- A description of methodology including dates of field visits, the names of survey personnel with resumes, and a list of references cited, and persons contacted.
- A map showing the location(s) of any nests observed within the project site.

If the above survey does not identify any nesting bird species on the project site, no further mitigation would be required. However, should any active bird nests be found on or within close proximity to the project site, one of the following mitigation measures shall be implemented.

Mitigation Measure B-3

The project applicant, in consultation with CDFG and USFWS, shall avoid all active nest sites within the project area while the nest is occupied with adults and/or young. The occupied nest shall be monitored by a qualified avian biologist to determine when the nest is no longer used. Avoidance shall include the establishment of a non-disturbance buffer zone, to be determined in consultation with CDFG, around the nest site, which will be delineated by highly visible temporary construction fencing.

Active nest trees that would not be removed but are in close proximity to construction activities shall be monitored weekly to determine if construction activities are disturbing the adult or young birds, until the birds have left the nest.

Mitigation Measure B-4

If an active nest site cannot be avoided and would be destroyed, special permits would be required, depending on the bird species.

- a. For a State-listed bird (i.e. Swainson's hawk), the project applicant shall obtain a Section 2081 permit. Standard mitigation for the loss of an active nest tree generally requires planting 15 trees (a mix of cottonwood, sycamore and valley oaks) and monitoring the success of the trees for five years with a 55% success rate. Locating these trees would likely not be feasible so an alternative approach could be to participate in mitigation deemed appropriate by the CDFG.
- b. For any bird covered by the Migratory Bird Treaty Act, the project applicant would consult with the USFWS to determine appropriate mitigation measures.
- b. The CNDDB search identified two sensitive habitats: elderberry savannah (approximately three miles northeast) and Great Valley cottonwood riparian forest (approximately one mile northwest), within the Sacramento East and Sacramento West quads.³ There are no streams or creeks located within the vicinity of the proposed construction areas. In addition, construction would occur on currently developed area. Therefore, the proposed project would not have an adverse effect on any sensitive natural communities or riparian habitat, and *no impact* would occur. This issue will not be analyzed in the EIR.
- c. The project area is currently a paved and developed urban area. Construction would occur within the existing road rights-of-way and on land that is currently developed and would not encroach on any undeveloped areas in the project area. There are no wetlands within the

³ California Department of Fish and Game, California Natural Diversity Database, December 5, 2004 version, printed January 14, 2005.

project area. Therefore, the proposed project would have *no impact* on wetlands. This issue will not be discussed further in the EIR.

d. There are no streams or rivers within or adjacent to the project area. The wildlife species typically found in an urban habitat include birds and small mammals. As stated under Item 4e, construction activities could potentially affect long-term tree health, which could conceivably affect nesting birds. Impacts to nesting birds are addressed in Item 4a and were found to be less than significant with mitigation.

Nocturnal bird migrants through California's Central Valley include most passerines and many other land birds and waterfowl. Passerines migrating nocturnally at low altitudes through California's Central Valley include the American redstart, American robin, Anna's hummingbird, and western tanager, along with a variety of thrush, warbler, and sparrow species. Evidence suggests that nocturnally migrating birds make use of magnetic cues, but there is also evidence that cues based on vision are important. Visual cues, derived either from celestial or ground-based sources, seem necessary for the correct orientation of nocturnal migrants.⁴

Most nocturnal migrants are diurnal outside their migration period, yet are likely to possess some visual acuity on moon- and starlit nights. However, on nights with minimum moon- or starlight, their spatial resolution is considerably reduced. This reduction of visual acuity with decreasing ambient light levels, while not posing a problem for birds migrating well away from obstacles, could result in a higher risk of collision for birds encountering tall, human-built structures and artificial lighting.

Birds migrating in bad weather conditions can be "trapped" by illuminated structures, and even in the absence of bad weather, nocturnally migrating birds have been observed to be confused by artificial lights below them. Birds are apparently not attracted to artificial light from a distance, but rather enter a lighted area by chance (i.e., aggregation) and are then reluctant to leave (i.e., entrapment). This aggregation and entrapment behavior appears to be stereotyped in nocturnal migrants, in that it is virtually identical at all types of lighted structures. Birds entering an artificially lighted area aggregate around the source of light and injury or death results when birds collide with lighted obstructions or each other. If collision is avoided, exhaustion can occur after birds have fluttered in the light beam for long periods.^{7 8 9} One solution to this effect is to reduce lighting, especially after midnight when birds begin to descend from their peak migration altitudes. As the proposed project is a residential building, it is assumed that most people will turn off their lights before going to bed. Further, the building will have fewer windows, compared to an office building, thus reducing the area of potential confusion for migrant birds.

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⁴ Emlen, S.T. 1975. Migration: orientation and navigation. In: D.S. Farner and J.R. King (eds.). *Avian Biology*. vol. 5. Academic Press. London.

Able, K.P. 1982. The effects of overcast skies on the orientation of free-flying nocturnal migrants. In: *Avian Navigation*. Papi and Wallraff, eds. Springer-Verlag, Berlin, Heidelberg. Pp. 40-49.

⁶ Martin, G.R. 1990. The visual problems of nocturnal migration. In: *Bird Migration*, E. Gwinner, ed. Springer Verlag, Berlin, Heidelberg. Pp. 185-197.

Fvans Ogden, L.J. 1996. Collision Course: The Hazards of Lighted Structures and Windows to Migrating Birds. World Wildlife Fund Canada and the Fatal Light Awareness Program. Toronto, Ontario, Canada. 45 p.

Verheijen, F.J. 1958. The mechanisms of the trapping effect of artificial light sources upon animals. Netherlands Journal of Zoology 13: 1-107.

⁹ Verheijen, F.J. 1981. Bird kills at lighted man-made structures: Not on nights close to full moon. *American Birds* 35: 251-254.

The height at which migrant birds fly is a critical factor affecting collisions with human-built structures and entrapment by artificial light sources. Most migration occurs at less than 1,000 feet above ground level, with a large fraction occurring below 500 feet. Studies suggest, however, that while structures exceeding a height of 300–500 feet can be hazardous to nocturnal migrants, those of 250 feet or less appear not to present a significant collision threat. Researchers believe this is because these structures stand well below the birds' horizon and are not perceived to be a celestial object. ¹⁰ 11

The proposed project would be 615 feet tall, the tallest building in the downtown area. However, there are already several tall buildings in the downtown area, including the 430-foot Wells Fargo building and the 19 story West America Bank (Emerald Building) building located just south of the project site. Downtown Sacramento has at least 14 constructed buildings over 200 feet tall, with five approved for construction and two planned for construction.¹²

The number of migrant bird mortalities due to collisions is unknown in Downtown Sacramento and cannot be predicted for this proposed project. Studies conducted in downtown Toronto, Canada in an area with 39 high-rise buildings ranging from 200 to 900 feet tall, documented very rough estimates of 1000 mortalities per year, with varying mortalities per building. Given that Sacramento has only 14 high-rise buildings (approximately a third of the number surveyed in Toronto), the tallest of which is 430 feet, one could estimate approximately 300 mortalities per year, though due to the hundreds of thousands of passerine migrants through the Central Valley each year, this estimate would be a conservative one.

Though birds migrating along a flight corridor through the Sacramento area could conceivably collide with a building of this height, the facts that: (1) the building will have residential uses with limited areas of continuous glass, (2) the location of the project is within an existing urban center with other tall surrounding buildings, and (3) the number of mortalities compared to the number of migrants is minimal, it is unlikely that the addition of this building would substantially interfere with the movement of any nocturnal migratory bird species, and impacts would be **less than significant**. This issue will not be addressed in the EIR.

- e. The City of Sacramento has a tree ordinance that protects Street and Heritage trees, as defined above. Some street trees could be affected by construction activities (removal or pruning for equipment access or scaffolding). Compliance with the City's Tree Ordinance would be required of the proposed project and would ensure that tree removal and/or protection would only occur after initial consultation with the City's Arborist. Compliance with the City's Tree Ordinance would reduce this impact to a *less-than-significant level*. This issue will not be addressed in the EIR.
- f. The project site is not within a habitat or conservation plan area. Therefore, **no impact** would result. This issue will not be addressed in the EIR.

Able, K.P. 1970. A radar study of the altitude of nocturnal passerine migration. *Bird Banding* 41(4): 282-290

Eastwood, D. and G.C. Rider. 1965. Some radar measurements of the altitude of bird flight. *British Birds* 58: 393-426

¹² Emporis buildings database at http://www.emporis.com/en/wm/ci/bu/?id=101358., accessed on March 14, 2005.

Evans Ogden, L.J. 1996. *Collision Course: The Hazards of Lighted Structures and Windows to Migrating Birds*. World Wildlife Fund Canada and the Fatal Light Awareness Program. Toronto, Ontario, Canada. 45 pp.

Issues			Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
5.		LTURAL RESOURCES. uld the project:				
	a.	Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?	•			
	b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?	•			
	C.	Directly or indirectly destroy a unique paleontological resource or unique geologic feature?		•		
	d.	Disturb any human remains, including those interred outside of formal cemeteries.		•		

- a,b. Results of a records search done by the North Central Information Center revealed that there are recorded subsurface historic deposits on the site, as well as 18 recorded archaeological studies within a ¼ mile radius. Several State and federally listed historic resources are also found in the area surrounding the project site. Due to the known resources on site and the overall sensitivity of the surrounding area, there is the potential for historic and/or archaeological resources to be damaged or destroyed during the construction of the proposed project resulting in a **potentially significant impact**. These issues will be further discussed in the EIR.
- c,d. While the project site has previously been disturbed, construction activities, such as construction of the sub-grade components of the project, may uncover paleontological artifacts or unique geologic resources. This would be a *potentially significant impact*. Implementation of Mitigation Measure C-1 would reduce this impact to a *less-than-significant level*.

Mitigation Measure C-1

Construction contractors involved in earth-moving activities shall be instructed on indicators that subsurface paleontological resources are present and shall be instructed in procedures to follow in the event that resources are encountered and the following measures shall be incorporated into all construction contracts:

(a) In the event any paleontological resources, such as fossils, are uncovered during construction, work within 100 feet of the find shall cease and a

North Central Information Center, Record Search Results for Towers at Capitol Mall Project letter, January 20, 2005.

qualified paleontologist shall be contacted by the by the project proponent to determine if the resource is significant. If the find is determined to be of significance, an excavation plan shall be created and resources shall be donated to an appropriate cultural center. All work products and plans shall be reviewed and approved by the City prior to execution.

d. While the project site has previously been disturbed, construction activities, such as construction of the sub-grade components of the project, may uncover human remains. This would be a *potentially significant impact*. Implementation of Mitigation Measure C-2 would reduce this impact to a *less-than-significant level*.

Mitigation Measure C-2

Construction contractors involved in earth-moving activities shall be instructed on indicators that human remains are present and shall be instructed in procedures to follow in the event that resources are encountered and the following measures shall be incorporated into all construction contracts:

- (a) When Native American archaeological, ethnographic, or spiritual resources are involved, all identification and treatment shall be conducted by qualified archaeologists who are either certified by the Register of Professional Archaeologists (RPA) or meet the federal standards as stated in the Code of Federal Regulations (36 C.F.R. 61), and Native American representatives who are approved by the local Native American community as scholars of their cultural traditions.
 - In the event that no such Native American is available, persons who represent tribal governments and/or organizations in the locale in which resources could be affected shall be consulted.
- (b) If human bone or bone of unknown origin is found during construction, all work shall stop in the vicinity of the find and the County Coroner shall be contacted immediately. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission who shall notify the person it believes to be the most likely descendent. The most likely descendent shall work with the contractor to develop a program for reinternment of the human remains and any associated artifacts. No additional work is to take place within the immediate vicinity of the find until the identified appropriate actions have been carried out.

Issues			Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
6.		DLOGY AND SOILS. uld the project:				
	a.	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i.	Rupture of a known earthquake fault, as delineated on the most recent Alquist - Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				
	ii.	Strong seismic ground shaking?				
	iii.	Seismic-related ground failure, including liquefaction?			•	
	iv.	Landslides?				
	b.	Result in substantial soil erosion, or the loss of topsoil?			•	
	C.	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			•	
	d.	Be located on expansive soils, as defined in Table 18-1-13 of the Uniform Building Code (1994), creating substantial risks to life or property?				
	e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				•

Geology

Sacramento is located within the Great Valley geomorphic province of California. The geologic formations of the Great Valley are typified by thick sequences of alluvial sediments derived primarily from the erosion of the Sierra Nevada to the east and, to a lesser extent, erosion of the Klamath Mountains and Cascade Range to the north. The sediments from these mountains were

transported downstream and deposited onto the valley floor as river channel and flood plain deposits and alluvial fans.

The subsurface materials beneath the project site have been mapped as recent (Holocene to Pleistocene-aged) alluvial deposits attributed to the Sacramento and American Rivers. ¹⁵ The younger alluvial soils are underlain by older (Pleistocene) alluvial fan sediments of the Riverbank Formation. The Riverbank Formation is composed of semi-consolidated gravels, sands and silts. The geotechnical explorations at the project site conditions have confirmed the subsurface geology published by the State.

Seismicity

Reportedly, earthquakes that have occurred in Northern California since the 1800s have had only moderate effects in the Sacramento area with intensities not exceeding about VI on the Modified Mercalli (MM) scale (Figure G-1). For example, the 1906 earthquake on the San Andreas Fault, which had a maximum intensity of XI (MM) and a M_w of about 7.9 in the San Francisco bay area, produced only an intensity of V (MM) in the Sacramento area.

The Health and Safety Element of the General Plan for the County of Sacramento shows two faults as being influential to Sacramento County: the Midland fault zone, located approximately 20 miles west of the site, and the Bear Mountains fault zone, located approximately 24 miles east of the site. These faults are mapped by the California Geological Survey (CGS) as pre-Quaternary and late-Quaternary, respectively.

The Midland fault zone is considered to be a deep pre-Pleistocene subsurface feature extending nearly 50 miles along the west side of the Sacramento Valley. This fault has been only approximately located as a result of natural gas exploration work. Subsurface data indicate that there has been no appreciable movement on the Midland fault in the last 24 to 36 million years, and no evidence of surface expression has yet been found.

The Bear Mountains fault is the westerly-most fault within the Foothills fault zone, which consists of numerous northwesterly trending faults along the western edge of the Sierra Nevada range. The Foothills fault zone is generally bounded by the Bear Mountains and Melones fault zones, located approximately 24 and 37 miles east of the site, respectively. The closest segment of the Bear Mountains fault zone to the site with late-Quaternary fault displacement is mapped 31 miles northeast of the site.4

The Green Valley, Concord, Cleveland Hill, and Hayward faults are considered to be "Active" as defined by the Alquist-Priolo Earthquake Fault Zoning Act, meaning they have experienced activity within the last 11,000 years. The Cleveland Hill fault, located approximately 57 miles north of the site, was last active in 1975, producing a magnitude 5.7 earthquake event. The Green Valley, Concord and Hayward Faults historically rupture by fault creep, that is, they move continually at a slow rate; however, these faults are considered capable of producing significant earthquake events if a large segment of the fault slips at one time.

Soils

The results of a geotechnical investigation and soil test from the project site were presented in the *Geotechnical Investigation, Capitol Towers*, Treadwell & Rollo (February 8, 2005). The results

Wagner D.L., et. al., State of California, Department of Conservation, State Mining and Geology Board, Geologic Map of the Sacramento Quadrangle, 1981.

presented in this report confirm that the project site is underlain by fill that extends to a depth of up to 10 feet below street grade. The fill primarily consists of medium stiff to stiff silt with variable amounts of sand. In addition, the fill has interbedded layers of loose to medium dense sand with variable amounts of silt and gravel. Debris, such as brick fragments and wood, was encountered in the fill.

The fill is underlain by soft to stiff silt that extends to depths that range from 21 to 47 feet below street grade. Beneath the silt is a layer of loose to medium dense sand with variable amounts of silt, and with thin interbedded layers of medium stiff sandy silt. The loose to medium dense sand layer extends to a depth between about 52 and 58 feet below street grade. Dense to very dense gravel and medium dense to dense silty sand were encountered below the loose to medium dense sand layer. The top of the gravel layer, which varies between 5 and 27 feet in thickness, is generally encountered between the depths of 52 and 58 feet below street grade. Below this are very dense layers of sand with silt, silty sand, and hard sandy clay, to a depth of 121 feet below street grade.

In addition to soil characteristics, groundwater levels were investigated and reported in the geotechnical report. In general, groundwater in the City responds to the levels of water in the nearby Sacramento and American Rivers. When these rivers are at elevated stages for extended periods of time (several weeks to a month or more during winter months), the groundwater level at the site would be expected to rise. Groundwater levels at the project site are approximately seven feet below street surface.

a.i-iii,c The closest known fault to the project site mapped by the California Department of Conservation's Division of Mines and Geology is the Dunnigan Hills Fault, located approximately 19 miles northwest of Sacramento. There are no known active faults in or adjacent to the City of Sacramento. Construction contractors are required to comply with the CUBC and the California State Building Code (Title 24) to ensure that the project is designed and constructed to meet specific minimum seismic safety and structural design requirements.

Liquefaction is a phenomenon in which saturated, cohesionless soil experiences a temporary loss of strength due to the buildup of excess pore water pressure, especially during cyclic loading, such as that induced by earthquakes. Soil most susceptible to liquefaction is loose, clean, saturated, uniformly graded, fine-grained sand and silt of low plasticity that is relatively free of clay. Flow failure, lateral spreading, differential settlement, loss of bearing strength, ground fissures, lurch cracking, and sand boils are evidence of liquefaction.

The Treadwell & Rollo geotechnical report found that, with a seasonal high groundwater level of seven feet below street grade, the zones of saturated, loose to medium dense sandy fill, sand, and silty sand between the depths of 9.5 and 58 feet below street grade are susceptible to liquefaction during a major earthquake generating a peak ground acceleration of 0.17g at the site. If there were such an event, liquefaction would result in the consolidation or settling of the soil such that there would be vertical displacement of structures (i.e., sidewalks) by about three to 10 inches. Since the proposed project would not result in any slopes, there would be possibility of lateral spreading.

Project construction would require demolition, grading, excavation, pile driving, and trenching activities. It is anticipated that buildings would be supported on concrete piles below the existing surface level. It is also anticipated that groundwater would be

encountered during construction. Dewatering activities may be required for excavation of basement levels to maintain adequate construction conditions. The foundation would be a deep foundation that could include, but would not be limited to, steel H-piles or precast, presetressed concrete piles, as described in the Geotechnical Investigation, Capitol Towers, Treadwell & Rollo (February 8, 2005), or other methods deemed appropriate and effective by the City of Sacramento.

Common structural engineering methods would be implemented by the proposed project and would reduce the potential for liquefaction to affect project structures and reduce potential impacts associated with unstable soil conditions during dewatering activities. The project applicant would have the engineering and design of foundational structures reviewed and approved of by the City of Sacramento Engineering Department prior to approval of grading and construction plans for the proposed project. The following will be included in the project design.

- Design and engineering of the building structures that is compliant with the California Uniform Building Code for structures built in Seismic Zone 3.
- The proposed project construction would include an indicator pile, pile load test, and pile driving analyzer program, as recommended in the Geotechnical Investigation, Capitol Towers, Treadwell & Rollo (February 8, 2005), to evaluate the driving behavior of piles across the project site, the driving refusal depth of piles, and to determine the maximum load capacity of piles for support of the towers. Results of these tests shall be used to determine the appropriate number and depth of support piles to prevent structural failure due to liquefaction.
- For below grade construction, preparation of a site-specific geotechnical investigation (by a State licensed and qualified engineer or geologist) prior to the start of excavation to determine the exact depth to groundwater in the site, and the need for subsurface drainage and the potential for excavation walls to become unstable or fail.
- Dewatering of the site during the seasonal rise in the groundwater levels under the
 project site according to the subdrain plan. A subdrain plan could include subdrains,
 reinforced concrete retaining walls, and/or waterproofing methods shall be used to
 eliminate the effects of subsurface groundwater conditions on subgrade foundations.
- Preparation of a subdrain plan based on recommendations from a State licensed and qualified engineer or geologist that would form part of the final plans for the project.
- Design below-grade walls and foundation for a water level at a minimum elevation of approximately seven feet below street grade, and check the foundation system for potential uplift conditions during and after building construction.
- Any dewatering would comply with applicable requirements established by the Central Valley Regional Water Quality Control Board and shall be coordinated with the City's Flood Control and Sewer Division.
- Where required due to high groundwater, excavations would be shored as required by the Office of Safety and Health Administration (OSHA) to preclude slope failures

during the construction period. Shoring would use standard stabilizing methods, such as tiebacks, as necessary to retain excavation areas.

Compliance with the above construction methods would ensure that hazards associated with construction in unstable soils would be reduced to a *less-than-significant level*. This issue will not be further addressed in the EIR.

- iv. The project site and surrounding areas are flat and do not contain any steep slopes or other features that could result in landslide or mudflow hazards. It is not anticipated that landslides or mudflows would result due to project implementation. Therefore, **no impact** would occur. This issue will not be addressed in the EIR.
- b. The project site encompasses an area that is mostly developed or paved for parking with little original topsoil remaining. The project would include clearing the site to allow construction of the proposed project. However, because the site has already been developed, there would be a *less-than-significant impact* on topsoil. This issue will not be addressed in the EIR.
- d. Soils with expansive properties contain a high percentage of clay particles. The proposed project would be located on sandy and silty soils with very low percentages of clay particles. Therefore, the soils would not be subject to substantial expansion and there would be a less-than-significant impact. This issue will not be further addressed in the EIR.
- e. The proposed project would not include the use of septic tanks or alternative wastewater disposal systems, so there would be **no impact**. This issue will not be addressed in the EIR.

Issues	-		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
7.	HAZARDS AND HAZARDOUS MATERIALS. Would the project:					
	a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			•	
	b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		•		
	C.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				•
	d.	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			•	
	e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			•	
	f.	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?			•	
	g.	Impair implementation of or physically interfere with an adopted emergency response		. 🗆	•	

Issues		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
	plan or emergency evacuation plan?				
h.	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				•

a. Hazardous materials would be used in varying amounts during construction and occupancy of the proposed project. Products and materials typically used during construction that could contain hazardous substances include paints, solvents, cements, glues, and fuels. Exposure of construction workers or site occupants to hazardous materials could occur in the following manner: improper handling or use of hazardous materials or hazardous wastes during construction or occupancy of the proposed project; transportation accident; environmentally unsound disposal methods; or fire, explosion or other emergencies.

Construction workers and future site residents could be exposed to hazards associated with accidental releases of hazardous materials, which could result in adverse health effects. Hazardous materials that could be present during occupancy of the residential and commercial areas in the project site are expected to include items such as household-type and maintenance products (e.g., paints, solvents, pool chemicals, pesticides/herbicides). Office and commercial activities could use a variety of products such as cleaning agents, solvents, paints, materials used in printing, pesticides, and chemicals for landscaping. The types and amounts of hazardous materials would vary according to the location and nature of the activity. However, all allowable uses would be subject to code requirements, as necessary, which would ensure compliance with applicable permits and inspections.

Hazardous materials regulations, which are codified in Titles 8, 22, and 26 of the California Code of Regulations (CCR), and their enabling legislation set forth in Chapter 6.95 of the California Health and Safety Code, were established at the State level to ensure compliance with federal regulations to reduce the risk to human health and the environment from the routine use of hazardous substances. These regulations must be implemented by employers/businesses, as appropriate, and are monitored by the State (e.g., Cal OSHA in the workplace or DTSC for hazardous waste) and/or local jurisdictions (e.g., the City of Sacramento Fire Department and Sacramento County Emergency Management Department (SCEMD)).

By ensuring that businesses in or adjacent to the project site comply with the above regulations, the City would reduce impacts associated with the potential for accidental release of hazardous materials during occupancy of the proposed project that would result in increased risk of exposure to accidental release of hazardous materials, and the potential for an increased demand for incident emergency response. This would be accomplished by ensuring that regulated activities (e.g., businesses) are managed in accordance with applicable regulations such as Hazardous Materials Release Response Plans and

Inventories (Business Plans), the California Accidental Release Prevention (CalARP) Program, and the California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements.

Compliance with Title 26, Division 6, of the CCR, which would be monitored by the City, would reduce impacts associated with potential for accidental release during construction or occupancy of the project site and the potential for an increased demand for incident emergency response. Compliance with this regulation would ensure that businesses and public facilities where hazardous materials are used or stored adhere to regulations designed to prevent leakage and spills of material in transit and provide detailed information to clean-up crews in the event of an accident.

Workplace regulations addressing the use, storage, and disposal of hazardous materials in Title 8 of the CCR would apply to businesses and public facilities in and adjacent to the project site. Compliance with these regulations would be monitored by the City of Sacramento Fire Department and the SCEMD when they perform inspections for flammable and hazardous materials storage. Other mechanisms in place to enforce the Title 8 regulations include compliance audits and reporting to local and State agencies. Implementation of the workplace regulations would further reduce the potential for hazardous materials releases.

Implementation of Title 49, Parts 171-180, of the Code of Federal Regulations would reduce any impacts associated with the potential for accidental release during construction or occupancy of the proposed project or by transporters delivering hazardous materials to the project site or picking up hazardous waste. These regulations establish standards by which hazardous materials would be transported, within and adjacent to the proposed project. Where transport of these materials occurs on roads, the CHP is the responsible agency for enforcement of regulations.

Implementation of and compliance with applicable federal and State laws and regulations that are administered and enforced by the SCDEM, and City of Sacramento Fire Department standards (the local agency that implements applicable hazardous materials-related sections of the Uniform Fire Code and Uniform Building Code) would reduce impacts associated with the routine use, storage, and transportation of hazardous materials in the proposed project to a **less-than-significant level**. This issue will not be addressed in the EIR.

b. Asbestos-Containing Materials and Lead-Based Paint

Several regulations and guidelines pertain to abatement of and protection from exposure to asbestos-containing building materials (ACBM) and lead-based paint. These include Sacramento Metropolitan Air Quality Management District (SMAQMD) rules 902 and 304 (pertaining to asbestos abatement and related fees), Construction Safety Orders 1529 (pertaining to ACBM) and 1532.1 (pertaining to lead-based paint) from Title 8 of the CCR, Part 61, Subpart M of the CFR (pertaining to ACBM), and lead-based paint exposure guidelines provided by the U.S. Department of Housing and Urban Development (HUD). In California, ACBM and lead-based paint abatement must be performed and monitored by contractors with appropriate certification from the California Department of Health Services. The proposed project would include the demolition of existing structures that were built when ACBM and lead-based paints were widely used. All demolition activities in the City are required to apply for permits which include requirements for the testing and removal, if any, of ACBM and lead-based paint based on the aforementioned federal and State regulations.

Phase I Environmental Site Assessments

The proposed project site and surrounding environment is dominated by urban land uses. Urban land uses are associated with hazardous materials use and storage because of the application of pesticides and fertilizers for landscaping and the use of petroleum-related compounds and other chemicals for general maintenance of facilities and equipment. Phase I Environmental Site Assessments (ESAs) are used to assess whether potentially hazardous materials are located on a property. Standards for Phase I ESAs have been developed by the American Society for Testing and Materials (ASTM) and are used routinely to determine the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products, onto the surface or into the ground, groundwater or surface water of the property. If a Phase I ESA finds that hazardous materials found on the property may have been released, then certain recommendations (e.g., further monitoring or clean-up or Phase 2 ESA) is usually recommended. A Phase 2 ESA typically includes collection and analysis of soil and water samples. Based on the results, the Phase 2 ESA may recommend additional testing, remediation, or other controls to address contamination.

Three Phase 1 ESAs were completed for the project site since 1994. The Phase 1 ESAs identified historical uses on the project site that could have resulted in releases of hazardous materials in the soil or groundwater. These include a Regal gas station, once located on the southwest portion of the project site at least from the early 1950s to sometime in the 1960s, and a former underground storage tank (UST) once located in the northeast corner of the project site. In addition, records indicate the storage and use of inks and solvents in the project site from previous newspaper operations. The Phase 1 ESAs also identified releases of petroleum compounds (oils, fuel, and residues) and volatile organic compounds (mostly solvents) in the vicinity which could impact the soil and groundwater underlying the project site. The most notable site indicated in the Phase 1 ESAs is the Union Pacific Railroad Company (UPRR) rail yard located approximately 0.3 miles north-northeast of the project site in the vicinity of 4th and I streets.

The Phase 1 ESAs concluded that potential environmental impacts to the project site could include groundwater and soil contamination from the former Regal service station and the off-site UPRR site. As a result, limited soil and groundwater samples were taken and analyzed in December 2002 to address these potential environmental impacts. The analysis indicated that there were petroleum hydrocarbons from motor oil and diesel found in soil and groundwater samples. The levels of contaminants in the soil and groundwater prompted the Central Valley Regional Water Quality Control Board (CVRWQCB) to order a quarterly groundwater monitoring program. Four semi-permanent wells were installed; one located in the southwestern corner; two located in the northern portion of the project site along L Street; and the third on the eastern portion of the site along 4th Street.

Soil samples were taken from varying depths during the drilling and installation of the wells. Samples from two of the wells indicated petroleum compounds above laboratory detection limits but within limits acceptable by SCEMD for soils. Analyses for metals in soil samples at one well location indicated that levels of lead and zinc are above the residential preliminary remediation goals (PRGs), but below the industrial PRGs.

Groundwater samples collected from all four wells from the three sampling rounds indicate levels of some petroleum compounds in the groundwater that are within acceptable regulatory concentrations. Most compounds were non-detectable with the laboratory techniques required by specific regulatory testing standards. The four groundwater wells

were destroyed in place according to SCEMD standards for monitoring well destruction. A letter from the SCEMD dated February 2, 2005 indicates that the County and the CVRWQCB stated that no further action is required for the groundwater under the project site. Therefore, there is regulatory closure of the groundwater issues from former land uses in the project site. In relation to the soils on the project site, the final Phase 1 ESA and an environmental document review recommended that further testing of the underlying soils in the project site be conducted prior to excavation to further characterize the extent of contamination, if any, from petroleum, lead, and zinc. If there is contamination, the Phase 1 ESA recommended removal of contaminated soils to the appropriate solid waste disposal facility. Residual contamination in the soil could be present and could require active remediation to allow unrestricted land use.

Dewatering during construction activities could result in the movement of the nearby groundwater contamination plume from the UPRR rail yard northwest of the project site. If groundwater was actively pumped from site for construction and operation, the plume could move towards the project site. Special dewatering recommendations may be required for excavations that extend below the foundation subgrade level during periods when groundwater is high. Active dewatering would require the installation of a series groundwater wells and pumps surrounding the project site. This active system would require a high amount of pumping to reduce the groundwater level in the project site. Further, active pumping for dewatering would lower groundwater levels in areas adjacent to the project site, and could affect the movement of the underlying UPRR contamination plume.

Use of a passive dewatering system would be less intensive and would not require the pumping of groundwater in quantities that could affect the current extent of the plume. Passive dewatering techniques would be sensitive to changes in groundwater level and the depth of the excavation, especially if excavations extend below the foundation subgrade level, such as for elevator pits. The advantage of a passive dewatering system is that the flow rate of water entering the excavation would be controlled by the Sacramento and American River levels and the permeability of the silty, sandy, and gravelly soil adjacent to and beneath the proposed excavation. During periods of low river levels, little or no dewatering would be required. As the rivers rise, the flow rate of water entering the excavation would be relatively slow due to the low permeability of the soil in and around the project site. Consequently, the rate in which water would need to be collected and removed from the proposed excavation would be less than a comparable active dewatering system that is designed to locally suppress the groundwater table.

Implementation of the following mitigation measure would reduce impacts to *less-than-significant levels* by ensuring that any unidentified contaminated soils are contained and disposed of properly and that dewatering activities do not move the plume of groundwater contamination towards the project.

Mitigation Measure H-1

The proposed project shall prepare and conduct a program of random soil sampling and analyses to characterize the extent, if any, of soil contaminants listed in the Phase 1 reports. The program and analyses shall be prepared by a State licensed and qualified engineer. Further, a report of the program results shall be made by a State licensed and qualified engineer and submitted to the Sacramento County Emergency Management Department (SCEMD) and Department of Toxic Substances Control (DTSC).

- If the findings of the soil analyses indicate levels of contaminants above those acceptable by the SCEMD or DTSC, then a remediation program shall be prepared by a State licensed and qualified engineer to excavate and remove the contaminated soils to the appropriate solid waste disposal facility.
- Construction and operation of the proposed project shall implement a dewatering regime detailed in a subdrain plan. The subdrain plan shall use a passive dewatering system including, but not limited to, a series of subdrains, sumps, and pumps, to prevent any influence on the movement or extent of the existing UPRR rail yards groundwater plume. The passive dewatering system and subdrain plan shall be written, managed, and updated by a qualified State licensed engineer.
- c. The project site is not located within one-quarter mile of an existing or proposed school site. Therefore, there would be **no impact** due to exposure of a school to hazardous materials, substances, or waste. This issue will not be addressed in the EIR.
- d. The project site is not listed on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, impacts to the public or the environmental would be *less than significant*. This issue will not be addressed in the EIR.
- The project site is not within an airport land use plan or within two miles of a public airport or e,f. private airport, so the project would not result in a safety hazard for people residing or working in the project area. The proposed project includes a helistop on each tower, in compliance Sacramento City Code 15.100.040, which requires an emergency helistop for every highrise building in which there are habitable floors above one hundred fifty (150) feet in height. The project helistop would be used for emergency or evacuation purposes and available for private use. Sacramento City Code 15.100.040 states that helistops for other than emergency use shall be provided with a fuel containment system capable of holding two hundred (200) gallons and be designed so that no fuel shall enter the building drain system. These features would be incorporated into the building design. The helistops would be designed as required by the Department of Transportation, Federal Aviation Administration, Helicopter Design Advisory Circular 150/5390-2, and Title 21, Division of Aeronautics and designed to support a minimum ten thousand (10,000) pounds. The project would also be required to obtain a Heliport Site Approval Permit from Caltrans Division of Aeronautics, which would include a review of flight approach and departure paths. Compliance with the requirements of the permit and design standards from the above agencies would ensure that the helistops would not pose a substantial risk to people in the area. Therefore, this would be considered a less-than-significant impact and this issue will not be addressed in the EIR.
- g. As stated in Item 7e, there would be no modifications to the street system such that streets would be permanently blocked. The proposed project includes alteration of 3rd Street from one-way to two-way. This change would be designed in coordination with the City Development Engineering and Finance Division to ensure this road segment would be consistent with City safety standards. Therefore, the proposed project would not physically interfere with adopted emergency response or emergency evacuation plans. This would be considered *less than significant* and will not be further addressed in the EIR.
- h. The project site is within an urbanized area, so the proposed project would not expose people or structures to a risk involving wildland fires. There would be **no impact** and this issue will not be addressed in the EIR.

		Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
8.		DROLOGY AND WATER QUALITY uld the project:			·	
	a.	Violate any water quality standards or waste discharge requirements?			•	
	b.	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				
	C.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation onor off-site?			.	
	d.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				
	e.	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	•			
	f.	Otherwise substantially degrade water quality?			•	
	g.	Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			•	
	h.	Place within a 100-year floodplain structures which would impede or redirect flood flows?			-	

	Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
i.	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			•	
j.	Inundation by seiche, tsunami, or mudflow?				

a,f. The project site is in an urban setting and is mostly covered in impervious surfaces (i.e., an existing office building and parking lots) with approximately one-quarter of the site covered by landscape areas. The project site is completely surrounded by other urban development and impervious surfaces. Because the amount of impervious surface would not substantially increase, the current absorption rates or drainage patterns, and the rate and amount of surface runoff would not change substantially. However, construction activities would expose soils that could result in rainfall-generated runoff into the City's storm system. Urban contaminants such as oil, grease, heavy metals, and pesticides and herbicides from proposed development could be present in runoff as well. Sediments and other contaminants could ultimately be discharged to the Sacramento River through the storm drain system, or migrate to groundwater via infiltration, which could violate water quality standards or waste discharge requirements.

The proposed project would be required to apply for a National Pollution Discharge Elimination System (NPDES) General Construction Permit to prevent potential discharges of runoff from construction activities into the City's storm system. The NPDES General Construction Permit would require the preparation of a Stormwater Pollution Prevention Plan (SWPPP) to be kept on the project site during construction activities. The SWPPP must include Best Management Practices (BMPs), such as drop inlet protection devices, vegetation erosion control measures (i.e., mulching, grassy swales, or seeding/plantings), physical stabilization (i.e., dust control, outlet protection, etc.), and sediment control measures (i.e., silt fences, straw bale barriers, sandbag barriers, etc.), or equally effective BMPs, which would protect receiving waters from potential discharges of contaminants and soil during project construction. Other BMPs that could be implemented as part of the SWPPP include, but would not be limited to:

- reduction of the area and length of time that the site is cleared and graded;
- revegetation/stabilization of cleared areas as soon as possible; and
- implementation of comprehensive erosion, dust, and sediment controls.

Compliance with measures identified in the SWPPP would reduce contaminants reaching waterways. Therefore, the proposed project would not violate any water quality standards or otherwise degrade water quality and impacts from construction of the proposed project would be *less than significant*. This issue will not be addressed in the EIR.

b. The depth to groundwater on the project site ranges from 7 to 20 feet. Excavation would be required in order to accommodate below grade parking. In the event that excavation on the project site reached the groundwater table, dewatering would be required. Because the City is an urbanized area and largely covered in impervious surfaces, groundwater recharge to the local aquifers is through open space land uses surrounding the City and from the

American and Sacramento Rivers. Because the groundwater aquifer that would be affected does not supply water to the city for its domestic water needs, it is not anticipated that the loss of this water would constitute a significant impact.

In addition to excavation, building piles would be constructed to support the structures; however, the building piles are not anticipated to interfere with the movement of groundwater either horizontally or vertically. In this instance, groundwater would be displaced rather than removed. As discussed in Item 7b, some dewatering may be necessary, but it would be temporary, so ground-water supplies would not be substantially depleted.

The proposed project would be served water through the City's water supply system, which relies entirely on Sacramento and American River water. The proposed project would not use groundwater resources during project operation. Therefore, the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. This would be **less than significant** and will not be addressed in the EIR.

- c,d. The proposed project is located in an urban setting with pre-existing drainage utilities that serve the area. As previously stated, the project site is largely covered with impervious surfaces, so development of proposed project would not substantially alter the existing drainage pattern of the site or area. The project site is in an urban area that would not be subject to substantial erosion or siltation. As discussed in Item 7a,f, the proposed project would be required to apply for a NPDES General Construction Permit and prepare a SWPPP with BMPs to protect receiving waters from potential discharges of contaminants and soil during project construction. Therefore, the proposed project would not result in a significant increase in rate or volume of runoff or in erosion or siltation, and impacts would be *less than significant*. This issue will not be addressed in the EIR.
- e. Stormwater runoff from the project site would enter Sump 52, which flows to the Sacramento River. Wastewater from the proposed project would flow to the City's combined stormwater runoff and sanitary sewer system (CSS). During heavy storms, flows to the CSS can exceed its capacity, causing the system to overflow onto streets (outflows) or allow untreated combined wastewater to be discharged to the Sacramento River (combined sewer overflows, or CSOs). Local flooding can occur during moderate and large storms when the CSS is full and stormwater runoff cannot enter the collection system. Much of the flooding is due to undersized laterals and collectors, and is widespread in the CSS service area. The City has identified and implemented several projects to rehabilitate and improve the CSS system to remedy these problems, but has not completed the improvements to date. Because the proposed project could increase flows to the CSS by generating a significantly higher stream of wastewater than is currently produced by on-site uses, it could exceed the CSS capacity and exacerbate backflow and flooding conditions in the City. Thus, the proposed project would result in a significant impact that will be addressed in the Public Services and Utilities section of the EIR.
- g,h,i. The project site is located in the 100-year flood plain as mapped by the Federal Emergency Management Agency. By allowing for construction of residential and non-residential uses in this flood zone, the proposed project could bring people into an area at risk of flooding from the 100-year flood. However, the current status of this floodplain is to be revised early in 2005 by FEMA such that areas adjacent to and within the project site would be outside of the 100-year floodplain. This is a direct result of recent levee stabilization along the American River, undertaken by the Sacramento Area Flood Control Agency and the US Army Corps of Engineers. Since the proposed project would not be completed until 2006, well after the

- change of the floodplain zone, impacts would be *less than significant*. This issue will not be addressed in the EIR.
- j. Due to the flat topography in the City, the possibility of a mudslide is nonexistent. Although there is potential for inundation from a major seiche from water bodies well upstream of the City (i.e., Folsom and Nimbus Dams) and from the Sacramento River, the probability of seiche is very low. Further, the project site is not located in an area subject to tsunami waves. Therefore, exposure of people or structures to a significant risk involving flooding as a result of inundation by seiche, tsunami, or mudflow would be *less-than-significant*. This issue will not be addressed in the EIR.

Issues			Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
9.		ND USE AND PLANNING uld the project:				
	a.	Physically divide an established community?				-
	b.	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating on environmental effect?				
	C.	Conflict with any applicable habitat conservation plan or natural community conservation plan?				-

- a. The project site currently developed, but unoccupied. The site is within the City of Sacramento's CBD, with I-5 to the west and business uses on the north, east, and west. The development of the project site would occur within the existing block and would not remove access to the project site or the surrounding area. Therefore, there would be no impact.
- b. The proposed project would require Special Permits to allow residential uses in the CBD and to permit building heights in excess of standards for General Commercial District (C-3-SPD) and a design review to allow a reduction of the setbacks and stepbacks required in the Sacramento Urban Design Plan Capitol Mall Massing Guidelines. Because variation from existing zoning is allowed, following City review and approval, this would be considered a *less-than-significant impact*. However, consistent with City of Sacramento practice, the EIR will include a discussion of City land use plans in the Land Use and Planning section.
- c. The project site is located within an urban area in the City's downtown. There are no habitat or natural community conservation plans applicable to the project site. There would be **no impact**. This issue will not be addressed in the EIR.

Issues			Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
10.		NERAL RESOURCES. build the project:				
	a.	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?				•
	b.	Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				•

a,b. There are no known mineral resources on the project site. In addition, the project location, within the City's CBD, would likely preclude any resource recovery operations, if mineral resources were present. Therefore, project implementation would not result in the loss of availability of a known mineral resource or otherwise affect mineral resources and there would be *no impact*. This issue will not be addressed in the EIR.

Issues			Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
11.		ISE. uld the project result in:				
	a.	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	•			
	b.	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	•			
	C.	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	•			
	d.	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	•			
	e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	•			
	f.	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	•			

- a-d. The proposed project would include the construction and operation of a residential and hotel development. Construction activities could result in substantial amounts of noise and vibration. Residents and visitors to the project would increase the amount of vehicle trips to and from the site, which would increase noise in the project vicinity. The increases in noise would result in a **potentially significant impact** and will be addressed in the EIR.
- e,f. The project site is not within an airport land use plan or within two miles of a public or private airstrip. However, the proposed project would include a helistop for emergency purposes.

Noise associated with the helistop could result in increased noise levels that could affect noise levels in the vicinity. This would be considered a *potentially significant impact* and will be addressed in the EIR.

Issues			Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
12.		PULATION AND HOUSING. build the project:				
	a.	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?				
	b.	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				=
	C.	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				=

- a. The proposed project includes the construction of up to 800 condominium units, which would directly result in an increased population of approximately 2,056, assuming 2.57 persons per household¹⁶. The population generated by the proposed project could result in physical environmental effects. This is considered a *potentially significant impact*. Where the increased population resulting from the proposed project has the potential to result in physical effects on the environment, those effects will be addressed in the appropriate technical sections of the EIR. In addition, the potential growth inducing effects of the project will be addressed in the CEQA Considerations chapter of the EIR.
- b,c. The project site currently contains a vacant office building. Development of the proposed project would not displace any housing or people such that new housing would be required to be constructed elsewhere. There would be *no impact*. This issue will not be addressed in the EIR.

Based on 2000 US Census, U.S. Census Bureau, American Fact Finder, Sacramento City, California, http://factfinder.census.gov, Accessed January 10, 2005.

Issues			Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
13.	Wood advo with alter for r gove con- sign orde ratio	BLIC SERVICES. Ald the project result in substantial erse physical impacts associated the provision of new or physically ared governmental facilities, need new or physically altered ernmental facilities, the estruction of which could cause difficant environmental impacts, in er to maintain acceptable service or, response times or other formance objectives for any of the lic services:				
	a.	Fire protection?				
	b.	Police protection?				
	C.	Schools?			•	
	d.	Parks?			•	
	e.	Other public facilities?			•	

- a. All new buildings that have floors used for human occupancy located more than 75 feet above the lowest level of fire department access are required to comply with the City's highrise regulations (Chapter 15.100), which are enforced by the fire department and the building inspections division. Prior to issuance of certificate of compliance, elements of the life safety system must be installed in accordance with approved plans and specifications and must be tested, certified, and proved to be in proper working condition to the satisfaction of the building inspections division and fire department. The following systems are required (Chapter 15.100.40):
 - Standby and emergency electrical power systems;
 - Fire alarm and related equipment;
 - Firefighters phone and voice communication systems;
 - Enclosed stairway pressurization system;
 - Smoke evacuation and control systems (mechanical equipment);
 - Other fire protection and extinguishing systems;
 - Fire department breathing air system;
 - Fire hydrant system;
 - Automatic fire sprinkler system;
 - Fire apparatus access roadways;
 - Elevators and controls;
 - All equipment and their rooms;

- All applicable requirements in Titles 19 and 24, California Code of Regulations and the Uniform Building Code, Uniform Fire Code, and N.F.P.A. codes and standards shall also apply;
- All systems required by this title, including building, mechanical and electrical equipment;
- Complete exit systems.

The proposed project would include all features required by the code, such as fire department equipment storage rooms, fire suppression systems, automatic sprinklers, smoke detection systems, and fire separation doors, to ensure occupant safety in the case of a fire. The towers would each have dedicated stairways from the top of the building to the bottom floor for fire personnel access, as well as a helistop on each tower that could be used in emergencies for evacuations and fire department access.

While the proposed project would increase the demand for fire protection services, because the proposed project would include fire protection features required in the City's ordinance, the proposed project would not create an inordinate demand for protection services such that new or altered facilities would be required. In addition, the proposed project would be required to pay all applicable City fees toward the provision of fire protection services to meet demands created by the project. Therefore, this would be considered **less than significant**. This issue will not be addressed in the EIR.

- b. The project site would be served by the City of Sacramento Police Department (SPD). The addition of 800 residential units would increase the demand for police services in the Central City area. The proposed project could require changes to patrols in the area, but it would not require the construction of a new station or expansion of an existing station. The Sacramento General Plan does not contain standard ratios of officers per capita. However, the proposed project would be required to pay all applicable development fees toward the provision of police services to meet demands created by the project. Therefore, the impact on police services would be *less than significant*. This issue will not be addressed in the EIR.
- C. The developer would be required to contribute towards school facilities funding. Funding for new school construction is provided through State and local revenue sources. However, due to the passage of Proposition 1A in November 1998, Senate Bill (SB) 50 (Chapter 407, Statutes of 1998) was enacted to change the way school districts can levy developer fees. SB 50 has resulted in full State preemption of school mitigation. SB 50 enables the district to collect a fee that is equal to the current statutory Level I fees. Where justified, SB 50 allows the district to collect additional fees in an amount that would approximate 50 percent of the cost of additional facilities. The collection of the 50 percent mitigation fees is with the assumption that the State School Facility funding program remains intact and that State funds are still available for partial funding of new school facilities. If the funds are not available, Districts may collect up to 100 percent mitigation fees under certain circumstances. Satisfaction of the statutory requirements by a developer (payment of fees) is deemed to be full and complete mitigation. Therefore, the proposed project would pay all applicable fees, ensuring the impact would be less than significant. This issue will not be addressed in the EIR.
- d. Please see Item 14 a,b.
- e. The proposed project would include lighting and other energy conservation measures and will construct all structures with up-to-date energy-saving equipment. Lighting conservation efforts in new construction include installation of occupancy sensors to automatically turn off

lights when not in use, lighting reflectors, electronic ballasts, and energy-efficient lamps. Conservation efforts are also expected to involve improved HVAC systems with microprocessor-controlled energy management systems. In addition, all development would be required to comply with specifications contained in Table 24 of the CCR.

With respect to operational activities, compliance with all applicable building codes, planning policies, and standard conservation features, would ensure that all natural resources are conserved to the maximum extent possible. It is also possible that new technologies or systems will emerge, or will become more cost-effective or user-friendly, to further reduce the reliance upon nonrenewable natural resources. Nonetheless, construction activities related to the proposed project would result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels (including fuel oil), natural gas, and gasoline for automobiles and construction equipment.

The proposed project is a high-density mixed-use project in an urban area, in close proximity to transit, activity centers, and other existing and planned infrastructure. This type of project in such an environment would result in energy savings (vehicle fuel) due to reductions in vehicle miles traveled. While the energy savings due to reduced trips cannot be easily quantified, there would be a reduction compared to an equally intense development in a less dense urban area.

Electricity for the proposed project would be provided by the Sacramento Municipal Utility District (SMUD). SMUD has indicated that there will be minimal impact to the electrical system due to the proposed project and no new energy generation would be required. SMUD further indicated that there is substation capacity to serve the project, so the project would not result in the need for accelerated system improvements, although there may be some minor line work required to efficiently serve the project, the location of which is not known at this time.

The natural gas provider for the proposed project site, Pacific Gas and Electric Company (PG&E), has indicated that existing facilities in the area could adequately serve the proposed project and no new natural gas supplies would need to be obtained. However, while existing natural gas facilities may be adequate to serve the proposed project, it is possible that the project could demand service levels that exceed PG&E's standard pressure (1/4 pounds per square inch). In that case, PG&E would perform the necessary upgrade of gas facilities at the project proponent's expense, which could include an upsizing of existing pipelines in 4th Street, that would extend a maximum of two blocks to the south. If required, the line upgrade could result in short-term traffic impacts and air quality impacts associated with equipment (backhoe). However, due to the limited extent of the potential improvements, these impacts would not be substantial.

Although resources would be permanently and continually consumed by project implementation, the amount and rate of consumption of these resources would not result in the unnecessary, inefficient, or wasteful use of these resources. Therefore, this would be considered a *less-than-significant impact*.

¹⁷ David Fuke, Network Planner, SMUD, written communication, March 31, 2005.

¹⁸ B. Hall Hackney, Planning Engineer, PG&E, personal communication, March 31, 2005.

Issues			Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
14.	RE	CREATION.				
	a.	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			•	
	b. ·	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			•	

a,b. The project site is located within the City's Central City Planning Area, which contains 20 parks with a total of over 83 developed acres 19 and approximately 185 parks city-wide. 20 The proposed project also includes recreation facilities, such as a pool, gymnasium, and basketball court, for use by tenants and hotel guests. In addition, the project proponent would be required to pay in-lieu fees, in accordance with the provisions of the Quimby Act, requiring residential developers to dedicate land or in-lieu funds toward park development. While residents and guests of the project would likely use some of the park facilities in the vicinity of the project site and other city-wide facilities, the population generated by the proposed project would not increase the use of the parks such that there would be substantial physical deterioration of the facility or that additional or expanded recreation facilities would be required. Therefore, this would be considered a *less-than-significant impact* and this issue will not be addressed in the EIR.

¹⁹ City of Sacramento website, Central City Parks table, http://www.cityofsacramento.org/parksandrecreation/parks/central.htm, accessed March 1, 2005.

²⁰ City of Sacramento website, Alpha List of park Sites, http://www.cityofsacramento.org/parksandrecreation/parks/alphalist.htm, accessed March 1, 2005.

Issues			Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
15.		NSPORTATION/TRAFFIC uld the project:				
	a.	Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?				
	b.	Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	•			
	C.	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?			-	
	d.	Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	•			
	e.	Result in inadequate emergency access?	•			
	f.	Result in inadequate parking capacity?				
	g.	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?			•	

- a,b,d,e. The proposed project includes up to 800 dwelling units, 275 hotel rooms, and retail uses, all of which would generate traffic beyond that generated at the site. The additional traffic could exceed the capacity of the existing roadway system and result in congestion on local streets. The proposed project also includes a conversion of 3rd Street from one-way to two-way. This would be considered a **potentially significant impact**. Changes in traffic volumes in the context of the local streets, potential hazards associated with design features, and emergency access will be addressed in the EIR.
- c. The proposed project would not increase air traffic in the area or result in a change in location of air traffic that would result in potential safety risks. The proposed project would include helistops on each of the towers; however, the helistops would be required to be permitted by the FAA to ensure that the project would not result in air traffic conflicts or

- safety issues. This would be considered a *less-than-significant impact* and will not be addressed in the EIR.
- f. The proposed project includes 1,100 parking spaces for 800 condominium units, 275 hotel rooms, and the restaurant and retail uses for the project. This could result in a **potentially significant impact** on parking in the downtown area. This issue will be addressed in the EIR.
- g. The proposed project would not alter any transit facilities or in any way hinder alternate transportation methods. The project would add population near retail and employment uses and transit facilities which would encourage the use of these facilities and decrease congestion. Therefore, this would be considered a *less-than-significant impact* and will not be addressed in the EIR.

Issues			Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
16.	SYS	LITIES AND SERVICE STEMS. uld the project:				
	a.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	•			□ .
	b.	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	•			
	c.	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	•			
	d.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	•			
	e.	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	•		<u></u>	
	f.	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	•			
	g.	Comply with federal, state, and local statutes, and regulations related to solid waste?	•			

a,c,e. The project site contains an existing building with some areas off landscaping. The proposed project would develop the entire block, converting the site to entirely impervious

surfaces. This would increase the amount of storm water entering the storm drain system, the capacity of which is periodically exceeded. Wastewater generated by the proposed project would enter the City's CSS, which is also at capacity in the area. Any additional flows to these systems could result in overflows, which would be considered a **potentially significant impact** and will be discussed in the EIR.

- b,d. See item a,c,e for the discussion of wastewater facilities. The proposed project would create a demand for water that could exceed available supplies or exceed capacity of the existing infrastructure. This would be considered a **potentially significant impact** and will be discussed in the EIR.
- f,g. The proposed project would generate solid waste that could exceed the capacity of a landfill. This would be considered a **potentially significant impact** and will be discussed in the EIR.

			Potentially	Less Than Significant		
Issues			Significant Impact	With Mitigation Incorporated	Less-Than- Significant Impact	No Impact
17.		NDATORY FINDINGS OF NIFICANCE.				
	a.	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			•	
	b.	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	•			
	C.	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	•			

- a. As indicated in the biological discussion, there are no anticipated potential impacts resulting in degradation of the quality of the environment.
- b. It is anticipated that there may be cumulatively considerable impacts associated with the proposed project, which will be discussed in the EIR.
- Potential adverse environmental effects have been identified in this environmental checklist relating to Aesthetics, Air Quality, Cultural Resources, Land Use and Planning, Noise, Public Services, Transportation, and Utilities.

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NOTICE OF PREPARATION (NOP) AND NOP RESPONSES

NOP December 29, 2004



DEVELOPMENT SERVICES DEPARTMENT

CITY OF SACRAMENTO CALIFORNIA

1231 I STREET ROOM 300 SACRAMENTO, CA 95814-2998

ENVIRONMENTAL PLANNING SERVICES 916-808-7856 FAX 916-264-7185

DATE:

December 29, 2004

TO:

Interested Persons

FROM:

James Regan-Vienop

Environmental Planning Services

SUBJECT:

NOTICE OF PREPARATION FOR AN ENVIRONMENTAL IMPACT REPORT

(EIR) FOR THE TOWERS ON CAPITOL MALL PROJECT (P04-221)

PUBLIC REVIEW PERIOD: January 3, 2005 through February 2, 2005

Introduction

The City of Sacramento, Development Services Department, will be the *Lead Agency* for the preparation of an Environmental Impact Report (EIR) for The Towers on Capitol Mall project (proposed project). The California Environmental Quality Act (CEQA), Section 15082, states that once a decision is made to prepare an EIR, the lead agency must prepare a Notice of Preparation (NOP) to inform all responsible agencies of that decision. The purpose of the NOP is to provide responsible agencies and interested persons with sufficient information describing the proposed project and its potential environmental effects to enable them to make a meaningful response as to the scope and content of the information to be included in the EIR.

The NOP is being released to request comments on the scope of the EIR for the proposed project. The responses to this NOP will help the City of Sacramento determine the scope of the EIR and ensure an appropriate level of environmental review.

The EIR will evaluate the potential environmental impacts of the proposed project and recommend mitigation measures, as required. The EIR will provide a project-specific evaluation of the environmental effects of the Towers on Capitol Mall project, pursuant to Section 15161 of the State CEQA Guidelines.

Project Location

The Towers on Capitol Mall project is located in the Central Business District of downtown Sacramento (see figure 1). The 2.42-acre project site is at 301 Capitol Mall (occupying the block between 3rd and 4th, Capitol Mall and L streets, see figure 2). The project site is within a Special Planning District and is zoned for general commercial use (C-3-SPD). There is an existing four-story office building on the site that would be demolished to accommodate the proposed project.

Commercial and office uses surround the site to the north, south, and east. An undeveloped lot is west of the project site.

Project Description

The proposed project is a 1,800,000-square foot, mixed-use, residential project. The proposed project includes two high-rise towers on a ten-story podium with a total height of up to 615 feet (see figure 3). The podium would contain 85,000 square feet of retail use, 40,000 square feet of gym use, 10,000 feet of spa use, a roof top swimming pool, 830 above-grade parking spaces, and 270 belowgrade parking spaces.

Tower One would be 52 stories (including the podium floors) with a full-service, 276-key hotel on floors 11 through 22 (which includes ballrooms, meeting rooms, restaurant, lounge, and kitchen), and 300 condominium units on floors 23 through 51 (with penthouse units on the 52nd floor), and, potentially, a heliport. Tower Two would also be 52 stories high and would house 400 condominiums on floors 10 through 51 (with penthouse units on the 52nd floor).

A three-lane porte-cochere would provide access along 3rd Street, with a major gateway entry at the southeast corner of the site (the corner of 3rd and Capitol Streets). Access to the parking garages (above and below grade) and loading dock would be from L Street. Pedestrian and visitor access to Tower Two would be on 4th Street.

The proposed project could require the following actions:

- Special Permit: To allow residential use in the Central Business District (CBD).
- Special Permit: To permit building heights in excess of standards for General Commercial District (C-3-SPD).
- Design Review: Reduction in setback guidelines to allow room for required parking and building tower view adjacency offsets. The Tower Two setback would be reduced to 120 feet from 140 feet, and portions of the 15-foot setback along 3rd and 4th would be reduced to accommodate dimensional requirements for podium parking levels and Tower Two floor plates.
- Certification of the EIR.

Environmental Effects

The technical sections of the Draft EIR will describe the existing conditions in the proposed project area and surrounding lands. Relevant federal, State and local laws and regulations, including City of Sacramento General Plan policies, will be summarized. The methods and standards of significance used for impacts of the project will be described in each of the technical sections of the EIR, including any assumptions that are important to understand the conclusions of the analysis. The standards for determining impact significance will be based on existing State and federal rules, regulations and laws, City ordinances and policies, and past practices. The standards will be used both to determine whether an impact is significant and the effectiveness of recommended mitigation. Any feasible mitigation measures will be identified for each significant impact. The description of mitigation measure will identify the specific actions to be taken, the timing of the action, and the parties responsible for implementation of the measure.

At this time, it is anticipated that the following issue areas will be addressed in the EIR:

- Aesthetics
- Air Quality

- Cultural Resources
- Geology & Soils
- Hazards & Hazardous Materials
- Hydrology & Water Quality
- Land Use & Planning
- Noise
- Population & Housing
- Public Services
- Recreation
- Transportation & Traffic
- Utilities & Service Systems
- Mandatory Findings of Significance

During the scoping process, it may be determined that the proposed project would have a less-than-significant impact in one or more of the technical issue areas. Those technical discussions will be included in an Initial Study, which will be attached as an appendix to the Draft EIR. At this time, it is anticipated that the following issue areas will be addressed in the Initial Study:

- Agricultural Resources
- Biological Resources
- Mineral Resources

Alternatives

The EIR will examine a range of feasible alternatives to the proposed project. A discussion of alternatives that were considered but rejected without full analysis will also be included. At this time, it is anticipated that the alternatives would include:

- No Project Alternative
- Reduced Intensity Development /Single Tower Alternative
- Reduced Height Alternative
- Off-Site Alternative

Submitting Comments

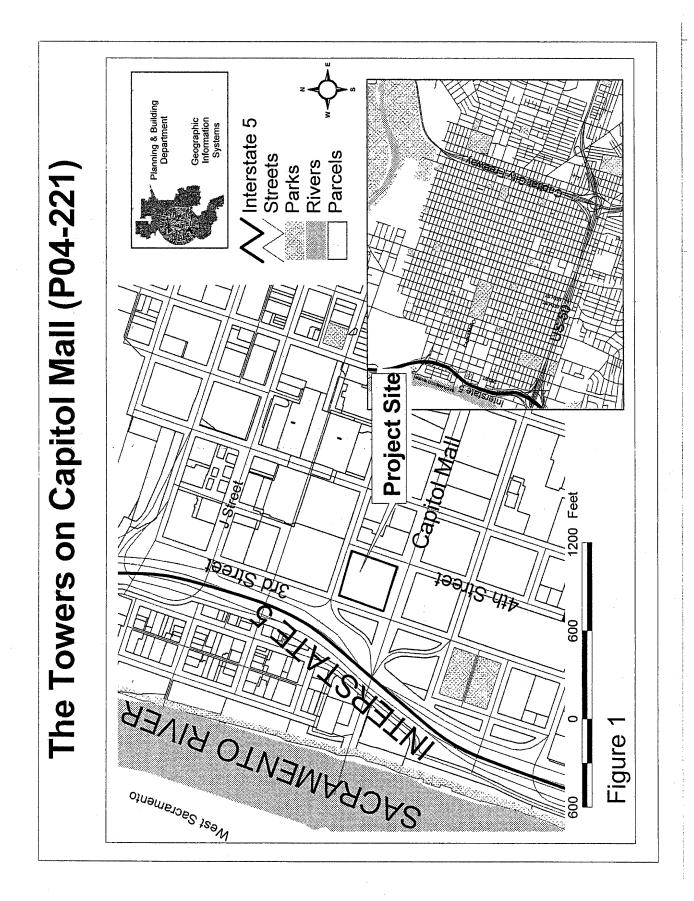
To ensure that the full range of project issues of interest to responsible government agencies and the public are addressed, comments and suggestions are invited from all interested parties. Written comments or questions concerning the EIR for the proposed project should be directed to the following address by 5:00 p.m. on February 2, 2005:

City of Sacramento, Development Services Department Attn: James Regan-Vienop 1231 I Street, Room 300 Sacramento, CA 95814 (916) 808-7856 (916) 264-7185 (fax)

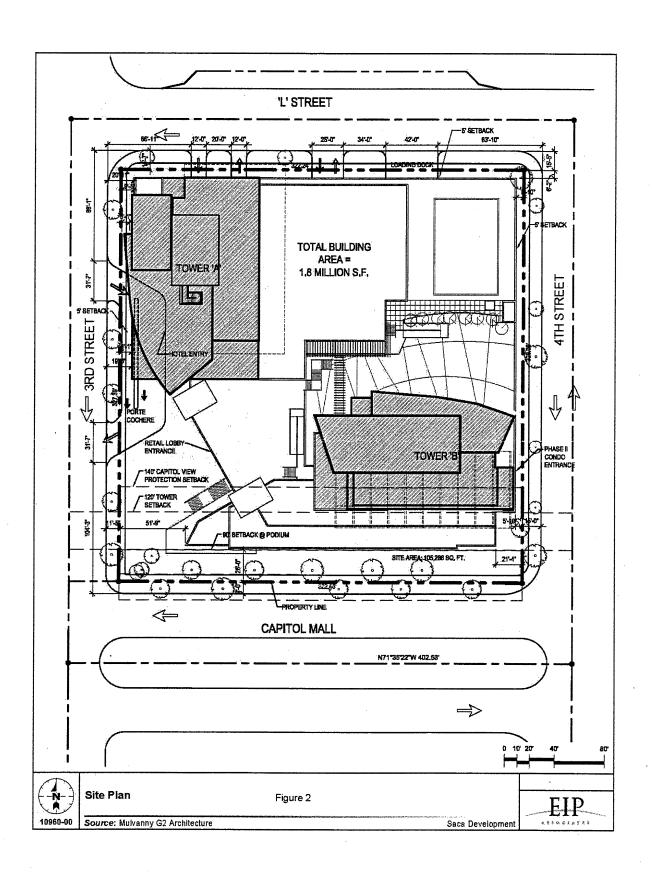
All comments must include full name and address in order for staff to respond appropriately.

A public scoping meeting will also be held – See attached Flyer. Responsible agencies and members of the public are invited to attend and provide input on the scope of the EIR.

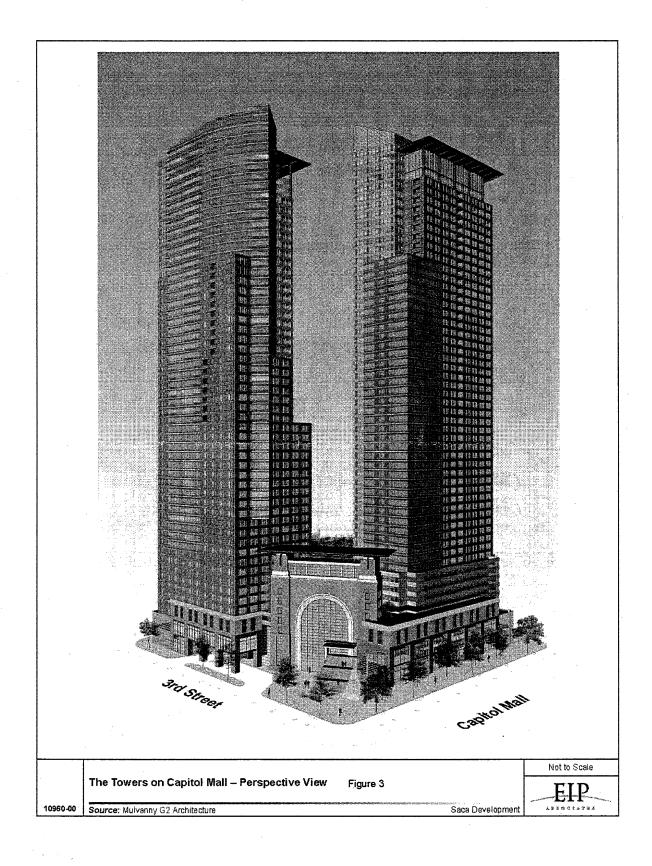
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Errata to the NOP February 2, 2005



DEVELOPMENT SERVICES
DEPARTMENT

CITY OF SACRAMENTO

CALIFORNIA

1231 I STREET ROOM 300 SACRAMENTO, CA 95814-2998

ENVIRONMENTAL PLANNING SERVICES 916-808-2762 FAX 916-264-7185

February 2, 2005

TO:

Interested Persons

FROM:

Dana Allen, Environmental Planning Services

SUBJECT:

ERRATA TO THE NOTICE OF PREPARATION FOR AN ENVIRONMENTAL IMPACT REPORT (EIR)

FOR THE TOWERS ON CAPITOL MALL PROEJCT (P04-221)

PUBLIC REVIEW

PERIOD:

January 3, 2005 through February 2, 2005 – extended to February 11, 2005

The City of Sacramento, Development Services Department received additional information related to the proposed project. The additional information was not included in the previously released Notice of Preparation on December 29, 2004. This additional information will be evaluated for potential environmental impacts in conjunction with the project information previously released in the NOP (December 29, 2004).

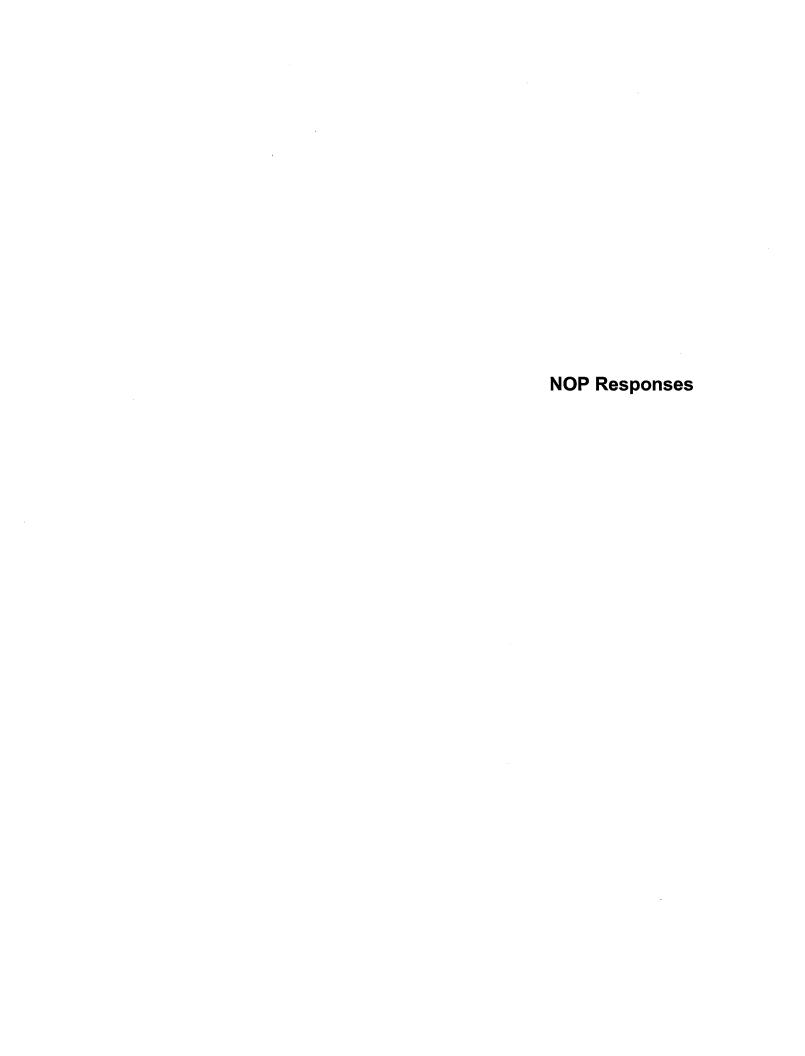
The proposed project is proposing to change the one-way traffic direction of 3rd Street between L Street and Capitol Mall to two-way. Additionally, the project is proposing to have left turn traffic movements in the eastbound direction of Capitol Mall at the intersection of 3rd and 4th Streets.

Comments on the additional information should be submitted NO LATER THAN 5:00 P.M., Friday, February 11, 2005. Written comments should be submitted to:

Dana Allen, Associate Planner City of Sacramento, Development Services Department Environmental Planning Services 1231 I Street, Room 300 Sacramento, CA 95814

Or: FAX#: (916) 264-7185

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DEPARTMENT OF TRANSPORTATION

DISTRICT 3 – Sacramento Area Office VENTURE OAKS, MS 15 P. O. BOX 942874 SACRAMENTO, CA 94274-0001 PHONE (916) 274-0614 FAX (916) 274-0648 TTY (530) 741-4501



Flex your power! Be energy efficient!

January 6, 2005

04SAC0176 03-SAC-275 PM 2.250 The Towers on Capitol Mall Universal Development Application

Ms. Stacia Cosgrove City of Sacramento 1231 I Street, Room 300 Sacramento, CA 95814

Dear Ms. Cosgrove:

Thank you for the opportunity to review and comment on the Towers on Capitol Mall. Our comments are as follows:

- A) Caltrans commends the City for a mixed-use project of this scale in Downtown Sacramento. However, we anticipate that this project will have impacts on the State highway system.
- B) A Traffic Impact Study (TIS) should be prepared to assess the project's impacts to State Route 275 and adjacent offramps and ramp intersections for Interstate 5 at J and Q Streets. During the scoping phase of the TIS, we would appreciate the opportunity to work with your staff to ensure that our concerns are addressed prior to the study's approval. The "Guide for the Preparation of Traffic Impact Studies" can be found at:

http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf, and can be used as reference.

- The TIS should incorporate the following scenarios:
 - Existing conditions without the project
 - Existing conditions plus the project
 - Cumulative conditions (without the project)
 - Cumulative conditions (with project build-out)
- The traffic analyses should provide a Level of Service (LOS) analysis for the interchange freeway ramps and ramp terminal intersections. A merge/diverge analysis should be performed for freeway and ramp

junctions and all analysis should be based on AM and PM peak hour volumes. The analysis should include the (individual, not averaged) LOS and traffic volumes applicable to all intersection road approaches and turn movements. The procedures contained in the Year 2000 Highway Capacity Manual should also be used as a guide for the traffic study.

- C) Any work performed within State right of way will require an encroachment permit. For permit assistance, please contact Bruce Capaul at (530) 741-4408.
- D) The construction activities associated with this project will likely impact State Route 275 and Interstate 5's mainline and ramps. Therefore, a Traffic Management Plan should be develop during the project development process and implemented during the project's construction phase.

Please provide our office with copies of any further action regarding the Towers on Capitol Mall. With the possible impacts that this project may have on State owned and operated transportation facilities, we would appreciate the opportunity to be involved throughout your project development process. If you have any questions regarding these comments, please contact Marlon Flournoy at (916) 274-0596.

Sincerely,

KATHERINE EASTHAM, Chief

Office of Transportation Planning - Southwest and East

Ms. Cosgrove 1/6/2005 PAGE 3

bc:

John Holzhauser, Office of Traffic Operations, Sacramento Mel Laraway, Office of Traffic Operations, Sacramento Marlon Flournoy, Transportation Planning – Southwest Jeff Pulverman, Office of Transportation Planning Ken Champion, Office of Transportation Planning - Southwest

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DEPARTMENT OF TRANSPORTATION

DIVISION OF AERONAUTICS – M.S.#40 1120 N STREET P. O. BOX 942873 SACRAMENTO, CA 94273-0001 PHONE (916) 654-4959 FAX (916) 653-9531 TTY (916) 651-6827



January 20, 2005

Mr. James Regan-Vienop City of Sacramento 1231 I Street, Room 300 Sacramento, CA 95814

Dear Mr. Vienop:

Re: City of Sacramento's Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR), Towers at Capitol Mall Project (P04-221): SCH# 2004122137

The California Department of Transportation (Caltrans), Division of Aeronautics, reviewed the above-referenced document with respect to airport-related noise and safety impacts and regional aviation land use planning issues pursuant to the California Environmental Quality Act (CEQA). The Division of Aeronautics has technical expertise in the areas of airport operations safety and airport land use compatibility. We are a funding agency for airport projects and we have permit authority for public and special use airports and heliports. We offer the following comments for your consideration.

- 1. The proposal is for two 52-story 615-feet tall high-rise towers on Capitol Mall between 3rd and 4th Streets in downtown Sacramento. Tower One will have a 276-key hotel on floors 11-22 (which includes ballrooms, meeting rooms, restaurant, lounge, and kitchen), and 300 condominium units on floors 23-51 (with penthouse units on the 52nd floor), and "potentially a heliport." Tower Two will have 400 condominiums on floors 10-51 (with a penthouse on the 52nd floor). Both towers will be constructed on a ten-story "podium" that will include 85,000 square feet of retail use, 40,000 square feet of gym se, 10,000 feet of spa use, a rooftop swimming pool, 830 above-grade parking spaces and 270 below-grade parking spaces.
- 2. The heliport, if constructed, may require a State Heliport Permit from the Division of Aeronautics. Heliports that are required by building code as an Emergency Use Facility (i.e. to be used only for emergency medical or evacuation purposes) are exempt from the State's heliport permit requirements. The California Code of Regulations, Section 3527 defines an Emergency Use Facility to be, "An area for accommodating helicopters in support of emergency public safety operations, but is not used as a heliport for any other purpose."
- 3. The Public Utility Code, Section 21663, states in part that it is unlawful for any person to operate an airport (or heliport) unless an appropriate airport (or heliport) permit required by rule of the department (Caltrans) has been issued by the department. The Heliport Site Approval Permit-Application is available on-line at http://www.dot.ca.gov/hq/planning/aeronaut/htmlfile/heliportpermit.php. The heliport owner should also be advised to contact the Division of Aeronautics to obtain additional Heliport Permit related guidance.

- 4. Prior to issuing the State Heliport Permit, the Division of Aeronautics, as Responsible Agency, must ensure that the proposal is in full compliance with CEQA. The issues of primary concern to us include heliport-related noise and safety impacts on the surrounding community. To ensure that the community will not be adversely impacted by helicopter operations, flight paths should avoid noise-sensitive and people intensive uses. Environmental documentation should include diagrams showing the proposed landing site and the approach/departure flight paths. The diagrams should also depict the proximity of the proposed flight paths to any existing or proposed noise sensitive or people intensive uses. Consideration given to the issue of compatible land uses in the vicinity of a heliport should help to relieve future conflicts between the heliport and its neighbors.
- 5. Public Utilities Code, Section 21659, "Hazards Near Airports Prohibited" prohibits structural hazards near airports. To ensure compliance with Federal Aviation Regulation, Part 77, "Objects Affecting Navigable Airspace," submission of a Notice of Proposed Construction or Alteration (Form 7460-1) to the Federal Aviation Administration (FAA) will be required. For further technical information, please refer to the FAA's web site at http://www.faa.gov/ats/ata/ATA400/oeaaa.html.
- 6. Please note the Federal Aviation Administration (FAA) will also require the filing of a Notice of Landing Area Proposal (Form 7480-1). A copy of the form is available on the FAA website at http://www.faa.gov/ARP/ane/forms/7480-1.pdf.

These comments reflect the areas of concern to the Caltrans Division of Aeronautics with respect to airport-related noise and safety impacts and regional airport land use planning issues. We advise you to contact our district office concerning surface transportation issues.

The proposal should also be submitted to the Sacramento County Airport Land Use Commission (ALUC) represented by the Sacramento Area Council of Governments (SACOG) for review.

Thank you for the opportunity to review and comment on this proposal. If you have any questions, please call me at (916) 654-5314.

Sincerely,

SANDY HESNARD

Ituain thorn

Aviation Environmental Planner

c: State Clearinghouse, Gregory Chew-SACOG

DEPARTMENT OF TRANSPORTATION

DISTRICT 3 – Sacramento Area Office VENTURE OAKS, MS 15 P. O. BOX 942874 SACRAMENTO, CA 94274-0001 PHONE (916) 274-0614 FAX (916) 274-0648 TTY (530) 741-4501

January 20, 2005

05SAC0003 03-SAC-275 PM 2.250 The Towers on Capitol Mall Notice of Preparation (NOP) SCH# 2004122137

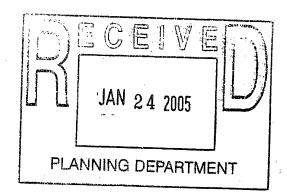
Mr. James Regan-Vienop City of Sacramento 1231 I Street, Room 300 Sacramento, CA 95814

Dear Mr. Regan-Vienop:

Thank you for the opportunity to review and comment on the Towers on Capitol Mall NOP. Our comments are as follows:

- A) Our previous comments dated January 6, 2005 are still valid and are enclosed. As the previous letter states, the Towers on Capitol Mall will require a traffic impact study, encroachment permit, and transportation management plan.
- B) The "potential heliport" on tower one, if used for commercial purposes, will require a Heliport Site Approval Permit. Section 21663 of the Public Utility Code states in part that it is unlawful for any person to operate an airport (or heliport) unless an appropriate airport (or heliport) permit required by rule of the department has been issued by the department. The permit application can be found at http://www.dot.ca.gov/hq/planning/aeronaut/htmlfile/heliportpermit.php. Otherwise, if used for emergency or evacuation purposes, the heliport is exempt from the State's heliport permit requirements. Section 3527 of the California Code of Regulations defines an emergency use facility as "an area for accommodating helicopters in support of emergency public safety operations, but is not used as a heliport for any other purpose".

Please provide our office with copies of any further action regarding the Towers on Capitol Mall. With the possible impacts that this project may have on State owned and operated transportation facilities, we would appreciate the opportunity to be involved





Flex your power! Be energy efficient! Mr. Regan-Vienop 1/20/2005 PAGE 2

throughout your project development process. If you have any questions regarding these comments, please contact Marlon Flournoy at (916) 274-0596.

Sincerely,

KATHERINE EASTHAM, Chief

Office of Transportation Planning – Southwest and East

cc:

State Clearinghouse

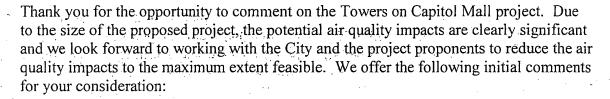


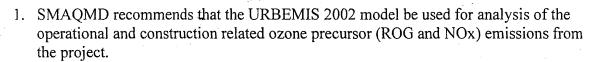
January 5, 2005

Ms Stacia Cosgrove Associate Planner Planning and Building Department City of Sacramento 1231 I Street., Room 300 Sacramento, CA 95814-2998

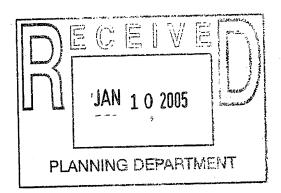
RE: The Towers on Capitol Mall, P04-221 SAC200400313

Dear Ms. Cosgrove:





- 2. SMAQMD expects that construction related NOx emissions will likely exceed the adopted CEQA threshold of significance. Significant emissions are expected in phase 2 of the URBEMIS construction analysis. Equipment inputs for the phase 2 analysis will be particularly important. If you find the emissions to be significant, we recommend that the SMAQMD standard construction mitigation be included as a mitigation measure in the DEIR. Recommended mitigation language can be found at www.airquality.org.
- 3. If the operational aspects of the project are found to exceed the adopted CEQA threshold of significance, we recommend that the project applicant prepare an air quality plan designed to reduce operational emissions by a minimum of 15 percent as a feasible mitigation measure. We would be happy to assist the proponent in choosing appropriate measures for the plan. Preparation of the plan as early as possible is essential to provide the maximum flexibility in the potential measures available for implementation.



Thank you for the opportunity to comment on this project. If you have any questions regarding these comments, please contact me at 916.874.4885 or jborkenhagen@airquality.org.

Sincerely,

Jeane Borkenhagen

Jeane Bohenhagen

Mobile Source Division

cc:

Ron Maertz

RECEIVED

FEB 1 8 2005

EIP Associates

Larry Greene AIR POLLUTION CONTROL OFFICER

February 8, 2005

Mr Jim Regan-Vienop Development Services Department Environmental Planning Services City of Sacramento 1231 1 Street., Room 300 Sacramento, CA 95814-2998

RE: Notice of Preparaton for and EIR for The Towers on Capitol Mall Project, P04-221
SAC200400313B

Dear Mr Regan-Vienop:

Thank you for the opportunity to comment on this Notice of Preparation for the EIR for the Towers on Capitol Mall project. Due to the size of the proposed project, the potential air quality impacts will be clearly significant and we look forward to working with the City and the project proponents to reduce the air quality impacts to the maximum extent feasible. We offer the following initial comments for your consideration:

- 1. SMAQMD recommends that the URBEMIS 2002 model be used for analysis of the operational and construction related ozone precursor (ROG and NOx) emissions from the project.
- 2. SMAQMD expects that construction related NOx emissions will likely exceed the adopted CEQA threshold of significance. Significant emissions are expected in phase 3 of the URBEMIS construction analysis. Equipment inputs for the phase 3 analysis will be particularly important as the default values in URBEMIS will probably need to be replaced. If you find the emissions to be significant, we recommend that the SMAQMD standard construction mitigation be included as a mitigation measure in the DEIR. Recommended mitigation language can be found at www.airquality.org.
- 3. If the operational aspects of the project are found to exceed the adopted CEQA threshold of significance, we recommend that the project applicant prepare an air quality plan designed to reduce operational emissions by a minimum of 15 percent as a feasible mitigation measure. We would be happy to assist the proponent in choosing appropriate measures for the plan. Preparation of the plan as early as

possible is essential to provide the maximum flexibility in the potential measures available for implementation.

Thank you for the opportunity to comment on this project. If you have any questions regarding these comments, please contact me at 916.874.4885 or jborkenhagen@airquality.org.

Sincerely,

Jeane Borkenhagen
Mobile Source Division

cc: Ron Maertz





January 21, 2005 E225.000

10545 Armstrong Avenue

Mather, CA 95655

Tele: [916] 876-6000

Fax: [916] 876-6160

Website: www.srcsd.com

James Regan-Vienop
City of Sacramento Planning Division
1231 I Street, Room 300
Sacramento, CA 95814

Dear Mr. Regan-Vienop:

Subject:

Notice of Preparation of an Environmental Impact Report (EIR) for the Towers on Capitol Mall Project

Control No. P04-221

County Sanitation District 1 (CSD-1) and Sacramento Regional County Sanitation District (SRCSD) have reviewed the Notice of Preparation (NOP) of the Environmental Impact Report (EIR) for the subject project. The project is within the boundary limits of SRCSD and the Urban Services Boundary (USB). The project is outside the boundary of CSD-1. SRCSD facilities do not exist within the project area and the master plan does not propose any projects within the area. Therefore, we do not foresee any impact to the SRCSD facilities.

If you have any questions regarding these comments, please call me at (916) 876-6094.

Sincerely,

Wendy Haggard, P.E.

Department of Water Quality

Development Services

Board of Directors

County of Sacramento

Roger Dickinson

Illa Collin

Muriel P. Johnson

Roger Niello

Don Nottoli

City of Citrus Heights

Jeannie Bruins

City of Elk Grove

Sophia Scherman

City of Folsom

Kerri Howell

City of Rancho Cordova

Dan Skoglund

City of Sacramento

Heather Fargo

City of West Sacramento

Christopher Cabaldon

County of Yolo

Mike McGowan

Cheryl Creson
Agency Administrator

Robert F. Shanks

District Engineer

Marcia Maurer Chief Financial Officer

Wendell H. Kido District Manager

Mary K. Snyder Collection Systems Manager

Stan R. Dean Plant Manager WH: cc

cc:

Maria Cablao

Steve Hong (Infrastructure Finance Section) (01-304)

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William D. Kopper
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417 E Street
Davis, CA 95616
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Paralegals Kristin Rauh Jan Scott

January 5, 2005

Fax (530) 758-2844

City of Sacramento Environmental Planning Services. 1231 I Street, Room 300 Sacramento, CA 95814-2998

JAN 06 2005

PLANNING DEPARTMENT

Re: Notice of preparation for an Environmental Impact Report Towers on Capitol Mall Project (PO4-221)

Dear Staff:

Thank you for the letter dated December 29, 2004 regarding preparation of the EIR for the Towers Project. I ask that the Environmental Impact Report include a discussion of the following issues:

- 1) The aesthetic impact of the Towers Project from the viewpoint of Old Sacramento;
- 2) A discussion of the traffic impacts of this project on the I-80 extension west of the Tower Bridge, traffic impacts on access to Interstate 5, and traffic impacts on local streets;
- 3) Energy consumption impacts of this project, and a discussion of all feasible energy conservation technologies for the Towers:
- 4) A discussion of incorporating solar electric cells on the surface of the building to help offset the enormous use of electricity by a project of this type

Thank you for your consideration of these matters.

Sincerely,

WILLIAM D. KOPPER

WDK:js

William D. Kopper

Attorney at Law 417 E Street Davis, CA 95616 (530) 758-0757 Fax (530) 758-2844

> Paralegals Kristin Rauh Jan Scott

February 7, 2005

Dana Allen, Associate Planner City of Sacramento, Development Serv. Environmental Planning Services 1231 I Street, Room 300 Sacramento, CA 95814

Re: Towers of Capitol Mall (PO4-221)

Dear Ms. Allen:

With respect to the request for public input to the Environmental Impact Report, I ask that the City consider the impact of this project on energy use, the creation of air pollution, and the use of water. The City should consider requiring the highest level of sustainability, water efficiency, and energy efficiency. These technologies were implemented in the new Bank of America tower in New York City. I have enclosed several articles that should be addressed in the Environmental Impact Report. The technologies include the following:

- 1) Use of recycled and recyclable building materials;
- 2) Use of filtered under-floor displacement air ventilation;
- 3) Use of double wall technology and use of translucent insulating glass in floor to ceiling windows;
- 4) Provision of a cogeneration plant on site to provide clean, efficient power sources;
- 5) Use of a gray water system to capture and reuse all rain and waste water;
- 6) Use of planted roofs to reduce the heat island effect;
- Use of a thermal storage system to store cold water for daytime cooling to reduce the building's peak demand loads on the City's electrical grid;
- 8) Use of daylight dimming and LED lights to reduce electric usage in the building.

Thank you for your consideration of these matters.

Sincerely,

WILLIAM D. KOPPER

WDK:js

	·		
		,	



AIR QUALITY BACKGROUND DATA/WIND STUDY

		•	
		,	

URBEMIS calculations

			•	
	•			

URBEMIS 2002 For Windows 7.5.0

File Name:
P:\Projects - All Employees\10960-00 The Towers\Matt J\AQ Modeling\URBEMIS\Towers Construction
Project Name:
Project Location:
Con-Road Motor Vehicle Emissions

P:\Projects - All Employees\10960-00 The Towers\Matt J\AQ Modeling\URBEMIS\Towers Construction
And Operation
Lower Sacramento Valley Air Basin
Based on EMFAC2002 version 2.2

SUMMARY REPORT (Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES							
					PM10	PM10	PM10
*** 2006 ***	ROG	NOx	CO	SO2	TOTAL	EXHAUST	DUST
TOTALS (lbs/day,unmitigated)	120.52	917.53	892.24	7.19	174.52	41.43	133.09
TOTALS (lbs/day, mitigated)	120.52	730.63	892.24	7.19	174.52	41.43	133.09
					PM10	PM10	PM10
*** 2007 ***	ROG	NOx	CO	SO2	TOTAL	EXHAUST	DUST
TOTALS (lbs/day,unmitigated)	120.37	877.30	919.26	0.00	38.18	37.88	0.30
TOTALS (lbs/day, mitigated)	120.37	698.59	919.26	0.00	38.18	37.88	0.30
					PM10	PM10	PM10
*** 2008 ***	ROG	NOx	CO	S02	TOTAL	EXHAUST	DUST
TOTALS (lbs/day,unmitigated)	909.08	838.23	969.87	0.00	34.96	34.36	0.60
TOTALS (lbs/day, mitigated)	909.08	667.71	969.87	0.00	34.96	34.36	0.60
AREA SOURCE EMISSION ESTIMATES							
	ROG	NOx	CO	SO2	PM10		
TOTALS (lbs/day,unmitigated)	35.17	7.94	5.64	0.00	0.02		
1022102 (100, 100g, mana 01g 0000)							
OPERATIONAL (VEHICLE) EMISSION	ESTIMATES						
·	ROG	NOx	CO	SO2	PM10		
TOTALS (lbs/day.unmitigated)	78.96	87.64	860.75	0.47	80.33		
TOTALS (lbs/day, mitigated)	73.27	79.85	784.61	0.42	73.18		
SUM OF AREA AND OPERATIONAL EMI	SSION ESTIN	MATES					
	ROG	NOx	CO	S02	PM10		
TOTALS (lbs/day,unmitigated)	114.13	95.58	866.39	0.47	80.35		
Both Area and Operational Miti	gation must	be turned	on to get a	combined	l mitigated	total.	
	-		_		_		

URBEMIS 2002 For Windows 7.5.0

 $\label{lem:projects} P:\Projects - All Employees \end{construction} The Towers \end{construction} Matt JAQ Modeling \end{construction} We will be a substruction of the Towers \end{construction} The Towers \end{cons$ File Name: Project Name: Project Location: Lower Sacramento Valley Air Basin On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT (Pounds/Day - Summer)

Construction Start Month and Year: June, 2006 Construction Duration: 27 Total Land Use Area to be Developed: 5 acres Maximum Acreage Disturbed Per Day: 5 acres Single Family Units: 0 Multi-Family Units: 700 Retail/Office/Institutional/Industrial Square Footage: 273000

CONSTRUCTION	EMISSION	ESTIMATES	UNMITTICATED	(lbs/day)

CONDITIONING BELLEVIA	TDD OIVILLIA	011122 (120	, 441,		PM10	PM10	PM10
Source	ROG	NOx	CO	SO2	TOTAL	EXHAUST	DUST
*** 2006***							
Phase 1 - Demolition Emissio	ns						
Fugitive Dust	-	-	-	_	131.25	_	131.25
Off-Road Diesel	5.75	43.34	42.90	_	1.94	1.94	0.00
On-Road Diesel	24.74	410.17	91.24	7.19	12.43	10.59	1.84
Worker Trips	0.07	0.08	1.47	0.00	0.00	0.00	0.00
Maximum lbs/day	30.56	453.59	135.61	7.19	145.62	12.53	133.09
Phase 2 - Site Grading Emiss	ions						
Fugitive Dust	_	_	_	_	50.00	_	50.00
Off-Road Diesel	9.02	62.74	71.65	_	2.75	2.75	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.02	0.01	0.27	0.00	0.00	0.00	0.00
Maximum lbs/day	9.04	62.75	71.92	0.00	52.75	2.75	50.00
Phase 3 - Building Construct	ion						
Bldg Const Off-Road Diesel	118.30	916.20	864.02	_	41.41	41.41	0.00
Bldg Const Worker Trips	2.22	1.33	28.22	0.00	0.32	0.02	0.30
Arch Coatings Off-Gas	0.00			-	-	-	0.50
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	0.00	-	-	0.00	0.00	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	_	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	120.52	917.53	892.24	0.00	41.73	41.43	0.00
Maximum lbs/day	120.52	917.53	892.24	0.00	41./3	41.43	0.30
Max lbs/day all phases	120.52	917.53	892.24	7.19	174.52	41.43	133.09
*** 2007***							
Phase 1 - Demolition Emissic	ons						
Fugitive Dust		.		_	0.00	~	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emiss	sions						
Fugitive Dust	_	-	_	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construct	cion						
Bldg Const Off-Road Diesel	118.30	876.05	892.74	_	37.86	37.86	0.00
Bldg Const Worker Trips	2.06	1.26	26.52	0.00	0.32	0.02	0.30
Arch Coatings Off-Gas	0.00		_	_	_	-	_
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	_	-	_	_	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	_	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	120.37	877.30	919.26	0.00	38.18	37.88	0.30
Max lbs/day all phases	120.37	877.30	919.26	0.00	38.18	37.88	0.30

Phase 1 - Demolition Emissio	ns						
Fugitive Dust	_	-		_	0.00	_	0.00
Off-Road Diesel	0.00	0.00	0.00	_	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emiss	ions						
Fugitive Dust	_	-	-	_	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	_	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construct	ion						
Bldg Const Off-Road Diesel	118.30	835.89	920.43	-	34.31	34.31	0.00
Bldg Const Worker Trips	1.90	1.17	24.72	0.00	0.32	0.02	0.30
Arch Coatings Off-Gas	786.98	-	-	_	-		_
Arch Coatings Worker Trips	1.90	1.17	24.72	0.00	0.32	0.02	0.30
Asphalt Off-Gas	0.00	-	_	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	909.08	838.23	969.87	0.00	34.96	34.36	0.60
Max lbs/day all phases	909.08	838.23	969.87	0.00	34.96	34.36	0.60

Phase 1 - Demolition Assumptions Phase 1 - Demonstration satisfy the Start Month/Year for Phase 1: Jun '06
Phase 1 Duration: 1.3 months
Building Volume Total (cubic feet): 2500000
Building Volume Daily (cubic feet): 312500
On-Road Truck Travel (VMT): 17361

Off-Road Equipment

No.	Туре	Horsepower	Load Factor	Hours/Day
1	Cranes	190	0.430	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 2 - Site Grading Assumptions Start Month/Year for Phase 2: Jul '06 Phase 2 Duration: 2.7 months On-Road Truck Travel (VMT): 0

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Off Highway Trucks	417	0.490	8.0
1.	Rubber Tired Dozers	352	0.590	8.0

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Oct '06
Phase 3 Duration: 23 months
Start Month/Year for SubPhase Building: Oct '06

SubPhase Building Duration: 23 months

Off-Road Equipment

No.	Туре	Horsepower	Load Factor	Hours/Day
20	Concrete/Industrial saws	84	0.730	8.0
39	Other Equipment	190	0.620	8.0
20	Rough Terrain Forklifts	94	0.475	8.0

Start Month/Year for SubPhase Architectural Coatings: Jun '08 SubPhase Architectural Coatings Duration: 2.3 months

SubPhase Asphalt Turned OFF

Page: 4

AREA SOURCE EMISSION ESTIMATE	S (Summer	Pounds per	Day, Unmiti	.gated)	
Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.60	7.92	3.30	-	0.01
Wood Stoves - No summer emis	sions				
Fireplaces - No summer emiss	ions				
Landscaping	0.33	0.02	2.34	0.00	0.01
Consumer Prdcts	34.25	-	-	-	_
TOTALS(lbs/day,unmitigated)	35.17	7.94	5.64	0.00	0.02

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	S02	PM10
Condo/townhouse high rise	30.05	27.84	284.31	0.15	25.89
Racquetball/health	9.98	12.80	123.66	0.07	11.67
Hotel	17.54	19.14	184.91	0.10	17.45
Strip mall	21.39	27.85	267.87	0.15	25.32
TOTAL EMISSIONS (1bs/day)	78.96	87.64	860.75	0.47	80.33

Does not include correction for passby trips. Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Condo/townhouse high rise	4.18 trips / dwelling units	700.00	2,926.00
Racquetball/health	32.93 trips / 1000 sq. ft.	50.00	1,646.50
Hotel	8.92 trips / rooms	276.00	2,461.92
Strip mall	42.94 trips / 1000 sq. ft.	85.00	3,649.90

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lb	s 15.10	3.30	94.00	2.70
Light Truck 3,751- 5,75	0 16.10	1.90	96.90	1.20
Med Truck 5,751-8,50	0 7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,00	0 1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,00	0 0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,00	0 1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,00	0 0.90	0.00	11.10	88.90
Line Haul > 60,000 lb	s 0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

riaver conditions		Residential			Commercial	
Urban Trip Length (miles) Rural Trip Length (miles) Trip Speeds (mph) % of Trips - Residential		Home- Shop 3.8 7.1 35.0 21.2	Home- Other 4.6 7.9 35.0 51.5	7.8 14.7 35.0	Non-Work C 4.5 6.6 35.0	fustomer 4.5 6.6 35.0
% of Trips - Commercial (Racquetball/health Hotel Strip mall	by land	use)		5.0 5.0 2.0	2.5 2.5 1.0	92.5 92.5 97.0

Changes made to the default values for Land Use Trip Percentages Changes made to the default values for Construction Phase 1 mitigation measure Off-Road Diesel Exhaust: Use aqueous diesel fuel has been changed from off to on. Phase 1 mitigation measure Off-Road Diesel Exhaust: Use diesel oxidation catalyst has been changed from off to on. Phase 2 mitigation measure Off-Road Diesel Exhaust: Use aqueous diesel fuel has been changed from off to on. Phase 2 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst has been changed from off to on. Phase 3 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst has been changed from off to on. Phase 3 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst has been changed from off to on. Phase 3 mitigation measure Off-Road Diesel Exhaust: Optimum conditions has been changed from off to on. Phase 3 mitigation measure Off-Road Diesel Exhaust: Optimum conditions has been changed from off to on. Phase 3 mitigation measure On-Road Diesel Exhaust: Optimum conditions has been changed from off to on. Changes made to the default values for Area The wood stove option switch changed from on to off. The fireplcase option switch changed from on to off. Changes made to the default values for Operations The operational emission year changed from 2004 to 2007. The double counting internal work trip limit changed from to 278.419. The double counting shopping trip limit changed from to 139.2095. The double counting other trip limit changed from to 1506.89. The travel mode environment settings changed from both to: none The default/nodefault travel setting changed from nodefault to: nodefault Side Walks/Paths: No Sidewalks changed to: Side Walks/Paths: Complete Coverage Street Trees Provide Shade: No Coverage changed to: Street Trees Provide Shade: Moderate Coverage Pedestrian Circulation Access: No Destinations changed to: Pedestrian Circulation Access: Some Destinations Visually Interesting Uses: No Uses Within Walking Distance changed to: Visually Interesting Uses: Large Number and Variety Street System Enhances Safety: No Streets changed to: Street System Enhances Safety: Few Streets Pedestrian Safety from Crime: No Degree of Safety changed to: Pedestrian Safety from Crime: Moderate Degree of Safety Visually Interesting Walking Routes: No Visual Interest changed to: Visually Interesting Walking Routes: High Level Transit Service: Dial-A-Ride or No Transit Service

changed to: Transit Service: Light Rail/Trolley w/in 1/2 mile

changed to: Uses w/in Cycling Distance: Large Number and Variety

changed to: Interconnected Bikeways: Low Coverage

Uses w/in Cycling Distance: No Uses w/in Cycling Distance

changed to: Safe Vehicle Speed Limits: Some Destinations

Interconnected Bikeways: No Bikeway Coverage

Safe Vehicle Speed Limits: No Routes Provided

Phase 1 - Demolition Emission	ns						
Fugitive Dust	_	_	_	_	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	_	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emiss	ions						
Fugitive Dust		_	_	_	0.00	_	0.00
Off-Road Diesel	0.00	0.00	0.00	_	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construct	ion						
Bldg Const Off-Road Diesel	118.30	835.89	920.43		34.31	34.31	0.00
Bldg Const Worker Trips	1.90	1.17	24.72	0.00	0.32	0.02	0.30
Arch Coatings Off-Gas	786.98		24.72	-	-	-	-
Arch Coatings Worker Trips	1.90	1.17	24.72	0.00	0.32	0.02	0.30
Asphalt Off-Gas	0.00			-	-	_	-
Asphalt Off-Road Diesel	0.00	0.00	0.00		0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	909.08	838.23	969.87	0.00	34.96	34.36	0.60
Max lbs/day all phases	909.08	838.23	969.87	0.00	34.96	34.36	0.60
:							
Phase 1 - Demolition Assumpt							
Start Month/Year for Phase 1	: Jun '06						
Phase 1 Duration: 1.3 months							
Building Volume Total (cubic							
Building Volume Daily (cubic		.2500					
On-Road Truck Travel (VMT):	17361						
Off-Road Equipment							
No. Type			csepower	Load Fact		rs/Day	
2			100	0 420		0 0	

No.	Туре	Horsepower	Load Factor	Hours/Day
1	Cranes	190	0.430	8.0
1	Rubber Tired Dozers	352	0.590	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 2 - Site Grading Assumptions Start Month/Year for Phase 2: Jul '06 Phase 2 Duration: 2.7 months On-Road Truck Travel (VMT): 0 Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Dozers	352	0.590	8.0

Phase 3 - Building Construction Assumptions Start Month/Year for Phase 3: Oct '06 $\,$ Phase 3 Duration: 23 months

Start Month/Year for SubPhase Building: Oct '06

SubPhase Building Duration: 23 months

Off-Road Equipment

OLL ICO	aa bqarpmene			
No.	Туре	Horsepower	Load Factor	Hours/Day
20	Concrete/Industrial saws	84	0.730	8.0
39	Other Equipment	190	0.620	8.0
20	Rough Terrain Forklifts	94	0.475	8.0

Start Month/Year for SubPhase Architectural Coatings: Jun '08 SubPhase Architectural Coatings Duration: 2.3 months

SubPhase Asphalt Turned OFF

•	AREA SOURCE EMISSION ESTIMATES	(Summer	Pounas per	Day, Unmiti	gated)	
	Source	ROG	NOx	CO	S02	PM10
	Natural Gas	0.60	7.92	3.30	_	0.01
	Wood Stoves - No summer emiss	ions				
	Fireplaces - No summer emissi	ons				
	Landscaping	0.33	0.02	2.34	0.00	0.01
	Consumer Prdcts	34.25	-	-	_	_
	TOTALS(lbs/day,unmitigated)	35.17	7.94	5.64	0.00	0.02

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Condo/townhouse high rise	30.05	27.84	284.31	0.15	25.89
Racquetball/health	9.98	12.80	123.66	0.07	11.67
Hotel	17.54	19.14	184.91	0.10	17.45
Strip mall	21.39	27.85	267.87	0.15	25.32
-					
TOTAL EMISSIONS (lbs/day)	78.96	87.64	860.75	0.47	80.33

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Condo/townhouse high rise	4.18 trips / dwelling units	700.00	2,926.00
Racquetball/health	32.93 trips / 1000 sq. ft.	50.00	1,646.50
Hotel	8.92 trips / rooms	276.00	2,461.92
Strip mall	42.94 trips / 1000 sq. ft.	85.00	3,649.90

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lb	s 15.10	3.30	94.00	2.70
Light Truck 3,751- 5,75	0 16.10	1.90	96.90	1.20
Med Truck 5,751-8,50	0 7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,00	0 1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,00	0 0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,00	0 1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,00	0 0.90	0.00	11.10	88.90
Line Haul > 60,000 lb	s 0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

114101 001141010		Residential			Commercial	L
Urban Trip Length (miles) Rural Trip Length (miles) Trip Speeds (mph) % of Trips - Residential		Home- Shop 3.8 7.1 35.0 21.2	Home- Other 4.6 7.9 35.0 51.5	Commute 7.8 14.7 35.0	Non-Work 4.5 6.6 35.0	Customer 4.5 6.6 35.0
% of Trips - Commercial (Racquetball/health Hotel Strip mall	by land	use)		5.0 5.0 2.0	2.5 2.5 1.0	92.5 92.5 97.0

Changes made to the default values for Land Use Trip Percentages

```
Changes made to the default values for Construction
Phase 1 mitigation measure Off-Road Diesel Exhaust: Use aqueous diesel fuel
     has been changed from off to on.
Phase 1 mitigation measure Off-Road Diesel Exhaust: Use diesel oxidation catalyst
    has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use aqueous diesel fuel
     has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst
     has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst
     has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst
     has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Optimum conditions
     has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Optimum conditions
     has been changed from off to on.
Phase 3 mitigation measure On-Road Diesel Exhaust: Optimum conditions
     has been changed from off to on.
Changes made to the default values for Area
The wood stove option switch changed from on to off.
The fireplcase option switch changed from on to off.
Changes made to the default values for Operations
The operational emission year changed from 2004 to 2007.
The double counting internal work trip limit changed from to 278.419.
The double counting shopping trip limit changed from to 139.2095.
The double counting other trip limit changed from to 1506.89.
The travel mode environment settings changed from both to: none
The default/nodefault travel setting changed from nodefault to: nodefault
 Side Walks/Paths: No Sidewalks
      changed to: Side Walks/Paths: Complete Coverage
Street Trees Provide Shade: No Coverage
      changed to: Street Trees Provide Shade: Moderate Coverage
Pedestrian Circulation Access: No Destinations
       changed to: Pedestrian Circulation Access: Some Destinations
Visually Interesting Uses: No Uses Within Walking Distance
      changed to: Visually Interesting Uses: Large Number and Variety
 Street System Enhances Safety: No Streets
      changed to: Street System Enhances Safety: Few Streets
Pedestrian Safety from Crime: No Degree of Safety
       changed to: Pedestrian Safety from Crime: Moderate Degree of Safety
Visually Interesting Walking Routes: No Visual Interest
       changed to: Visually Interesting Walking Routes: High Level
 Transit Service: Dial-A-Ride or No Transit Service
       changed to: Transit Service: Light Rail/Trolley w/in 1/2 mile
 Interconnected Bikeways: No Bikeway Coverage
       changed to: Interconnected Bikeways: Low Coverage
Safe Vehicle Speed Limits: No Routes Provided
```

changed to: Safe Vehicle Speed Limits: Some Destinations

changed to: Uses w/in Cycling Distance: Large Number and Variety

Uses w/in Cycling Distance: No Uses w/in Cycling Distance

Wind Study



PEDESTRIAN WIND ASSESSMENT FOR THE PROPOSED TOWERS ON CAPITOL MALL SACRAMENTO, CALIFORNIA

Project Number:

05-1242

Date:

February 17, 2005

Project Team:

Rowan Williams Davies & Irwin, Inc.

Project Engineer - Hanqing Wu, Ph.D., P.Eng.

Project Manager - Guy Ferguson, P.Eng.

Project Director - Bill Waechter, C.E.T.

Submitted To:

Saca Commercial

cc: Miyamoto International, Inc.

Mulvanny G2

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1. INTRODUCTION

Rowan Williams Davies & Irwin Inc. (RWDI) was retained by Saca Commercial to assess the wind effects on pedestrian areas around the proposed Towers on Capital Mall in Sacramento, California. This assessment is based on the local wind climate, surrounding information, current design of the development, as well as our experience with similar projects and best engineering judgement.

A desk-top analysis, using software developed by RWDI to evaluate wind flow around general building forms, was conducted in combination with local wind data to estimate the potential pedestrian wind conditions. Although this specific development was not modeled in a wind tunnel, the computer analysis was developed from our extensive experience of wind tunnel modelling of similar developments, including projects in Sacramento. To confirm and quantify these estimates, scale model tests in our boundary-layer tunnel facility can be conducted at a more advanced design stage of the proposed development.

2. SITE INFORMATION

Figure 1 shows the layout of the proposed development. The proposed development consists of a large podium and two 52 storey hotel and condominium towers, approximately 577 ft in height. Tower 'A' and the complete podium structure will be constructed in Phase I of the development and Tower 'B' will follow in Phase II. Outdoor pedestrian areas on and around the development site include the entrances to the proposed buildings, sidewalks and the podium terraces.

The proposed development is located on a street block bounded by Capitol Mall to the south, 3rd Avenue to the west, 'L' Street to the north and 4th Avenue to the east. Several tall buildings exist on the south side of Capitol Mall and lower Downtown Plaza buildings situate on the north side of 'L' Street. The proposed development is located on the west edge of downtown Sacramento. To the north and west of the development are Sacramento River and relatively low buildings.



Long-term wind statistics were analysed to determine the local wind climate, using data collected from several meteorological stations in the area, including the Sacramento Executive Airport, Mather Air Force Base, McClellan Air Force Base and Sacramento International Airport. A similar wind directionality was observed between these meteorological stations. Due to the relatively close proximity to the study site, the Sacramento Executive Airport data was chosen for this assessment. Figure 2 shows the directional distributions of wind frequency for the Summer (May through October) and Winter (November through April) seasons, based on the data collected between 1947 and 1999 from the Sacramento Executive Airport.

When all wind records are considered, as indicated by the left wind roses in Figure 2, winds from the south through southwest directions are predominant in the summer. In the winter, winds from the southeast through south, north-northwest and northwest directions are frequent.

Strong winds with a mean speed greater than 20 mph occur at the airport for approximately 2% and 4% of the time during the summer and winter seasons, respectively. The southwest, southsouthwest and north-northwest winds are prevalent for the summer season, and the south-southeast and north-northwest winds for the winter, as demonstrated by the two right-hand wind roses in Figure 2. Winds of such a magnitude may potentially cause uncomfortable or even severe wind conditions.

Based on the above analysis, winds from the south-southeast, west-northwest and southwest directions are considered to be most important in the assessment of pedestrian wind conditions, although other wind directions have also been taken into account in our computer analysis.

3. WIND COMFORT CRITERIA

Pedestrian wind comfort criteria developed at RWDI are used in this assessment. They are categorized by three typical pedestrian activities:

- Sitting: Low wind speeds at which one could read a newspaper without having it blown away. Suitable for outdoor cafes and other sitting areas typically gust speeds up to 11 mph at pedestrian level.
- Standing: Slightly higher wind speeds that would be strong enough to rustle leaves. These winds speeds are typically comfortable at building entrances, bus stops or other areas where people may want to linger but not necessarily sit for extended periods of time typically gust speeds up to 16 mph.
- Walking: Winds that would lift leaves, cause movement to litter, hair and loose clothing. Appropriate for sidewalks, plazas, parks or playing fields where people are more likely to be active and receptive to some wind activity typically gust speeds up to 20 mph.

Wind conditions are considered suitable for sitting, standing or walking if the wind speeds are within the ranges for at least 4 out of 5 days (80% of the time). An **uncomfortable** designation means that the criterion for walking is not satisfied. **Safety** is also considered by the criteria. Excessive gust wind speeds greater than 55 mph can adversely affect a pedestrian's balance and footing. If winds sufficient to affect a person's balance occur more than two times per season, the wind conditions are considered severe. Wind control measures are typically required at locations where winds are rated as uncomfortable or severe.

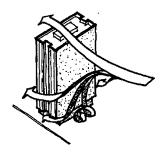


4. ASSESSMENT OF WIND CONDITIONS

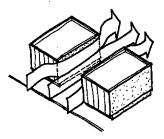
4.1 General

Predicting wind speeds and occurrence frequencies is complicated, involving building geometry, dimensions, orientation, surrounding buildings, upstream terrain and local wind climate. Over the years, RWDI has conducted more than 1200 wind tunnel model studies on pedestrian wind conditions around buildings, yielding a broad knowledge base. This knowledge allows, in many situations, for a screening level computer estimation of pedestrian wind conditions without wind tunnel testing.

Throughout our discussion of anticipated wind conditions, reference will be made to the following generalized wind flows. Large buildings tend to intercept the stronger winds at higher elevations and redirect them down to the ground level. Such a *Downwashing Flow* is the main cause for the pedestrian-level wind acceleration around tall buildings. Also, when two buildings are situated side by side, wind flow tends to accelerate through the gap between the buildings due to the *Channelling Effect*. If these building/wind combinations occur for prevailing winds, there is an increased potential for even higher wind activity.



Downwashing Flow



Channelling Effect

Generally, wind conditions suitable for walking are appropriate for sidewalks; wind speeds comfortable for standing are preferred for building entrances where pedestrians are more apt to linger; and lower wind speeds comfortable for sitting are desired for podium terraces, particularly during the summer season.



The proposed towers are sheltered by the tall surrounding buildings for winds from the southeast through south directions. However, they are exposed to the predominant north-northwest and southwest winds, that may be deflected off the building facade down to the podium and ground levels, resulting in elevated wind activity in localized areas. The large podium of the development is a positive design feature for wind control, as it reduces the potential impact of a downwashing wind flow at ground level. The following discussion describes the predicted wind conditions by area, keyed with a corresponding letter in Figure 1.

4.2 Predicted Wind Conditions

4.2.1 Existing Conditions

The existing building on the study site is relatively low and is sheltered by the taller surroundings for the winds from the northeast through south directions. Trees on and around the study site are also expected to reduce the wind speeds in the area. The site, however, is exposed to the north-northwest winds and the southwest winds may also accelerate around the towers across Capitol Mall and affect the study area. Given the local climate, the overall existing wind conditions on the site are predicted to be comfortable for standing throughout the year. Higher wind activity may exist in localized areas on Capitol Mall sidewalks, due to the effect of a channelling flow (southeast and south winds) between the existing tall buildings on the south side of the street.

4.2.2 Phase I and Phase II Conditions

Phase I of the development consists of Tower 'A' and the general podium areas. Phase II consists of Tower 'B'.



A. Hotel Entry and Porte Cochere

The hotel entry and porte cochere to Tower 'A' is located in an arcade at the southwest corner of the tower, which is considered a positive design feature for wind control (Location A in Figure 1). The proposed podium and the steps at the southwest corner of the development will shelter the entrance area from the southeast and south-southeast winds. The large arcade is expected to reduce the downwashing effect of winds from the southwest direction in the summer and from the north-northwest direction in the winter. It is predicted that the wind conditions immediately adjacent to the hotel entry would be comfortable for standing for both the summer and winter seasons. Slightly higher wind speeds comfortable for walking can be expected in the more exposed porte cochere area. These wind conditions are considered appropriate and would not be significantly affected by the construction of Tower 'B'.

If lower wind speeds are desired for the porte cochere area, wind control measures, such as wind screens or tall hedges, can be included along the west side of the porte cochere area to reduce the direct impact of winds from the north-northwest and southwest directions. In addition, a large canopy may be considered around the southwest corner of Tower 'A' to redirect any downwashing air flow away from the entrance area. The need for these measures can be assessed during a detailed wind tunnel study at a later date.

B. Retail Entrance

The retail entrance is located at the southwest corner of the development and recessed from the towers and podium. The wind activity adjacent to the retail entrance and on the steps (Location B in Figure 1) is likely to be comfortable for standing throughout the year. The sidewalk area at the southwest corner, however, is more exposed, where uncomfortable wind conditions may occur on windy days (see Section C. Sidewalks).

C. Sidewalks

In general, the proposed development is expected to shelter the adjacent sidewalks (Location C in Figure 1) from one or more predominant wind directions, but the two proposed towers may also intercept strong winds at higher elevations and deflect them down to the podium and ground levels. Overall, the resultant wind conditions on the sidewalks around the development are predicted to be comfortable for standing or walking for both summer and winter seasons. Exceptions are sidewalks at the southwest and northwest corners of the development (Locations C_1 and C_2 in Figure 1), where uncomfortable wind conditions may occasionally occur on windy days. This is caused by the predominant winds being deflected off the towers and accelerating around the corners.

If desired, wind control measures, such as landscaping and wind screens, may be considered in the open plaza and on sidewalks around location C1 to reduce the wind activity. For Location C2, potential wind control measures may include, for example, a larger canopy wrapping around the northwest corner of Tower A, or an arcade around the building base as an alternate walkway for pedestrians on windy days. Wind tunnel testing is recommended to better quantify these wind conditions and to determine the need, if any, for wind control measures in these areas.

D. Phase II Condominium Entrance

This entrance to the Phase II condominium is located on 4th Avenue and will be protected by the podium from the north-northwest and southwest winds. As a result, suitable wind conditions are expected for the entrance area in the future.

E. Podium Terraces

At the current design stage, detailed information of pedestrian usage of the podium terraces is not available. The potential wind activity is expected to be higher than that on the ground level and will vary from location to location on the podium. For instance, the southwesterly winds will channel through the gap between the two towers (Location E_1 in Figure 1), resulting in uncomfortable wind conditions from time to time. The southwesterly winds are dominant in the



summer, when the podium terraces are more likely to be frequented. Wind control measures, such as tall wind screens, should be included along the southwest edge of the podium (above the retail entrance), if this area is accessible to the public. Trees may also be beneficial wind control measures to include on the terrace. In addition, uncomfortable wind conditions are also predicted at the northeast portion of the podium (Location E_2 in Figure 1) and around the northeast corners of the proposed towers (E_3) , where we anticipate that wind control measures will be required for these areas to be suitable for passive pedestrian activities.

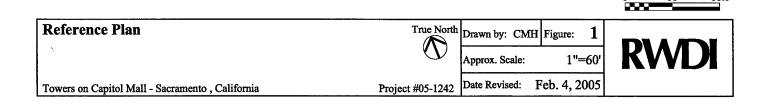
In the areas immediately east of Tower 'A' and north of Tower 'B' (Location E_4 in Figure 1), lower wind speeds are expected due to wind protection provided by the proposed towers. If necessary, these wind speeds can be further reduced by localized landscaping, wind screens and/or trellises.

Wind tunnel testing can assist in quantifying the wind conditions on the podium can also assist with wind control measures.

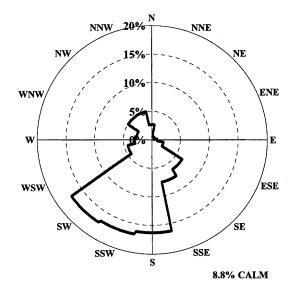
5. SUMMARY

Overall, wind conditions are predicted to be suitable at the building entrances and sidewalks around the proposed development. Acceleration of wind flow is expected in localized areas of sidewalks around the southwest and northwest corners of the proposed development, as well as on the podium level, where uncomfortable wind conditions for amenity spaces are expected in localized areas. Potential wind control concepts that can enhance the wind environment on and around the proposed development have been discussed. It would be appropriate at a more advanced design stage to undertake wind tunnel tests to assess the potential need, if any, for wind control measures. The need for these tests would be of greater importance for the podium terrace and associated amenity spaces.

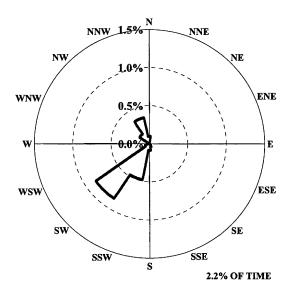




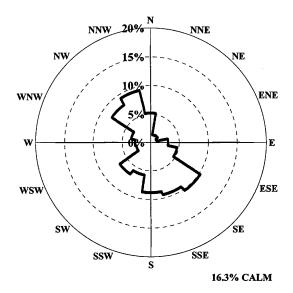
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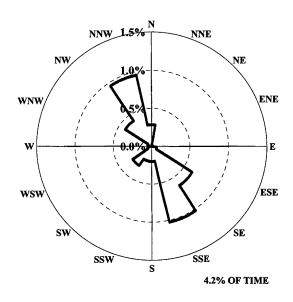
ALL SUMMER WINDS



SUMMER WINDS EXCEEDING 20 mph



ALL WINTER WINDS



WINTER WINDS EXCEEDING 20 mph

Directional Distribution (%) of Winds (Blowing From)						
Station:	Sacramento Executive Airport, CA (1947 - 1999)					

Towers on Capitol Mall - Sacramento, California

Project #: 05-1242

Figure No.

2

February 4, 2005



	4.	

Appendix D Cultural Resources Study

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CULTURAL RESOURCE OVERVIEW FOR THE CAPITAL TOWERS PROJECT, CITY OF SACRAMENTO, CALIFORNIA

Prepared by

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> April 2005 (Job #05-039)

INTRODUCTION

The project site is located in the City of Sacramento, and consists of the block bounded by Capitol Mall, Third, Fourth and L Streets. The project involves the development of two high-rise towers for commercial and residential purposes. The site is currently occupied by the Copley Press/Sacramento Union building, completed in 1968.

The goal of the study is to document the history of the development and use of the site, and to predict the potential for the presence of prehistoric and historic period archeological resources.

Melinda A. Peak, Senior Historian with Peak & Associates, Inc. served as principal investigator for the research, assisted by Kevin Morse.

RESEARCH METHODOLOGY

A record search was conducted through the North Central Information Center of the California Historical Resources Information System. No prehistoric resources have been recorded within or adjacent to the project site.

The Native American Heritage Commission was contacted for a check of the Sacred Lands files. Here are no listed properties in or near the project site. Letters were also sent to several Native American groups and individuals for further information on resources of concern to Native Americans including Rose Enos, Joe Marine, Nicholas Fonseca and Jeff Murray (Shingle Springs Rancheria), and Jessica Tavares (United Auburn Indian Community). No replies have been received to date.

To compile the historical context for the site, research has been conducted at the Sacramento Archives and Museums Collections Center and the California Room of the California State Library. Sources utilized include City tax assessment map books and rolls, City directories, federal census, photographic collection, Sanborn Fire Insurance maps, City maps, and newspapers.

HISTORIC CONTEXT

Native American Period

At the time of contact, the project site lay in the territory of the Valley Nisenan. The Nisenan, or Southern Maidu, occupied the upper drainages and the adjacent ridges of the Yuba, the north, middle, and south forks of the American, and at least the upper north side of the Cosumnes River. The eastern limit of their territory is conventionally believed to extend to the crest of the Sierra. The Nisenan in the valley proper also occupied some area west of the lower reaches of the Feather River (Wilson and Towne 1978).

The Nisenan linguistically are grouped with the Northern Maidu and Konkow within the Penutian family (Riddell 1978:387). Kroeber distinguished three dialects within the larger territory occupied by the Nisenan, but Riddell indicated more distinctions are possible. Wilson and Towne (1978) distinguished several "centers," presumably linguistic and social groupings.

The Nisenan were socially integrated at the village or community group level (Wilson and Towne 1978), with the group participating in the decision-making process. The villages would range in size from 15 to 25 people to, at least in the Valley Nisenan, villages of over 500 people (Kroeber 1925:821). A very large settlement consisted of a major village and associated smaller camps, whether general or specialized in nature. A headman, respected by all, residing in the major village had the authority to call upon the smaller associated groups in times of need, although the smaller groups did not have to always obey.

The villages for the Hill Nisenan were located on ridges and flats along the major streams and rivers within their territory. The satellite encampments and villages were probably located on the smaller watercourses surrounding or nearby the major village.

The Nisenan, as with other Sierran groups, moved into the higher elevations during the hot summer months. The main activity was the collecting of pine nuts and numerous other species of nuts, roots, and berries. This was done primarily by women and children. The foraging groups in a locale could range from small, extended family groups, composed of a woman, her immediate female kin, and their adolescent children to whole villages (Wilson and Towne 1978:389). The men spent most of their time hunting or fishing for a wide variety of fish and animals. Hunting was noted as often involving communal drives, with the best archers of the village posted to do the killing (Wilson and Towne 1978:389). Individual hunters made extensive use of decoys and imitative sounds.

Most Nisenan never left the territory used by their own village group. However, there were, in most large villages, at least some individuals who engaged in rather extensive trade with several valley and Sierra groups, such as the Washo.

Post-Contact History

The first recorded Spanish expedition into the project vicinity was led by Gabriel Moraga between 1806 and 1808, in order to scout new mission sites, return runaway Indians, and punish Indians hostile to Spanish rule. Beaver and other fur resources were exploited in the Sacramento Valley by the Hudson Bay Company. In 1827 and 1828, Jedediah Smith led a trapping foray into the project vicinity. These and other trappers set up temporary camps in Nisenan territory and relationships were friendly. In 1833, a great malaria epidemic swept through the Sacramento Valley, killing an estimated 75 percent of the Valley Nisenan population.

The first permanent European settler in the Sacramento Valley was Captain John Sutter, who set up operations in the present downtown area of Sacramento in 1839. Sutter initially employed the Nisenan to help him in his operations but later he imported large numbers of Plains Miwok from the Cosumnes River tribelets as laborers. Sutter's relations with these villages--both Miwok and Nisenan--were essentially feudal.

With the discovery of gold and the subsequent influx of a large Euro-American mining population after 1849, Nisenan numbers were further reduced by disease and genocide. Survivors who were not either sickened or murdered were ultimately forced to vacate their ancestral homes. By the 1920s, when University of California anthropologists sought Native American informants who could testify concerning aboriginal lifeways in the areas, only two elderly individuals could be located who retained any knowledge of Sacramento's native heritage.

Several village names have been reported for sites in the City of Sacramento, including Sacum, for the site at City Hall, the subject of recent excavations.

The City of Sacramento

In 1841, Sutter was granted 11 leagues of land by the Mexican government. His settlement of Rancho New Helvetia, located within present-day Sacramento and later known as Sutter's Fort, also served as a trading post and a place of refuge for immigrants. With the discovery of gold at his mill site in Coloma in 1848, Sutter's plans for New Helvetia as an independent state were ruined and gold seekers overran his ranching empire.

From a handful of residents at Sutter's Fort, the population of Sacramento had grown to about 2,000 in October 1849, and to an estimated 3,500 two months later. Early settlement focused on the waterfront, with businesses extending along J Street (Severson 1973).

Sacramento became an off-loading point for those destined for the northern mines and it profited greatly from the mining trade. Sacramento was situated at a crucial transshipment point and soon came to dominate commercial activity in the interior of the state. The subsequent history is an example of urban growth based on its control over transportation. Sacramento became the state capitol in 1854 and continues as the State's political center to the present day.

Early development centered on the downtown central business district. The rapidity of Sacramento's

growth provided the economic incentive to transform this tent community quickly to a city of woodframe and brick structures. More permanent structures served to reduce the damage caused by a series of devastating fires.

Increasingly efficient flood control measures protected the town from inundation and subsequent sewage problems generated by periodic flooding of the Sacramento and American Rivers. Undertakings to prevent flooding included building and strengthening levees, re-channeling the American River, and raising streets in the main business district some 12 feet. In 1868, the "S" curve of the American River was bypassed by digging an entirely new channel, which joined the Sacramento River north of the rail yards, and reduced the frequency of flooding that once occurred within the present-day Richards Area. Major raising of the City streets occurred in the 1860s. Many building owners opted to raise their buildings to the new street grades; others converted their first floors into cellars.

Historic Project Site Use and Occupancy

Early Years

The project site was occupied by 1851. The 1852 fire destroyed all buildings in the northern half of the site. The block was quickly rebuilt, as was much of Sacramento. By December of 1852, there were 761 buildings in the City. By October 1854, about 500 brick and 2,000 frame buildings had been completed. There are buildings on each of the lots of the block (Neasham and Henley 1969; Figure 1). The 1857 lithograph of the City shows a fully developed block (Figure 2).

In 1860, at least one of the landowners is a prostitute, who may operate a business on the street. The block is close enough to the docks, plus just off the main business streets, J and K, apparently well serving the rather transient clientele of the block.

In 1866, Mark Twain reporting lodges at one of the boarding houses on the block during his time in Sacramento working for the *Sacramento Union* newspaper, reportedly only a few months. This building stood at 309 M Street until the early 1940s.

In 1870, there are more buildings on the lot, with many added on the east-west alley that divided the block (Figure 3). At this point, there were at least two "bawdy" houses on the block, one of which was owned by an African-American woman.

In the 1870s, the streets are raised about two feet along a portion of Fourth Street and L Street to help meet the established grades for the City(Lagomarsino 1969).

"Japantown"

Japanese began coming to the United States as contract laborers after 1884. By 1895, the block had apparently begun to attract Japanese individuals, with one of the boarding houses on the alley shown as "Jap. Lodgings" (Figure 4).

The block changed dramatically over the next fifteen years. In 1890, there were about 1,100 Japanese in California. By 1910, there were over 41,000 Japanese in the State. The block had a number of Japanese businesses, and the boardinghouses were operated catering to Japanese, as they were not welcome in white facilities.

The block becomes the heart of "Japantown", the Japanese community in Sacramento. There are numerous businesses and boarding houses that cater to the Japanese community. By 1915, the block had 10 Japanese restaurants and 7 other restaurants, a "moving pictures" theater, two poolrooms, two Japanese laundries, a saloon, numerous tenements and boardinghouses, a soda works, and a bank (Figure 5). The alley on the block is indicated on maps and in telephone directories as "Jap Alley."

The soda works produced "Sun Rise" soda. The history of this industry cannot be totally documented as the Japanese were excluded from City directories until 1918. The business is listed in the 1908 Sacramento telephone book, and appears to have remained in business until 1935. The proprietor was S. Tokunaga, and the business was located close to the alley. By 1928, the company also featured Rainier, Buffalo and Tacoma brands of beer, apparently acting as a distributor as well as producing the soda water and other beverages (Schulz et al.1980).

The Japanese were tenants for the most part, but slowly began to purchase the lots. By 1925, only two of the buildings on the block had Japanese surnamed owners. By 1940, 12 of the 37 lots on the block were owned by Japanese surnamed individuals or companies.

The Decline of Japantown

Decline of the block had begun in the 1930s. The population of Japanese in the area had declined, in part due to the Depression. Some of the Japanese did choose to return home to Japan.

In 1942, the internment of the Japanese began, with 3,500 citizens of Sacramento forced to leave their homes. Residents of the block were taken to the Walerga Center in northern Sacramento County, used as an assembly point, with the internees sent on to Tulelake.

One Sacramento resident, Eugene Hepting, provided an excellent record of the appearance of the block, and also seemed to understand the historical importance of the internment. His captioned photographs reflect the attitudes of the time (Figures 6 to 15). Hepting took hundreds of photographs of street scenes of the City of Sacramento, and it is fortunate his collection is

preserved at the Sacramento Archives and Museums Collections Center.

One significant landowner was Henry Taketa, a prominent attorney who assisted the returning internees and helped to safeguard the legal rights of Japanese–Americans. Taketa was the uncle of the late Congressman Robert Matsui (*The Sacramento Bee*, October 22, 1991).

After the Japanese were removed from the block, other changes occurred. The boardinghouses were apparently rented to lower income individuals, including African-Americans, Chinese and Chinese-Americans, Hispanics and Phillipinos. The Nippon Theater, the movie theater on L Street, was renamed the Valley Theatre and later apparently, the Alameda.

Demolitions of buildings on the block began in the early 1940s. The boarding house that Mark Twain had stayed at was torn down in 1943 (Figure 6, Figure 16). Other businesses on Capital Mall and Third Street were also removed, with a filling station built at that corner.

Post-War Years

Although some of the Japanese returned to their homes and businesses after the end of World War II, many did not. The west end of Sacramento had declined, and families began to relocate to other parts of the City.

When redevelopment began in 1958, some of the Japanese moved to Tenth Street between W and T streets. Others moved further out, to Freeport and Fruitridge road areas, and some to Oak Park off Twelfth Avenue. In the later years, affluent Japanese moved to South Land Park and Greenhaven neighborhoods.

The project area became a predominantly Hispanic neighborhood by 1960, with a number of restaurants, some lodging and rooming houses, and several other businesses (Figure 17).

Redevelopment

Redevelopment brought a number of changes for the block. Demolitions of buildings on the block began in the early 1960s, and no businesses are listed for the block past 1964 (Figures 18 to 22).

Copley Press acquires the block as their main office site, and as a plant site for printing books and the *Sacramento Union* newspaper. The major portion of the center of the block is excavated to at least nine feet below street grade (Figure 23).

Capitol Mall is raised slightly for the construction of the over crossing of Interstate 5 through the City of Sacramento in the late 1960s. In 1994, the *Sacramento Union* halted publication after 143 years.

EFFECTS OF THE PROPOSED PROJECT

The grading plan for the Copley Press building was obtained from the City Building Inspection records. The plan shows that the major portion of the lot was excavated to a depth of nine feet for the building construction. The excavation may have eventually exceeded that depth as thick concrete pads were apparently installed on the lower level of the building to support the weight of the printing presses.

From the apparent amount of disturbance, it appears unlikely that the major portion of the block will contain archeological features and deposits that could be if excavated, could prove to be significant cultural resources through the address of important research questions. All knowledge about the history of the use and occupation of the block will be drawn from the archival record.

There are several strips of land that appear to be relatively undisturbed on the edges of the existing building. Two of these strips are parking lots along L Street and Capitol Mall, with one other undisturbed area along Third Street. Some of the area may have been disturbed for the installation of underground gas tanks for the filling station that stood on the site for thirty years. It is possible that these contain artifacts and features that would be able to address important research questions, although more commonly, the features are located along the back lot lines behind residences and other buildings.

IMPACTS

The construction of the proposed building complex has the potential to affect important cultural resources within a small portion of the project area.

PROPOSED MITIGATION MEASURES

A research design and field strategy for test and data recovery excavations should be developed for the remaining strips of land not excavated in the 1960s for the construction of the Copley Press building. If possible, records for the removal of tanks for the filling station may also need to be located to further identify areas of previous disturbance.

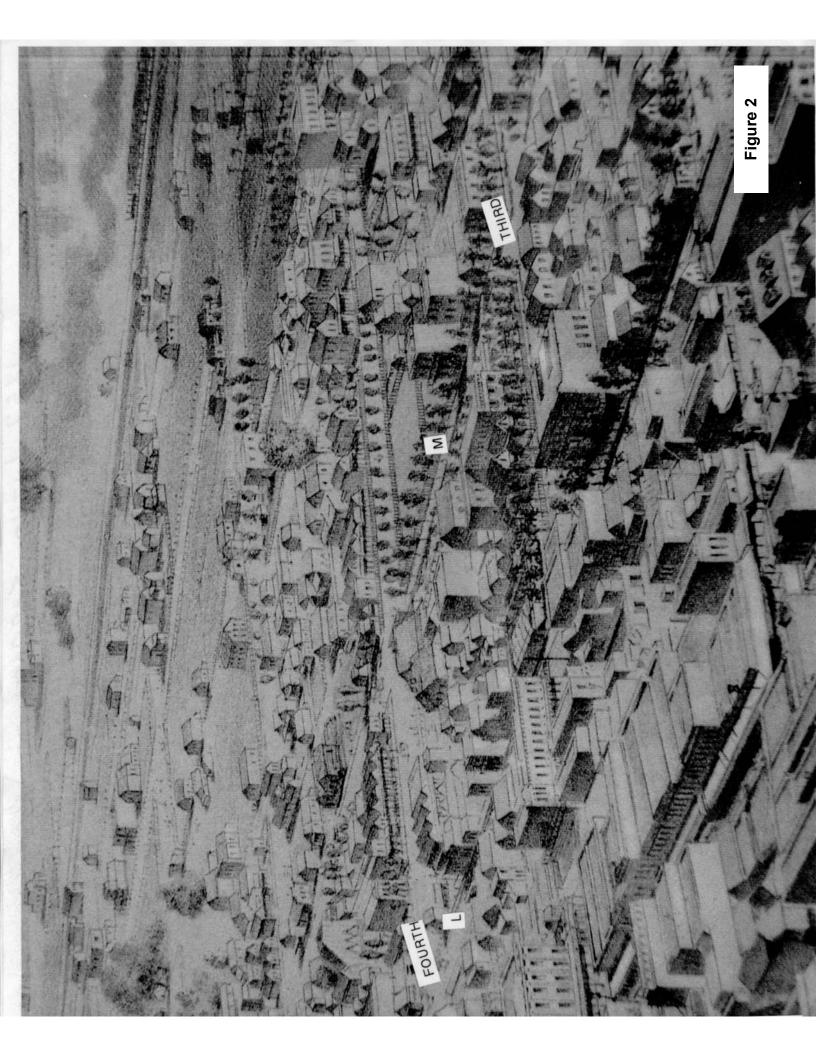
Excavation phasing must be coordinated with the proposed building demolition schedule. After the asphalt covering of the parking lot areas are removed, excavations should commence. Data recovery will occur, and all features will be excavated. Laboratory and analysis of the recovered materials will occur. If significant findings are made, it may be possible to incorporate historic materials and artifacts in an interpretive display in one of the buildings.

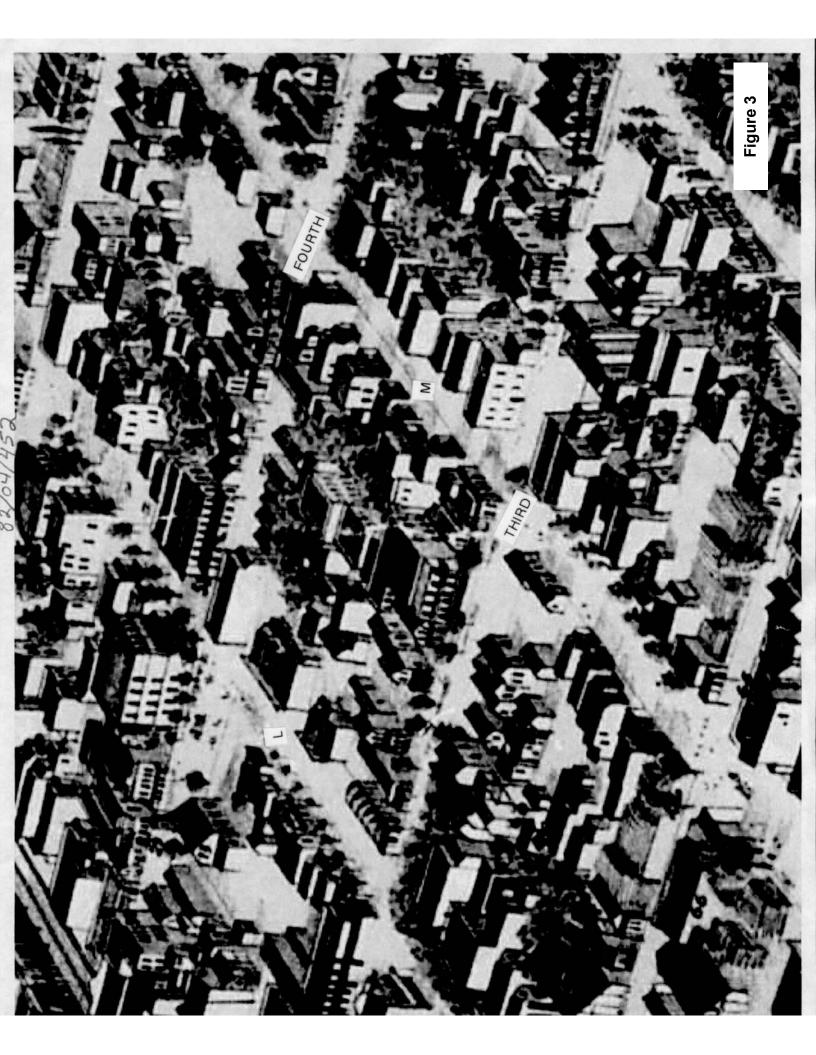
This block is the heart of Sacramento's "Japantown," the largest Japanese community in northern California for almost fifty years. It seems that it would be appropriate to in some way commemorate the previous use of the site by the Japanese-Americans, perhaps through an interpretive display in one of the buildings.

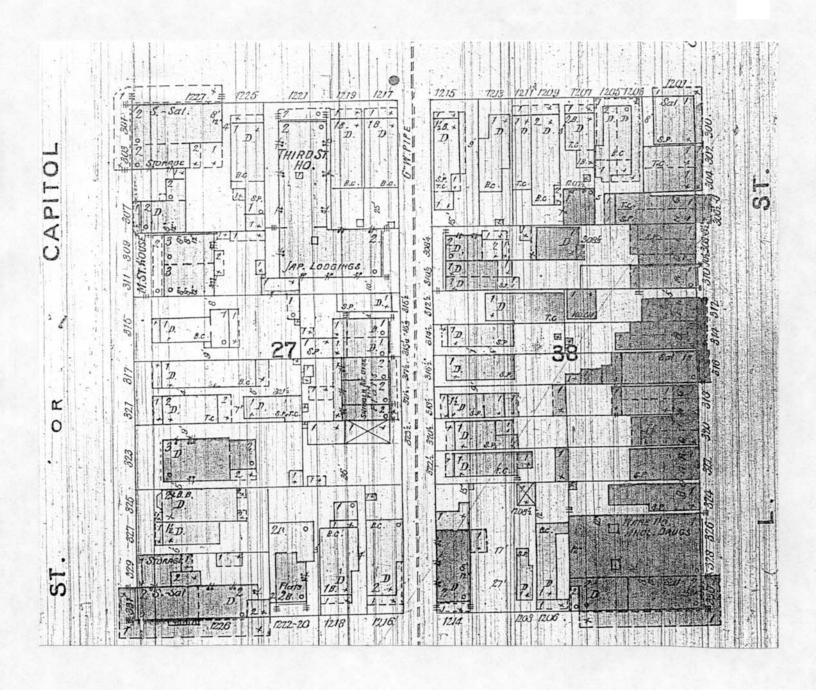
FIGURE LIST

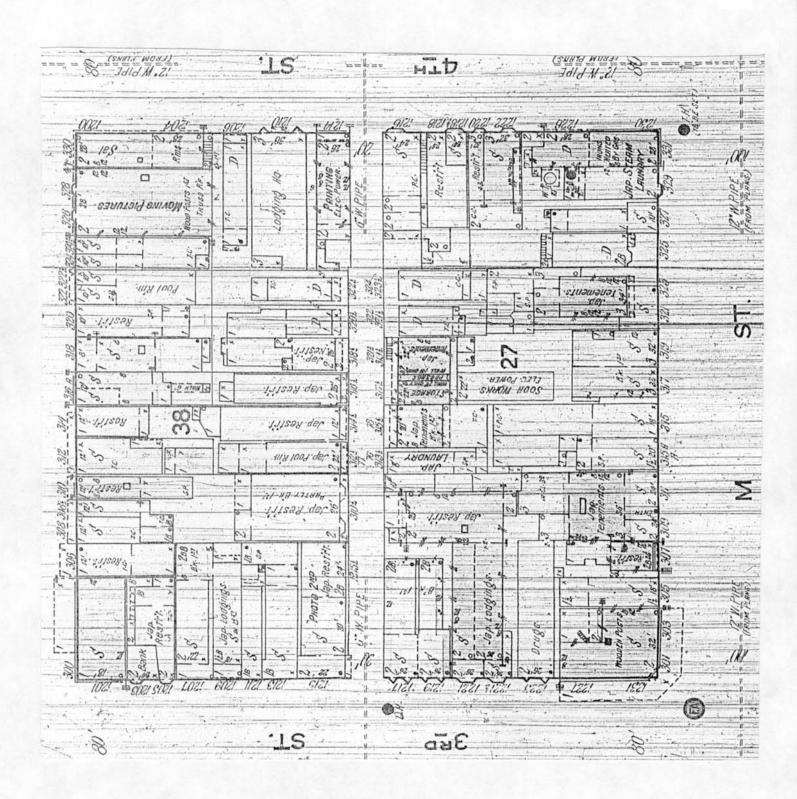
- 1. W. S. Watson, Official Map of the City of Sacramento, 1854.
- 2. George H. Baker, "City of the Plain" lithograph, 1857.
- 3. Augustus Koch, Bird's Eye View of the City of Sacramento, 1870.
- 4. Sanborn Map Company, 1895.
- 5. Sanborn Map Company, 1915.
- 6. Eugene Hepting, photographer. Captioned: "307 M Street", April 1, 1938. Home once occupied by John Batcher of "Shaw & Batcher" in 1863 to 1885. Formally known as "71" M St. Erected in 1857. The building to the right is indicated to be the home of Mark Twain. On file, Sacramento Archives and Museums Collections Center.
- 7. Eugene Hepting, photographer. Captioned: Scene on the N.W. corner of 4th & M Street, in front of Mamai Kaishundo Drug-store...Note the women (Japanese) bowing over, typical of them...but they were not bowing to me.. Picture, looking west towards 3rd St..May 9, 1942. On file, Sacramento Archives and Museums Collections Center.
- 8. Eugene Hepting, photographer. Captioned Eugene Hepting, photographer. Captioned: "Hamai Kaishundo Co." Leading Drug-store in "Deep in the heart of Jap-town"...N.W. corner of 4th & M Stret..."1230" 4th Street..Len Kidder in the doorway talking to a Japanese..Note the Japanese soldier in an American uniform. May 9,1942. On file, Sacramento Archives and Museums Collections Center.
- 9. Eugene Hepting, photographer. Captioned: At the N.W. corner of 4th & M Street..May 10th, 1942. (Monday) S.E. Halley in front. On file, Sacramento Archives and Museums Collections Center.
- 10. Eugene Hepting, photographer. Captioned Eugene Hepting, photographer. Captioned: 4th Street...Looking north...May 9, 1942. Lotti & Hunter in front of the drug-store. On file, Sacramento Archives and Museums Collections Center.
- 11. Eugene Hepting, photographer. Captioned: 4^{th} & M Street, looking north...west side of the street. May 9,1942. On file, Sacramento Archives and Museums Collections Center.
- 12. Eugene Hepting, photographer. Captioned: Formally a "Jap" movie, now taken over by the Phillipinos...Valley Theatre...326 L Street. May 9, 1942. On file, Sacramento Archives and Museums Collections Center.
- 13. Eugene Hepting, photographer. Captioned: "Jap alley"...listed in the telephone book as

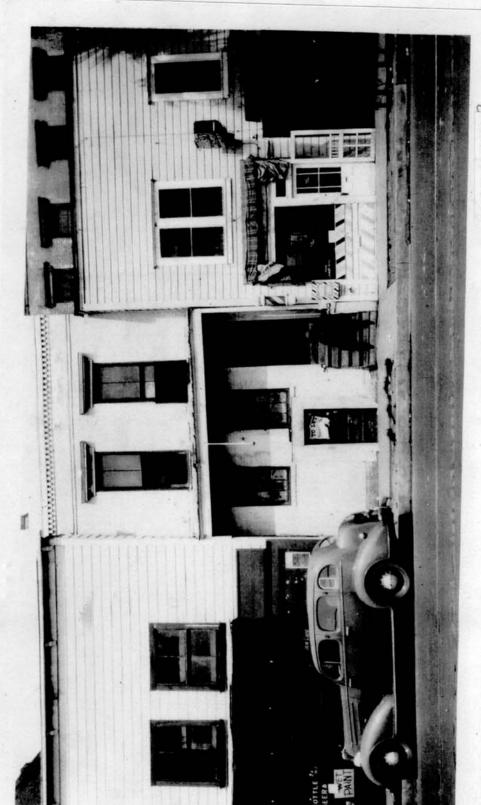
- such...May 16th, 1942. After the evacuation. North side of the alley." On file, Sacramento Archives and Museums Collections Center.
- 14. Eugene Hepting, photographer. Captioned: #74 Jap alley. On file, Sacramento Archives and Museums Collections Center.
- 15. Eugene Hepting, photographer. Captioned: Japanese already on the move, following the notice..May 9th, 1942. Picture taken on the east side of 4th Street. On file, Sacramento Archives and Museums Collections Center.
- 16. Sanborn Map Company, 1952.
- 17. West end L Street, between Third and Fourth Street, south side.
- 18. Aerial photograph, looking north, 1961. *Sacramento Bee* morgue files. On file, Sacramento Archives and Museums Collections Center.
- 19. Aerial photograph, looking west, undated—early 1960s? *Sacramento Bee* morgue files. On file, Sacramento Archives and Museums Collections Center.
- 20. Aerial photograph, looking south, undated—early 1960s? *Sacramento Bee* morgue files. On file, Sacramento Archives and Museums Collections Center.
- 21. Aerial photograph, looking south, July 1963. Shows partial demolition of buildings for redevelopment. *Sacramento Bee* morgue files. On file, Sacramento Archives and Museums Collections Center.
- 22. Aerial photograph, looking east, July 1963. Shows partial demolition of buildings for redevelopment. *Sacramento Bee* morgue files. On file, Sacramento Archives and Museums Collections Center.
- 23. Aerial photograph, looking up Capitol Mall, undated—late 1960s? *Sacramento Bee* morgue files. On file, Sacramento Archives and Museums Collections Center.



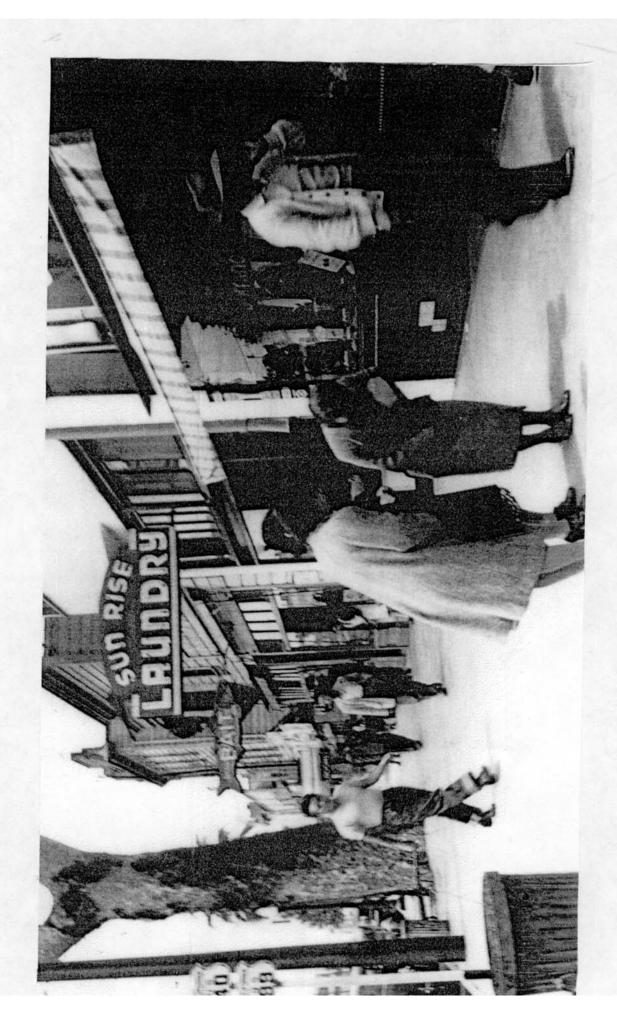


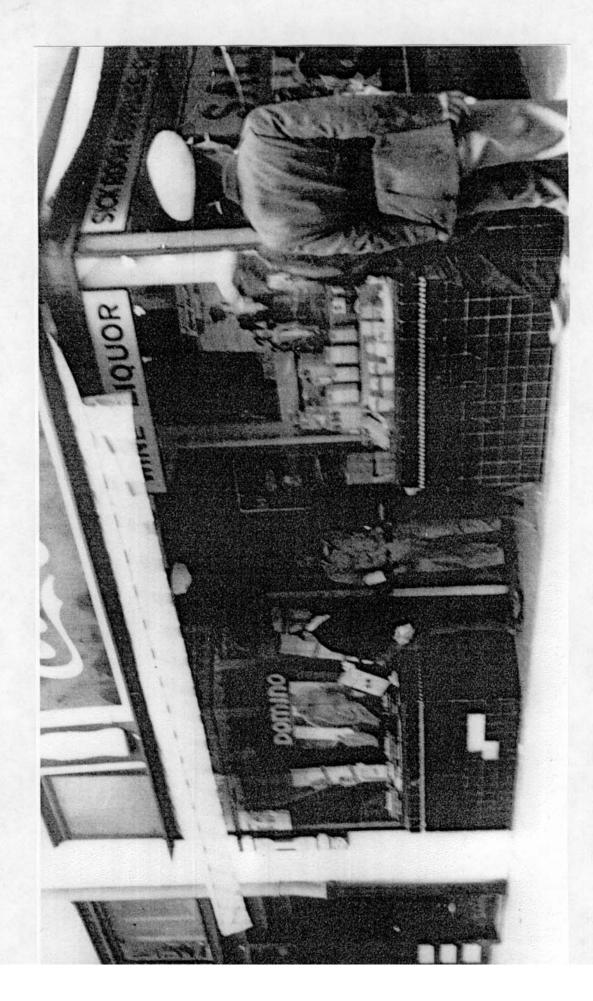






307 M STREET 3



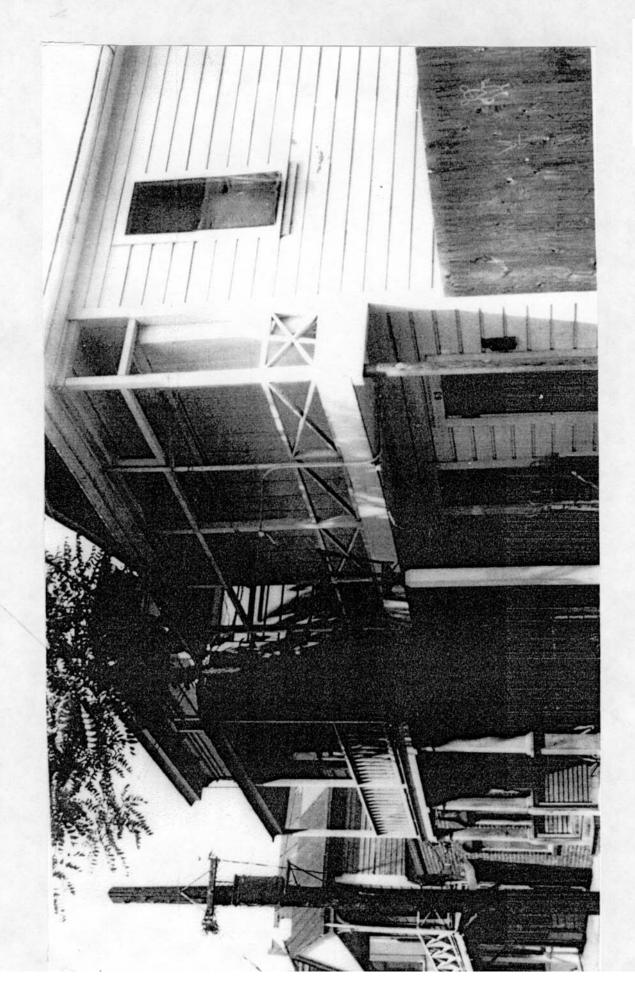




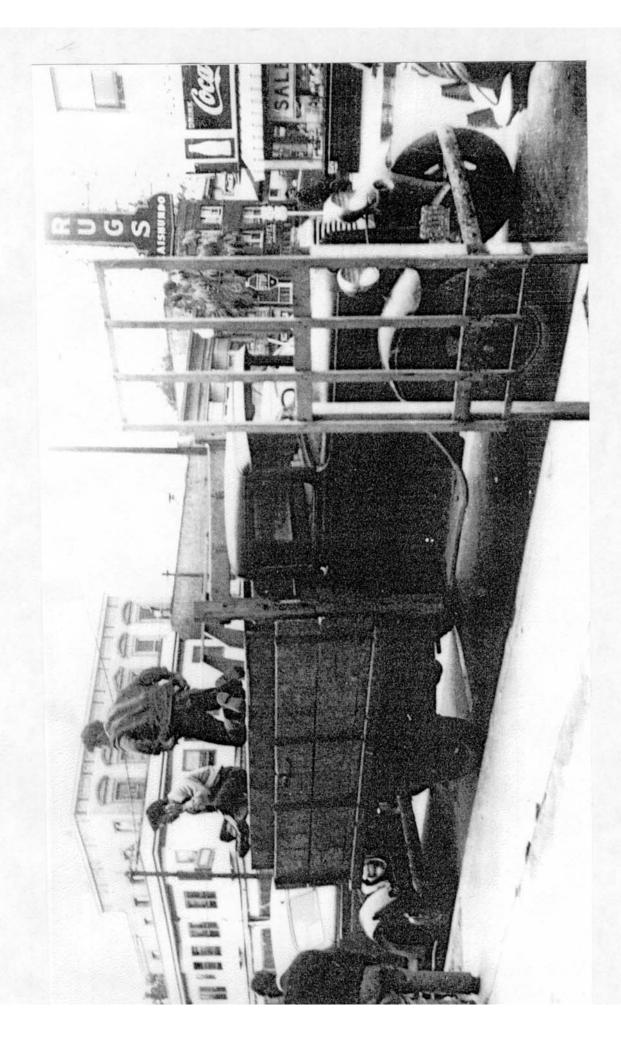


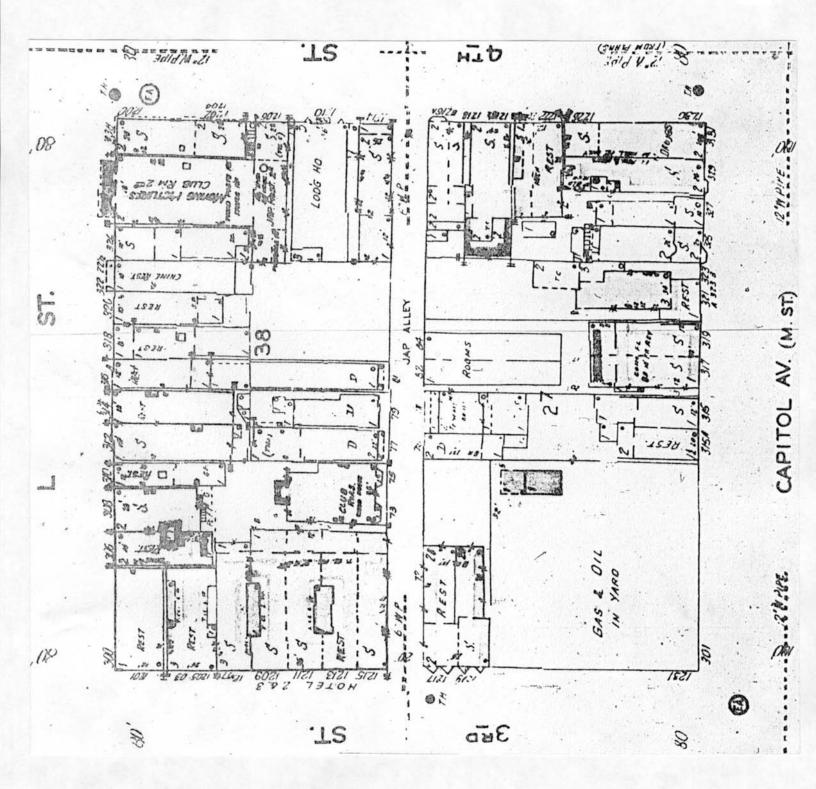


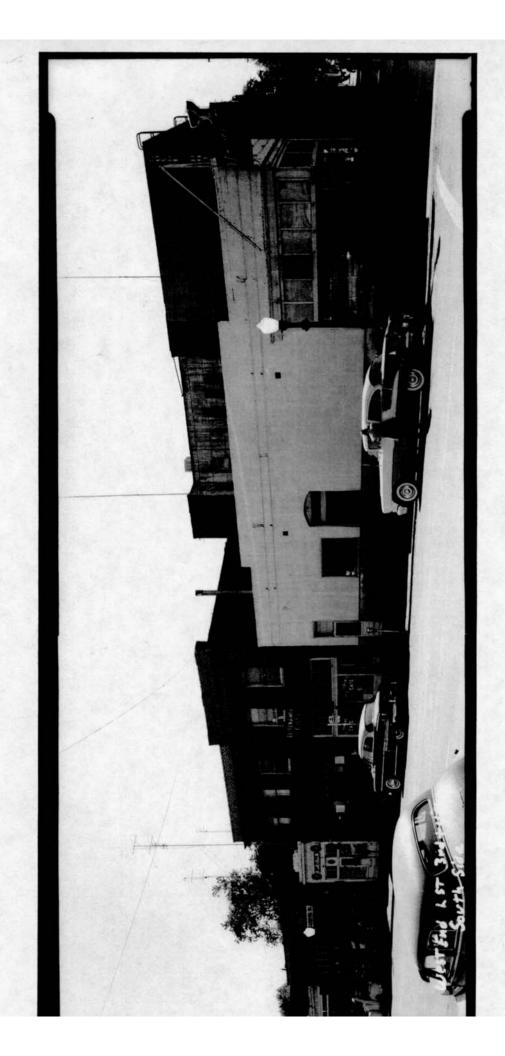


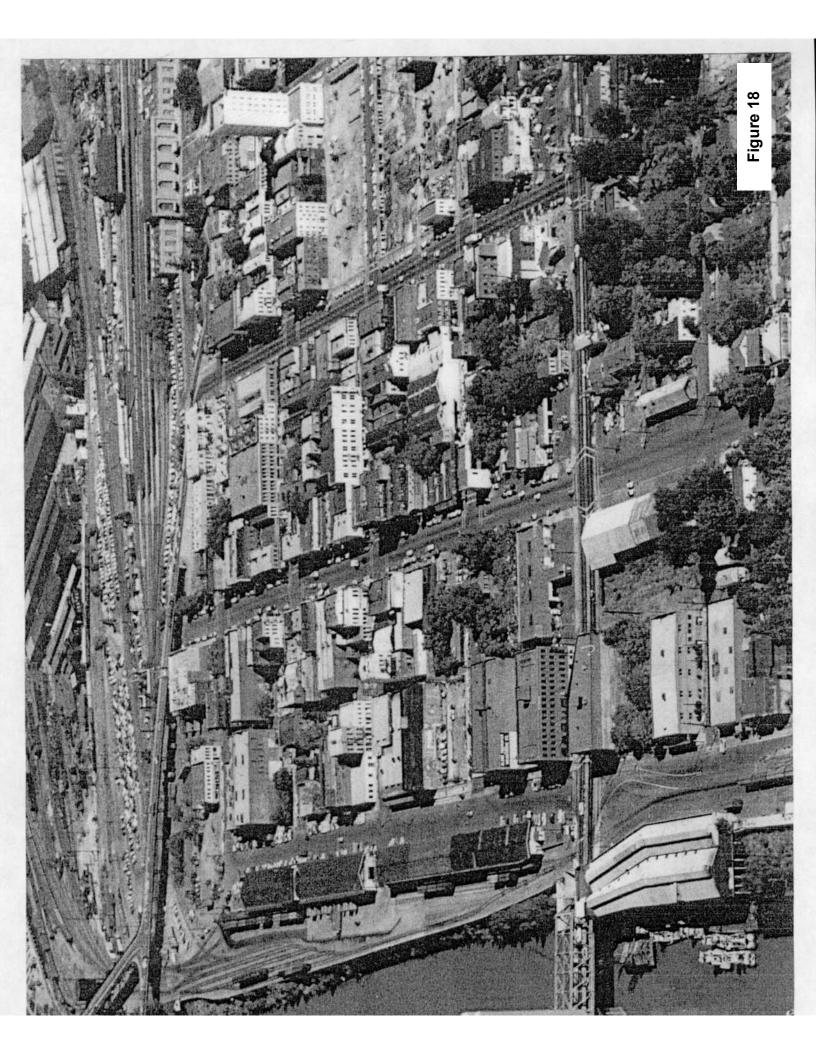


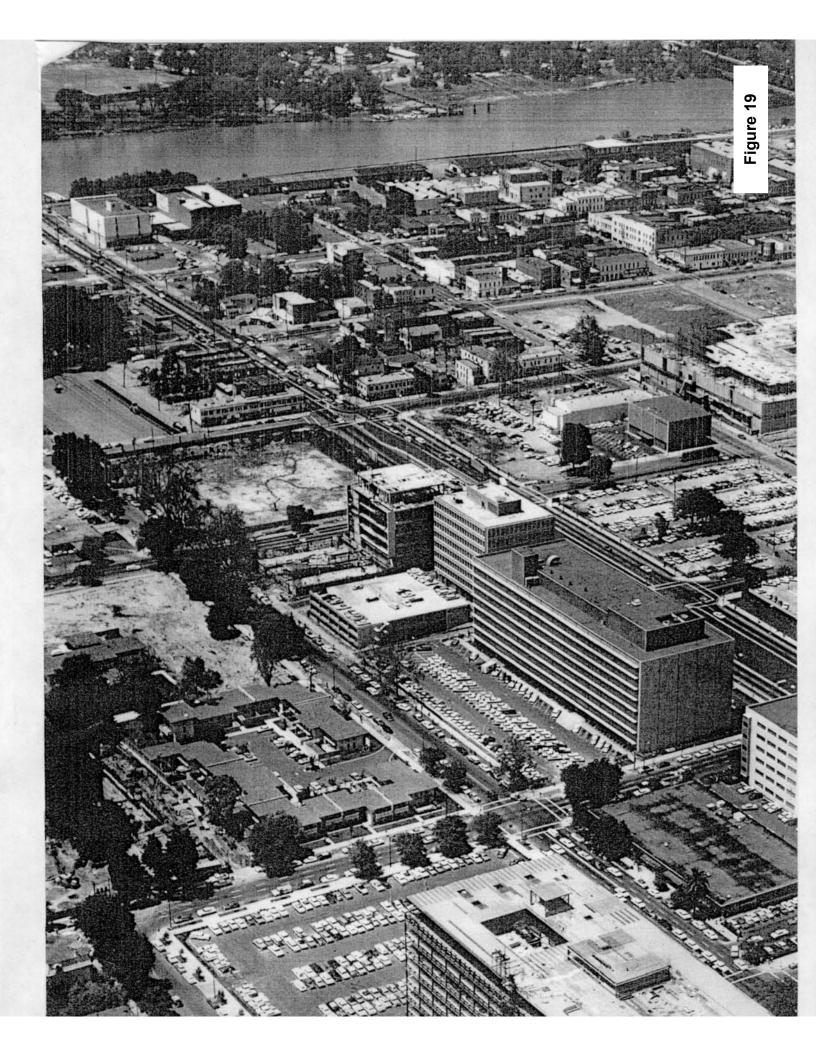




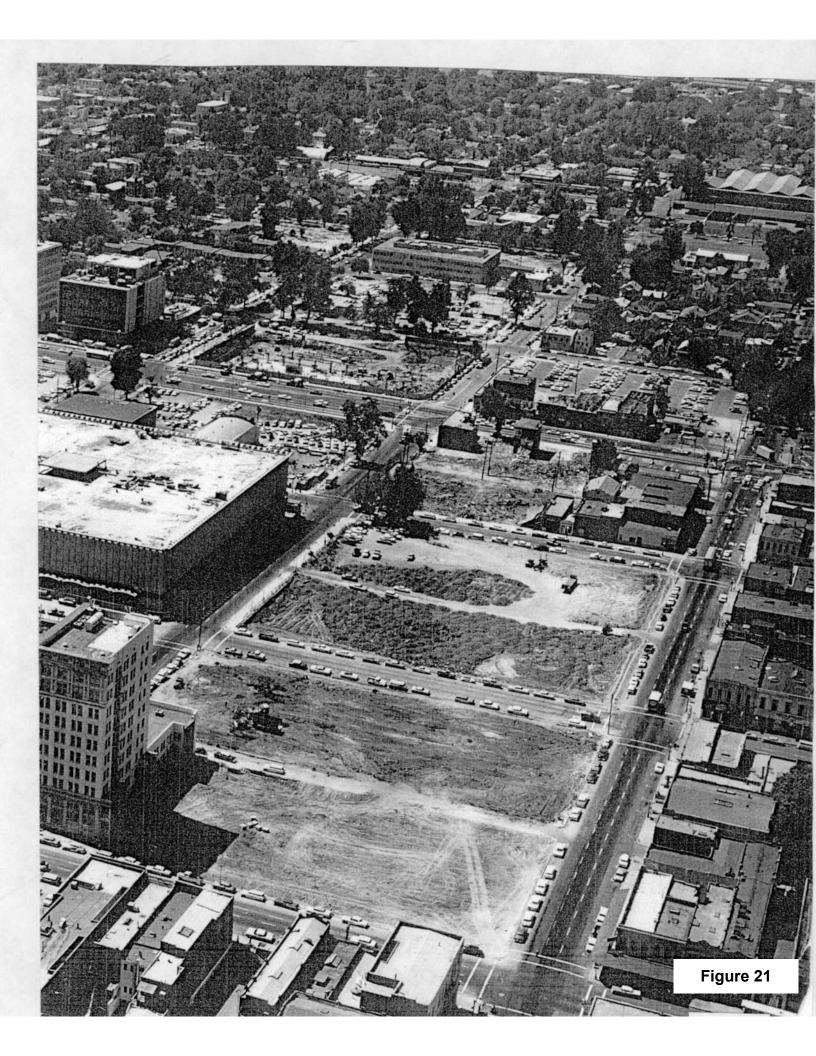


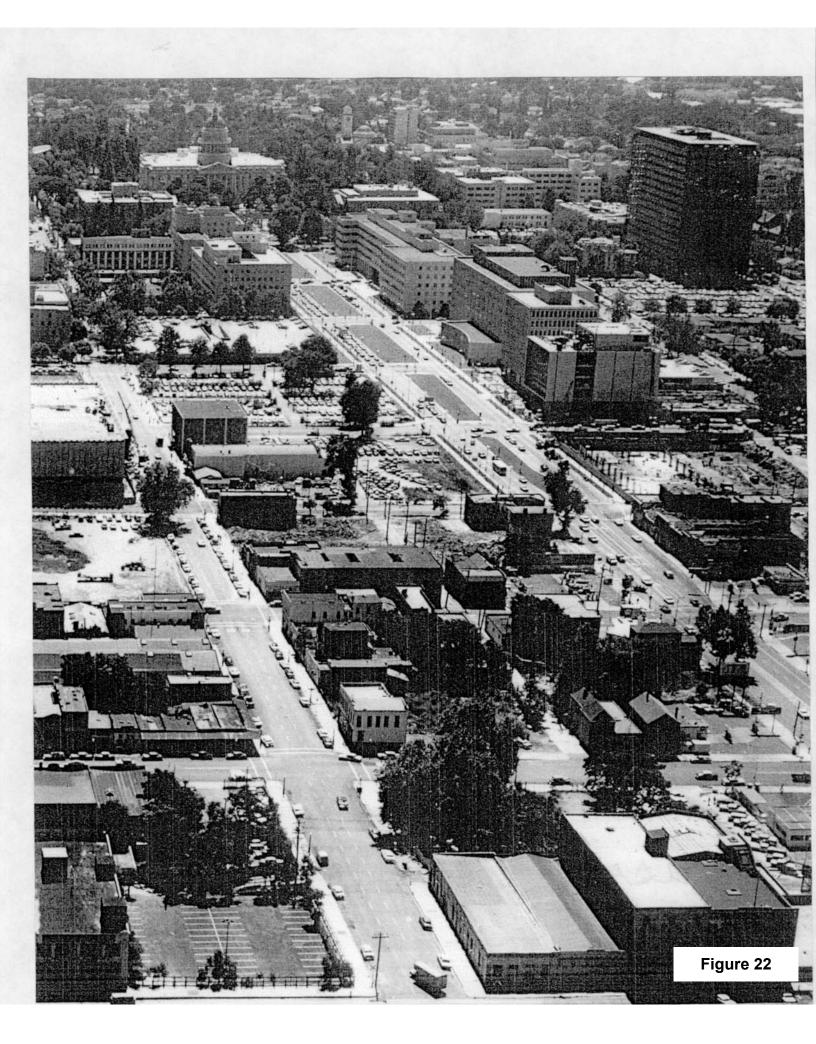


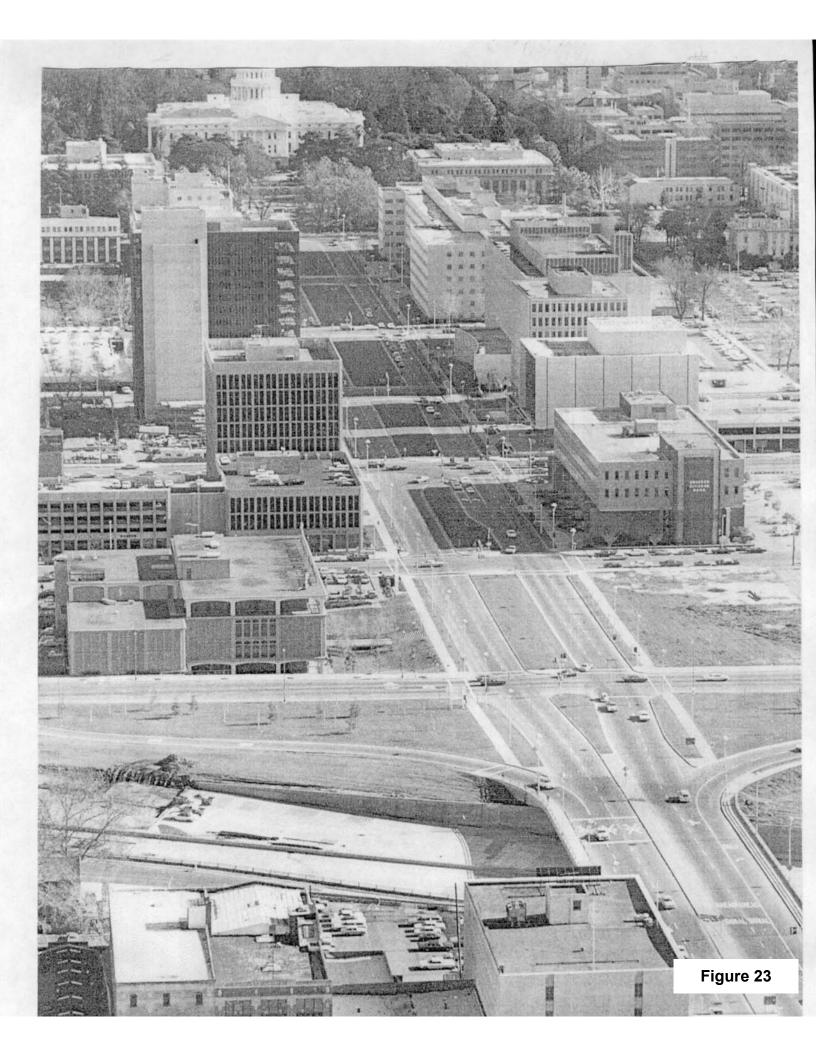












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1978 Maidu and Konkow. In *California*, edited by Robert F Heizer, pp. 370-386. Handbook of North American Indians, vol. 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

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v.d. Sacramento City Directories. [Titles and publishers vary with different years]. On file, Sacramento Archives and Museums Collections Center and California Room of the California State Library.

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Severson, Thor

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1913 History of Sacramento County. Los Angeles: Historic Record Co.

Wilson, Norman L. and Arlean H. Towne

1978 Nisenan. In *California*, edited by Robert F Heizer, pp. 387-397. Handbook of North American Indians, vol. 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Wooldridge, Major J. W., editor

1931 History of the Sacramento Valley, California. Chicago: Pioneer Publishing Co.

APPENDIX 1

Resume of Principal Investigator

PEAK & ASSOCIATES, INC. RESUME

MELINDA A. PEAK Senior Historian/Archeologist 3941 Park Drive, Suite 20 #329 El Dorado Hills, CA 95762 (916) 939-2405 **January 2005**

PROFESSIONAL EXPERIENCE

Ms. Peak has served as the principal investigator on a wide range of prehistoric and historic excavations throughout California. She has directed laboratory analyses of archeological materials, including the historic period. She has also conducted a wide variety of cultural resource assessments in California, including documentary research, field survey and report preparation.

In addition, Ms. Peak has developed a second field of expertise in applied history, specializing in site specific research. She is a registered professional historian and has completed a number of historical research projects. Ms. Peak has been a regular lecturer for courses in the Capital Campus Public History program (California State University, Sacramento), teaching cultural resource law and site specific research methods.

Through her education and experience, Ms. Peak meets the Secretary of Interior Standards for historian, architectural historian, prehistoric archeologist and historic archeologist.

EDUCATION

M.A. - History - California State University, Sacramento, 1989

Thesis: The Bellevue Mine: A Historical Resources Management Site Study in Plumas and Sierra Counties, California

B.A. - Anthropology - University of California, Berkeley, 1976

RECENT PROJECTS

In recent months, Ms. Peak has completed several determination of eligibility and effect documents in coordination with the Corps of Engineers for projects requiring federal permits, assessing the eligibility of a number of sites for the National Register of Historic Places. She has also completed historical research projects on a wide variety of topics for a number of projects including the development of navigation and landings on the Napa River, a farmhouse dating to the 1860s, an early roadhouse, and a section of an electric railway line. She also completed an NRHP evaluation of

Folsom Dam for the Corps of Engineers.

In recent years, Ms. Peak has prepared a number of cultural resource overviews and predictive models for blocks of land proposed for future development for general and specific plans. She has been able to direct a number of surveys of these areas, allowing the model to be tested.

She served as principal investigator for the multi-phase Twelve Bridges Golf Club project in Placer County. She served as liaison with the various agencies, helped prepare the historic properties treatment plan, managed the various phases of test and data recovery excavations, and completed the final report on the analysis of the test phase excavations of a number of prehistoric sites. She is currently involved as the principal investigator for the Clover Valley Lakes project adjacent to Twelve Bridges in the City of Rocklin, coordinating contacts with Native Americans, the Corps of Engineers and the Office of Historic Preservation.

Ms. Peak has served as project manager for a number of major survey and excavation projects in recent years, including the many surveys and site definition excavations for the 172-mile-long Pacific Pipeline proposed for construction in Santa Barbara, Ventura and Los Angeles counties. She also completed an archival study in the City of Los Angeles for the project. She also served as principal investigator for the 1997 coaxial cable removal project for AT&T.

Additionally, she completed a number of small surveys, served as a construction monitor at several urban sites, and directed the excavations of several historic complexes in Sacramento, Placer and El Dorado Counties.

Ms. Peak is the author of a chapter and two sections of the recently published history (1999) of Sacramento County, *Sacramento: Gold Rush Legacy, Metropolitan Legacy*. She is currently preparing text for the second Sacramento County history volume, to be published by Heritage Media in 2005.



April 14, 2005

D. Pilas-Treadway Native American Heritage Commission 915 Capitol Mall, Room 364 Sacramento, CA 95814

RECEIVED

APR 2 6 2005 **EIP Associates**

Subject: Capital Towers Project, City of Sacramento

Dear Ms. Treadway:

We are completing cultural resource documentation for Section 106 compliance for a proposed project in the City of Sacramento. The project area is the block bounded by Third Street, L Street, Fourth Street, and Capitol Mall, and lies on unsectioned lands of the New Helvetia grant. The project area is mapped on the Sacramento West 7.5' USGS topographic quadrangle. A map delineating the project boundaries is enclosed.

Could you please check the Sacred Lands file for the project area, as well as provide a list of contacts for the area?

Thank you.

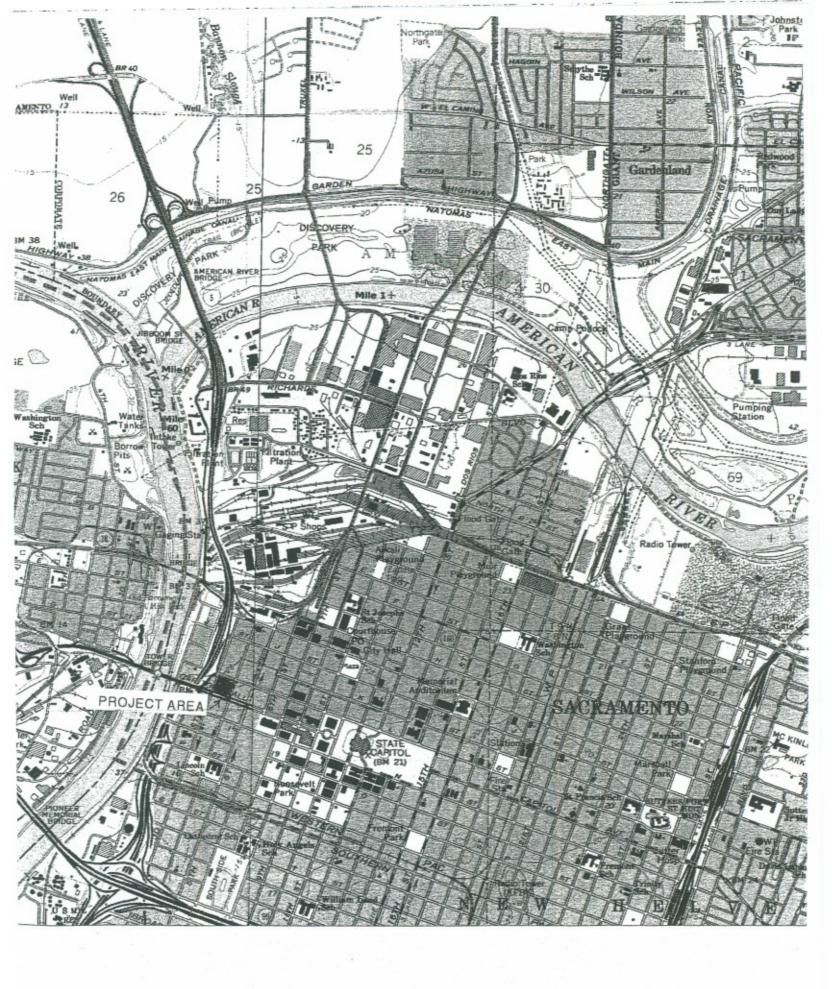
Sincerely,

Melinda A. Peak

Melinda a. Peak

President

enclosure



STATE OF CALIFORNIA

Arnoid Schwarzeneoger, Governor

NATIVE AMERICAN HERITAGE COMMISSION 915 CAPITOL MALL, ROOM 364 SACRAMENTO, CA 96814 (916) 853-4082 Fax (916) 657-5390 Web Site www.nahc.ca.oov



April 19, 2005

Melinda Peak Peak & Associates, inc. 3941 Park Drive, Suite 20 El Dorado Hills, CA 95762

Sent by Fax: 916-939-2405 Number of Pages: 4

RE: Proposed Capitol Towers projects, Sacramento County; Schuman project, Butte County

Dear Ms. Peak:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans Individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely.

Debbie\Pilas-Treadway

Environmental Specialist III

Native American Contacts Sacramento County April 19, 2005

Rose Enos 15310 Bancroft Road Maidu Auburn , CA 95603 Washoe (530) 878-2378

Joe Marine 1025 35th Avenue, Apt 9 Maidu Sacramento , CA 95822 916 429-7307

Shingle Springs Band of Miwok Indians
Jeff Murray, Cultural Resources Manager
P.O. Box 1340 Miwok
Shingle CA 95682 Maidu
shingle_springs_rancheria@ho
(530) 676-8010
(530) 676-8033 Fax

Shingle Springs Band of Miwok Indians Nicholas Fonseca, Chairperson P.O. Box 1340 Miwok Shingle CA 95682 Maidu shingle_springs_rancheria@ho (530) 676-8010 (530) 676-8033 Fax

United Auburn Indian Community of the Auburn Jessica Tavares, Chairperson 575 Menlo Drive, Sulte 2 Maidu Rocklin , CA 95765 Miwok 916 663-3720 916 663-3727 - Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.95 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resource sesseement for the proposed Capitol Towers projects, Secremento County.



April 20, 2005

Joe Marine 1025 35th Avenue Sacramento, CA 95822

Subject: Capital Towers Project

Dear Mr. Marine:

We are involved in initial cultural resource studies for the block in the City of Sacramento bounded by Third, Fourth, and L streets and Capitol Mall on the south. The block is proposed for development for commercial and residential purposes, with two high-rise tower buildings. No prehistoric sites have been identified previously on or near the subject block.

The Native American Heritage Commission provided your name as a possible contact for information on the block. If you have any knowledge regarding prehistoric sites or areas of concern in or near the block, could you please contact me? Thank you.

Sincerely, Molenda a. Real

Melinda A. Peak



April 20, 2005

Shingle Springs Band of Miwok Indians Jeff Murray, Cultural Resources Manager PO Box 1340 Shingle Springs, CA 95682

Subject: Capital Towers Project

Dear Mr. Murray:

We are involved in initial cultural resource studies for the block in the City of Sacramento bounded by Third, Fourth, and L streets and Capitol Mall on the south. The block is proposed for development for commercial and residential purposes, with two high-rise tower buildings. No prehistoric sites have been identified previously on or near the subject block.

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Sincerely,

Melinda G. Peak Melinda A. Peak



April 20, 2005

Shingle Springs Band of Miwok Indians Nicholas Fonseca, Chairperson PO Box 1340 Shingle Springs, CA 95682

Subject: Capital Towers Project

Dear Mr. Fonseca:

We are involved in initial cultural resource studies for the block in the City of Sacramento bounded by Third, Fourth, and L streets and Capitol Mall on the south. The block is proposed for development for commercial and residential purposes, with two high-rise tower buildings. No prehistoric sites have been identified previously on or near the subject block.

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Sincerely, Melenda G. Feat

Melinda A. Peak



April 20, 2005

United Auburn Indian Community Jessica Tavares, Cahirperson 575 Menlo Drive, Suite 2 Rocklin, CA 95765

Subject: Capital Towers Project

Dear Ms. Tavares:

We are involved in initial cultural resource studies for the block in the City of Sacramento bounded by Third, Fourth, and L streets and Capitol Mall on the south. The block is proposed for development for commercial and residential purposes, with two high-rise tower buildings. No prehistoric sites have been identified previously on or near the subject block.

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Sincerely,

Melinda A. Peak

Molenda a. Pear



April 20, 2005

Rose Enos 15310 Bancroft Road Auburn CA 95603

Subject: Capital Towers Project

Dear Ms. Enos:

We are involved in initial cultural resource studies for the block in the City of Sacramento bounded by Third, Fourth, and L streets and Capitol Mall on the south. The block is proposed for development for commercial and residential purposes, with two high-rise tower buildings. No prehistoric sites have been identified previously on or near the subject block.

The Native American Heritage Commission provided your name as a possible contact for information on the block. If you have any knowledge regarding prehistoric sites or areas of concern in or near the block, could you please contact me? Thank you.

Sincerely,

Melinda A. Peak

Melinda G. Peal

Appendix E

CNDDB REPORT

ccipiter cooperii				
Cooper's hawk			Element Code: ABNKC12040	
State	ıs ————	NDDB Element Ranks	Other Lists -	
Federal: None		Global: G5	CDFG Status:	SC
State: None		State: S3		
Habitat As	sociations —			
General: (NESTIN	G) WOODLAND, CHIEFLY OF	OPEN, INTERRUPTED OR MARGINAL TYPE.		
Micro: NEST S	ITES MAINLY IN RIPARIAN GRO	WTHS OF DECIDUOUS TREES, AS IN CANY	ON BOTTOMS ON RIVER FLOOD-PLAINS	; ALSO, LIVE OAKS.
Occurrence No.	61 Map Index:	33435 EO Index: 2928	95 — Da	ites Last Seen
Occ Rank:	Fair		Elen	nent: 1996-07-17
Origin:	Natural/Native occurrence			Site: 1996-07-17
Presence:	Presumed Extant			
	Unknown		Record Last Upd	ated: 1996-09-04
Main Source:	WALKER, R. 1996 (OBS)			
Quad Summary:	SACRAMENTO EAST (3812154	1/512C)		
County Summary:	SACRAMENTO			<u> </u>
Lat/Long:	38.60450° / -121.47256°		Township: 09	9N
UTM:	Zone-10 N4273995 E633000		Range: 0	5E
Radius:	80 meters	Mapping Precision: SF	PECIFIC Section: 0	1 Qtr: NW
Elevation:	25 ft	Symbol Type: PC	DINT Meridian: M	I
Location:	NATOMAS EAST MAIN DRAIN	AGE CANAL, SOUTH OF EAST LEVEE ROAD	AND 0.2 MILE EAST OF NORTHGATE BLV	D, SACRAMENTO.
Ecological:		; NEST IS 1/3 OF THE WAY DOWN FROM TH DERSTORY OF GRAPES, WILLOWS, BUTTO		
Threat:	MAIN THREAT IS HUMAN DIS	TURBANCE FROM TRANSIENTS/HOMELESS	PEOPLE THAT USE THE AREA.	
General:	1 ADULT AND 3 YOUNG NEAF	R FLEDGING ("BRANCHERS") OBSERVED ON	I 17 JULY 1996.	
	SAC COUNTY-PARKS & REC	, , , , , , , , , , , , , , , , , , , ,		
Owner/wattager.	ONG COOM I PENING & NEC			

Agelaiu	s tricolor				
trico	olored blackbird			Element Code: ABPBXB0020	
	Statu	is —————	NDDB Element Ranks ———	Other Lists -	
	Federal: None		Global: G2G3	CDFG Status: SC	
	State: None		State: S2		
	Habitat As				
	•	•		L VALLEY & VICINITY, LARGELY ENDEMIC TO C	
	Micro: REQUIR	ES OPEN WATER, PROTECTED N	IESTING SUBSTRATE, & FORAGING ARE	A WITH INSECT PREY WITHIN A FEW KM OF T	HE COLONY.
	Occurrence No.	162 Map Index: 11	126 EO Index: 2467	78 — Dates La	st Seen ———
	Occ Rank:			Element:	197X-XX-XX
SENSITIVE *	_	Natural/Native occurrence		Site:	1992-06-25
		Possibly Extirpated Unknown		Record Last Updated:	1992-07-02
		DE HAVEN, R. (OBS)	•	tioonia and spenion	
		SACRAMENTO WEST (3812155/51	13D)		
	County Summary:	•			
		1010			
SENSITIVE *	Lat/Long:			Township:	
	UTM: Radius:		Manager Basetstand	Range:	04
	Elevation:		Mapping Precision: Symbol Type:	Section: Meridian:	Qtr:
-	Location	*SENSITIVE* Location information			
			**		1.0040
			•	t of Fish and Game, for more information: (916) 324	1-3012.
	Ecological:	NESTING IN MUSTARD AND THIS	ITLE.		
	Owner/Manager:	•			

Sacramento perch		Element Code: AFCQB07010		B07010	
State	us ————	NDDB Element Ranks	Oth	er Lists ———	
Federal: None		Global: G3	С	DFG Status: SC	
State: None		State: S1			
Habitat As	sociations				
General: HISTOR	RICALLY FOUND IN THE SLOUG	HS, SLOW-MOVING RIVERS, AND LAKE	S OF THE CENTRAL VALLEY.		
Micro: PREFEI	R WARM WATER. AQUATIC VE	GETATION IS ESSENTAL FOR YOUNG.	TOLERATE WIDE RANGE OF PH	YSICO-CHEMICAL V	VATER CONDITIONS
Occurrence No.	4 Map Index:	42795 EO Index:	42795	Dates La	st Seen
Occ Rank:	Unknown			Element:	1973-XX-XX
•	Natural/Native occurrence			Site:	1973-XX-XX
	Presumed Extant		Rec	ord Last Updated:	2000-04-19
	Unknown ACEITUNO & NICOLA 1976 (LI	T)	No.	oru Lust opuuteu.	2000 01 10
		<u> </u>			
•	SACRAMENTO WEST (381215	55/5130}			
County Summary:	SACRAMENTO				
_	38.50841° / -121.53532°		То	wnship: 08N	
	Zone-10 N4263243 E627705			Range: 04E	
Area: Elevation:		Mapping Precisio		Section: 99 Meridian: X	Qtr: XX
Elevation;	10 ft	Syllude Typ	e. Foligon	neriulari. A	
Location:	LAKE GREENHAVEN (AKA BR	ICKYARD POND), W OF HAVENSIDE DE	& N OF GLORIA DR, BETWEEN I	5 & SACRAMENTO	RIVER, SACRAMENT
Location Detail:	PRESENT IN LAKE AS OF 197	3, INFORMATION REPORTED AS BEING	TAKEN FROM FISH & GAME FILE	S.	
Ecological:	PAST FLOODPLAIN LAKE, IN	THE GARCIA BEND AREA OF THE SACI	RAMENTO RIVER.		
Threat:	INTRODUCED PREDATORS A	ND COMPETITORS, POOR WATER QUA	ALITY		
		E REPORTED AS STILL EXTANT IN 197			
Owner/Manager:		E ILLI ON IED AS STILL EXTAIN IN 191.	••		

Full Condensed Report for Selected Elements - Multiple Records per Page

The Towers - Sacramento East and Sacramento West Quads Athene cunicularia Element Code: ABNSB10010 burrowing owl Status NDDB Element Ranks Other Lists Federal: None Global: G4 CDFG Status: SC State: None State: S2 **Habitat Associations** General: (BURROW SITES) OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION. MICRO: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL. Occurrence No. 59 Map Index: 11348 EO Index: 25458 Dates Last Seen Occ Rank: Unknown Element: 1974-02-XX Origin: Natural/Native occurrence Site: 1974-02-XX Presence: Presumed Extant 1989-08-10 Record Last Updated: Trend: Unknown Main Source: VINCENTY, J. 1974 (PERS) Quad Summary: SACRAMENTO EAST (3812154/512C) County Summary: SACRAMENTO Lat/Long: 38,57712º / -121.46245º Township: 08N UTM: Zone-10 N4270972 E633931 Range: 05E Mapping Precision: NON-SPECIFIC Radius: 1/5 mile Section: XX Qtr: XX Elevation: 25 ft Symbol Type: POINT Meridian: М Location: VICINITY OF MCKINLEY PARK, SW OF CALIFORNIA STATE EXPOSITION, SACRAMENTO. General: SEVERAL COLONIES OBSERVED IN GROUND BURROWS IN 1974; NESTING WAS SUCCESSFUL. Owner/Manager: UNKNOWN Occurrence No. 60 Map Index: 11437 EO Index: 25460 Dates Last Seen Element: 1974-02-XX Occ Rank: None Origin: Natural/Native occurrence Site: 2000-10-19 Presence: Extirpated Record Last Updated: 2003-05-07 Trend: Decreasing Main Source: VINCENTY, J. 1974 (LIT) Quad Summary: SACRAMENTO EAST (3812154/512C) County Summary: SACRAMENTO Lat/Long: 38.57270° / -121.41573° Township: 08N UTM: Zone-10 N4270550 E638009 Range: 05E Radius: Mapping Precision: NON-SPECIFIC 1/10 mile Section: 03 Ofr: XX Elevation: 25 ft Symbol Type: POINT Meridian: М Location: IMMEDIATELY SW OF THE JUNCTION OF HOWE AVE AND FAIR OAKS BLVD, SACRAMENTO. Ecological: THE SITE IS NOW COMPLETELY DEVELOPED WITH OFFICE BUILDINGS, LANDSCAPING AND MANICURED LAWNS. THERE IS NO REMAINING HABITAT FOR BURROWING OWLS. General: SEVERAL COLONIES OBSERVED IN GROUND BURROWS DURING 1974: NESTING WAS SUCCESSFUL. Owner/Manager: UNKNOWN Occurrence No. 61 Map Index: 11424 EO Index: 25459 Dates Last Seen Occ Rank: Unknown Element: 1974-02-XX Origin: Natural/Native occurrence Site 1974-02-XX Presence: Presumed Extant Record Last Updated: 2003-05-07 Trend: Unknown Main Source: VINCENTY, J. 1974 (LIT) Quad Summary: SACRAMENTO EAST (3812154/512C) County Summary: SACRAMENTO Lat/Long: 38.55960° / -121.42387° Township: 08N UTM: Zone-10 N4269084 E637326 Range: 05F Area: 343.4 ac Mapping Precision: NON-SPECIFIC Section: 10 Qtr: XX Elevation: 20 ft Symbol Type: POLYGON Meridian: М Location: SACRAMENTO STATE COLLEGE AND ADJACENT LEVEE AREAS ALONG THE AMERICAN RIVER, SACRAMENTO. Location Detail: LEVEE BURROWS WERE ON THE WEST SIDE OF THE LEVEE ON THE WEST BANK OF THE AMERICAN RIVER. General: "LARGE NUMBERS" OBSERVED ALONG THE LEVEE IN LATE 1960'S & EARLY 1970'S. 14 NESTING COLONIES OBSERVED IN GROUND BURROWS

Owner/Manager: CSU-SACRAMENTO (PART)

ON THE UNIVERSITY IN 1974; MOST NESTING WAS UNSUCCESSFUL.

burrowing owl	ıs ————	NDDB Element Ranks ————————————————————————————————————	ode: ABNSB10010 Other Lists	
Federal: None State: None		Global: G4 State: S2	CDFG Status: S	0
•	W SITES) OPEN, DRY ANNUAL OR PERI	ENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHA BURROWING MAMMALS, MOST NOTABLY, THE CALIF		
Occurrence No.	127 Map Index: 20688	EO Index: 9327		Last Seen
Occ Rank:	Good Natural/Native occurrence		Elemer Sit	
-	Presumed Extant		5	
	Unknown		Record Last Update	d: 2003-12-03
	KOFORD, E. 1990 (OBS)			
-	SACRAMENTO EAST (3812154/512C)		•	•
County Summary:				
	38.51679° / -121.40308° Zone-10 N4264365 E639219		Township: 08N Range: 05E	
OTM: Area:	20ne-10 N4264365 E639219 163.9 ac	Mapping Precision: NON-SPECIFIC	Range: 05E Section: 26	Qtr: XX
Elevation:		Symbol Type: POLYGON	Meridian: M	
		RMS AND LEVEES PLANTED IN INTRODUCED GRASS E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE. WITH AT LEAST 14 IN	MENT.	T. 4 ADULTS OBSERV
General:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN TIVE BURROWS OBSERVED DURING A 2003 STUDY	MENT. IDIVIDUAL BIRDS PRESEN	
General:	1990: AT LEAST 6 NESTING BURROWS	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN TIVE BURROWS OBSERVED DURING A 2003 STUDY	MENT. IDIVIDUAL BIRDS PRESEN	
General: Owner/Manager: Occurrence No.	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467 Map Index: 48312	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN TIVE BURROWS OBSERVED DURING A 2003 STUDY	MENT. IDIVIDUAL BIRDS PRESEN '. BOTH ADULTS AND JUV	ENILES OBSERVED.
General: Owner/Manager: Occurrence No. Occ Rank:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467 Map Index: 48312 Fair	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN TIVE BURROWS OBSERVED DURING A 2003 STUDY	MENT. IDIVIDUAL BIRDS PRESEN . BOTH ADULTS AND JUV	ENILES OBSERVED. s Last Seen nt: 2002-06-28
General: Owner/Manager: Occurrence No. Occ Rank: Origin:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467 Map Index: 48312	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN TIVE BURROWS OBSERVED DURING A 2003 STUDY	MENT. IDIVIDUAL BIRDS PRESEN . BOTH ADULTS AND JUV	ENILES OBSERVED.
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN TIVE BURROWS OBSERVED DURING A 2003 STUDY	MENT. IDIVIDUAL BIRDS PRESEN . BOTH ADULTS AND JUV	s Last Seen
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467 Map Index: 48312 Fair Natural/Native occurrence Presumed Extant Unknown STACKHOUSE, E. 2002 (OBS)	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN TIVE BURROWS OBSERVED DURING A 2003 STUDY	MENT. IDIVIDUAL BIRDS PRESEN '. BOTH ADULTS AND JUV	s Last Seen
Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN TIVE BURROWS OBSERVED DURING A 2003 STUDY	MENT. IDIVIDUAL BIRDS PRESEN '. BOTH ADULTS AND JUV	s Last Seen
Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467 Map Index: 48312 Fair Natural/Native occurrence Presumed Extant Unknown STACKHOUSE, E. 2002 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN TIVE BURROWS OBSERVED DURING A 2003 STUDY	MENT. IDIVIDUAL BIRDS PRESEN DOTH ADULTS AND JUV — Date Eleme Si Record Last Update	s Last Seen
Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467 Map Index: 48312 Fair Natural/Native occurrence Presumed Extant Unknown STACKHOUSE, E. 2002 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.51921° / -121.49841°	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN TIVE BURROWS OBSERVED DURING A 2003 STUDY	MENT. IDIVIDUAL BIRDS PRESEN BOTH ADULTS AND JUV — Date Elemei Si Record Last Update Township: 08N	s Last Seen
Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467 Map Index: 48312 Fair Natural/Native occurrence Presumed Extant Unknown STACKHOUSE, E. 2002 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.51921° / -121.49841° Zone-10 N4264493 E630903	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN LIVE BURROWS OBSERVED DURING A 2003 STUDY EO Index: 48312	MENT. IDIVIDUAL BIRDS PRESEN DOTH ADULTS AND JUV — Date Eleme Si Record Last Update	s Last Seen
Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467 Map Index: 48312 Fair Natural/Native occurrence Presumed Extant Unknown STACKHOUSE, E. 2002 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.51921° / -121.49841° Zone-10 N4264493 E630903 80 meters	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN TIVE BURROWS OBSERVED DURING A 2003 STUDY	MENT. IDIVIDUAL BIRDS PRESEN '. BOTH ADULTS AND JUV ———————————————————————————————————	s Last Seen t: 2002-06-28 ee: 2002-06-28 ed: 2002-07-18
Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467 Map Index: 48312 Fair Natural/Native occurrence Presumed Extant Unknown STACKHOUSE, E. 2002 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.51921° / -121.49841° Zone-10 N4264493 E630903 80 meters 15 ft	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN ITIVE BURROWS OBSERVED DURING A 2003 STUDY EO Index: 48312 Mapping Precision: SPECIFIC	MENT. IDIVIDUAL BIRDS PRESEN BOTH ADULTS AND JUV — Date Eleme Si Record Last Update Township: 08N Range: 04E Section: 25	s Last Seen t: 2002-06-28 ee: 2002-06-28 ed: 2002-07-18
Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467 Map Index: 48312 Fair Natural/Native occurrence Presumed Extant Unknown STACKHOUSE, E. 2002 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.51921° / -121.49841° Zone-10 N4264493 E630903 80 meters 15 ft	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN TIVE BURROWS OBSERVED DURING A 2003 STUDY EO Index: 48312 Mapping Precision: SPECIFIC Symbol Type: POINT	MENT. IDIVIDUAL BIRDS PRESEN BOTH ADULTS AND JUV — Date Eleme Si Record Last Update Township: 08N Range: 04E Section: 25	s Last Seen tt: 2002-06-28 ee: 2002-06-28 ed: 2002-07-18
Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location Detail:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467 Map Index: 48312 Fair Natural/Native occurrence Presumed Extant Unknown STACKHOUSE, E. 2002 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.51921° / -121.49841° Zone-10 N4264493 E630903 80 meters 15 ft SACRAMENTO; NORTHWEST CORNER 60 FT NORTH OF CDF&G HANGER.	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IM ITIVE BURROWS OBSERVED DURING A 2003 STUDY EO Index: 48312 Mapping Precision: SPECIFIC Symbol Type: POINT OF SACRAMENTO EXECUTIVE AIRPORT.	MENT. IDIVIDUAL BIRDS PRESEN BOTH ADULTS AND JUV — Date Elemei Si Record Last Update Township: 08N Range: 04E Section: 25 Meridian: M	s Last Seen nt: 2002-06-28 re: 2002-06-28 rd: 2002-07-18 Qtr: NW
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location Detail: Ecological:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467 Map Index: 48312 Fair Natural/Native occurrence Presumed Extant Unknown STACKHOUSE, E. 2002 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.51921° / -121.49841° Zone-10 N4264493 E630903 80 meters 15 ft SACRAMENTO; NORTHWEST CORNER 60 FT NORTH OF CDF&G HANGER. HABITAT CONSISTS OF FIELD WITH AV	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN ITIVE BURROWS OBSERVED DURING A 2003 STUDY EO Index: 48312 Mapping Precision: SPECIFIC Symbol Type: POINT OF SACRAMENTO EXECUTIVE AIRPORT. YENA FATUA, LOLIUM MULTIFLORUM AND YELLOW SIND CONSISTS OF AN AIRPORT.	MENT. IDIVIDUAL BIRDS PRESEN BOTH ADULTS AND JUV — Date Elemei Si Record Last Update Township: 08N Range: 04E Section: 25 Meridian: M	s Last Seen nt: 2002-06-28 re: 2002-06-28 rd: 2002-07-18 Qtr: NW
Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location Detail: Ecological:	1990: AT LEAST 6 NESTING BURROWS A BURROW SITE ON 7 MAR 2003. 11 AC PVT, DOD-SACRAMENTO ARMY DEPOT 467 Map Index: 48312 Fair Natural/Native occurrence Presumed Extant Unknown STACKHOUSE, E. 2002 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.51921° / -121.49841° Zone-10 N4264493 E630903 80 meters 15 ft SACRAMENTO; NORTHWEST CORNER 60 FT NORTH OF CDF&G HANGER. HABITAT CONSISTS OF FIELD WITH AV LOAM. 0% SLOPE. SURROUNDING LAI	E OF ARMY DEPOT AND CONVERSION TO DEVELOP SCATTERED OVER THIS SITE, WITH AT LEAST 14 IN TIVE BURROWS OBSERVED DURING A 2003 STUDY EO Index: 48312 Mapping Precision: SPECIFIC Symbol Type: POINT OF SACRAMENTO EXECUTIVE AIRPORT. VENA FATUA, LOLIUM MULTIFLORUM AND YELLOW SIND CONSISTS OF AN AIRPORT. SED FOR DEVELOPMENT IN 2002.	MENT. IDIVIDUAL BIRDS PRESEN BOTH ADULTS AND JUV — Date Elemei Si Record Last Update Township: 08N Range: 04E Section: 25 Meridian: M	s Last Seen nt: 2002-06-28 re: 2002-06-28 rd: 2002-07-18 Qtr: NW

burrowing owl Statu	us ————	- NDDB Element Ranks	Element Code: ABNSB10 Other L		
Federal: None State: None		Global: G4 State: S2	CDF	G Status: SC	
· ·	sociations DW SITES) OPEN, DRY ANNUAL OR PEI RRANEAN NESTER, DEPENDENT UPON	•			
-	•	EO Index: 486	664	— Dates La Element: Site:	1974-02-XX 1974-02-XX
Trend:	Unknown VICENTY, J. 1974 (LIT)		Record	Last Updated:	2003-05-07
Quad Summary: County Summary:	SACRAMENTO EAST (3812154/512C) SACRAMENTO				
UTM:	38.57733° / -121.43523° Zone-10 N4271035 E636302 25.6 ac 25 ft	Mapping Precision: N Symbol Type: F	ION-SPECIFIC Sec	ship: 08N ange: 05E ction: 04 dian: M	Qtr: XX
Location:	VICINITY OF ELVAS AND 51ST STREE				
General: Owner/Manager:	2 BURROWS OBSERVED IN AREA DUF UNKNOWN	RING 1974 NEST SURVEY.			
	None Natural/Native occurrence	EO Index: 49	112	Dates La Element: Site:	ast Seen 1997-03-06 1997-03-06
Trend:	Possibly Extirpated Unknown BAXTER, R. 1997 (PERS COM)		Record	Last Updated:	2002-10-23
	SACRAMENTO WEST (3812155/513D)				
Lat/Long:	38.55183° / -121.58357° Zone-10 N4267995 E623423			ship: 08N ange: 04E	
Radius: Elevation:	1/10 mile 10 ft	Mapping Precision: 1 Symbol Type: F	ION-SPECIFIC Sec	ction: 07 idian: M	Qtr: SW
	ADJACENT TO THE DEEP WATER SHIP BURROW WAS LOCATED 170' FEET S				N
Ecological:	HABITAT CONSISTS OF A SMALL BENGASSES AND WEEDS AND ALSO SU	CH ON THE LAND (EAST) SIDE OF PPORTED GROUND SQUIRRELS.			
General:	THREATENED BY ROAD/LEVEE MAINT BURROWING OWL OBSERVED AT ITS ACTIVITIES MAY HAVE CAUSED ABAN	BURROW ON 4 AND 6 MAR 1997;	OWL WAS NOT OBSERVED ON A	A 12 MAR 1997 F	REVISIT, AND GRA
Owner/Manager:	RECLAMATION DISTRICT 900				
	•	EO Index: 51	256	Dates L Element: Site:	
Trend:	Unknown MVZ 2003 (MUS)		Record	I Last Updated:	2004-02-17
Quad Summary: County Summary:	SACRAMENTO EAST (3812154/512C), SACRAMENTO	RIO LINDA (3812164/512B)			
		Mapping Precision: Symbol Type: l	R NON-SPECIFIC Se	nship: 09N ange: 05E ction: 21 idian: M	Qtr: XX
	HAGGINWOOD. VICINITY OF ARCADE COLLECTION FROM "HAGGIN'S RANC SACRAMENTO.	•		WOOD NEIGHB	ORHOOD OF
General:	MVZ EGG SET #893 COLLECTED 8 MA	Y 1901 BY R. H. ELLIOTT			

Branchinecta lynchi							
vernal pool fairy shrimp				Element Code:			
Federal: Threate		NDDB E Globa	lement Ranks —		Other Lists		
State: None	ned		n: G3 e: S2S3		CDFG Statu	15.	
Habitat As	ssociations —						
	IIC TO THE GRASSLANDS OF TI T SMALL, CLEAR-WATER SAND		•	· ·			
Occurrence No.	32 Map Index:	31558	EO Index:	6893		Dates La	
Occ Rank:	Fair Natural/Native occurrence				E	Element: Site:	1995-02-08 1995-04-21
	Presumed Extant						
	Unknown	CODB 4005 // IT			Record Last U	Jpdated:	1995-08-25
	FOSTER WHEELER ENVIRON						
Quad Summary: County Summary:	SACRAMENTO EAST (3812154	4/01ZC)					
						0011	
	38.51137° / -121.39697° Zone-10 N4263773 E639762				Township: Range:	08N 05E	
Area:	5.3 ac		Mapping Precision		Section:	26	Qtr: SE
Elevation:	40 ft		Symbol Type	POLYGON	Meridian:	М	
	FORMER SACRAMENTO ARM						
	FOUND ONLY IN SEASONAL V						
Ecological:	53 PONDED WATER AREAS S SHALLOW SWALES, TIRE TRA						
General:	BRACHINECTA LYNCHI FOUN	ID IN ONLY 3 OF 53 S	SITES. FOUND ONLY	Y BETWEEN 1/31/95 & 2/8/9	5. 2 POOLS HAD	POP. ES	T. <50, 1 POOL >50.
Owner/Manager:	ALSO FOUND LINDERIELLA O DOD-BT COLLINS RESERVE T	·	POLTO COLLECTED	AND DEFUSITED IN CAS; I	MONE POOL IN	O IN KEP	OM.
	25	20440		007		Detr -	at Saan
Occurrence No. Occ Rank:	•	32443	EO Index:	03/		Dates La Element:	st Seen
Origin:	Natural/Native occurrence					Site:	1995-01-05
	Presumed Extant Unknown				Record Last U	Jpdated:	1996-03-11
	SUGNET & ASSOC. 1995 (LIT)	i			Last t	- pautou.	, ,
	CARMICHAEL (3812153/512D)		ST (3812154/512C)				
County Summary:							
	38.50564° / -121.37821°				Township:	08N	
	Zone-10 N4263165 E641409 15.7 ac		Mapping Precision	r NON-Special	Range:	05E 36	Qtr: NE
Area: Elevation:				n: NON-SPECIFIC e: POLYGON	Section: Meridian:	36 M	GU. NC
Location:	1.2 KM ESE OF ELDER CREEK	K ROAD X FLORIN PI	ERKINS ROAD; SE C	F THE FORMER SACRAME	NTO ARMY DEF	°OT.	
Location Detail:	ELDER CREEK PROPERTY. B	RANCHINECTA LYN	CHI WERE FOUND I	N TWO OF 90 SAMPLED W	ETLANDS.		
Ecological:	HARDPAN VERNAL POOL IN	ANNUAL GRASSLAN	D.				
Threat:	RURAL AGRICULTURE; URBA	N DEVELOPMENT C	CCURING IN VICINI	TY.			
General:	POOL #46: 12/21/1994: >50 AD #51: 12/21/94: >50 ADULTS OF			,	NS COLLECTED	AND DEPO	OSITED IN CAS; POOL
Owner/Manager:	PVT-PIPE TRADES TRUST FU						

Branchinecta lynchi				
vernal pool fairy shrimp			Element Code: ICBRA03030	
		NDDB Element Ranks	Other Lists	
Federal: Threaten State: None	ieu	Global: G3 State: S2S3	CDFG Status:	
	sociations			
		RAL VALLEY, CENTRAL COAST MTNS, ANI	D SOUTH COAST MTNS, IN ASTATIC RAIL	N-FILLED POOLS.
Micro: INHABIT	SMALL, CLEAR-WATER SANDSTONE-D	PEPRESSION POOLS AND GRASSED SWAI	LE, EARTH SLUMP, OR BASALT-FLOW DI	EPRESSION POOLS.
Occurrence No.	122 Map Index: 33380	EO Index: 28755	— Dates La	st Seen
Occurrence No. Occ Rank:	·	€0 index: ∠8/55	Element:	1996-03-10
Origin:	Natural/Native occurrence		Site:	1996-03-10
	Presumed Extant Unknown		Record Last Updated:	1996-08-05
	MARTIN, D. 1996 (OBS)		and opunied.	· -
	SACRAMENTO EAST (3812154/512C)	 		
County Summary:	·	· .		
Lat/Long:	38.53209° / -121.39920°		Township: 08N	
UTM:	Zone-10 N4266068 E639528		Range: 05E	a. 30.
Area: Elevation:	6.3 ac 40 ft	Mapping Precision: SPECIFIC Symbol Type: POLYGON		Qtr: XX
				DEET CLOSE
		ACTION COMPANY (RAILROAD) RIGHT-OI	·	
Location Detail:	LOCATED IN A SERIES OF PONDED DE DEPRESSIONS.	PRESSIONS ALONG THE RAILROAD RIGH	m 1-UF-WAY, B, LYNCHI FOUND IN 5 OF 2	/ SAMPLED
Ecological:		RESSIONS; OTHER RARE SPECIES FOUND) INCLUDE BRANCHINECTA MESOVALLE	NSIS (UNDESCRIBED)
,	AND LINDERIELLA OCCIDENTALIS.			
Threat:	CONSTANT DISTURBANCE BY RAILRO	AD TRUCKS & OTHERS DRIVING THROUG	3H POOLED AREAS. ALSO TIRES & DEBR	IS IN POOLED AREAS.
General:	>50 INDIVIDUALS OBSERVED IN FIVE C	OF THE DEPRESSIONS DURING SURVEYS	CONDUCTED FROM 6 FEBRUARY TO 10) MARCH 1996.
Owner/Manager:	PVT .			
^ ··	131	FALL 177	Dates La	st Seen
Occurrence No. Occ Rank:	•	EO Index: 12989	Dates La Element:	1992-04-03
Origin:	Natural/Native occurrence		Site:	1992-04-03
Presence:	Presumed Extant		Record Last Updated:	1996-08-05
	Unknown KOFORD, É. 1992 (PERS)		Record Last Updated:	.000-00-00
	SACRAMENTO EAST (3812154/512C)			
County Summary:				
	38.51058° / -121.40219°		Township: 08N	
_	Zone-10 N4263677 E639309		Range: 05E	
Radius:	80 meters	Mapping Precision: SPECIFIC	C Section: 26	Qtr: SW
Elevation:	40 ft	Symbol Type: POINT	Meridian: M	
Location:	RAILROAD DITCH AT 47TH AVENUE (EDEPOT.	LDER CREEK RD) AND SPTRR, NEAR POV	WER INN ROAD; NEAR SW CORNER OF \$	SACRAMENTO ARMY
Location Detail:	SPTRR IS SOUTHERN PACIFIC TRACTI	ION RR, WHICH RUNS SE FROM CORNER	₹ OF 65TH ST & HWY 50.	
Ecological:	RAILROAD DITCH.			
General:	KOFORD OBSERVED B. LYNCHI IN DITO OBSERVED.	CH DURING SURVEY IN SPRING OF 1992;	; LINDERIELLA OCCIDENTALIS AND LEPII	DURUS PACKARDI ALSO
Owner/Manager:	PVT-SOUTHERN PACIFIC RR			

Br	anchinecta lynchi							
	vernal pool fairy shrimp				Element Code: ICBRA03030			
_	State	ıs	NDDB Elemen	nt Ranks	Other Lists			
	Federal: Threater	ned	Global: G3		CDFG State	ıs:		
	State: None		State: S2	S3				
_	Habitat As	sociations						
	General: ENDEM	IC TO THE GRASSLANDS OF T	HE CENTRAL VALLEY, CE	NTRAL COAST MTN	S, AND SOUTH COAST MTNS, IN AST	TATIC RAII	N-FILLED POOLS.	
	Micro: INHABIT	SMALL, CLEAR-WATER SAND	STONE-DEPRESSION PO	OLS AND GRASSED	SWALE, EARTH SLUMP, OR BASALT	-FLOW DI	EPRESSION POOLS	S.
	Occurrence No.	166 Map Index:	33692	EO Index: 30609	_	Dates La	st Seen	_
	Occ Rank:	Unknown			ı	Element:	1992-04-03	
		Natural/Native occurrence				Site:	1992-04-03	
		Presumed Extant			Boomed Look I	la data di	1998-08-10	
		Unknown	.00		Record Last l	puateu:	1990-00-10	
	Main Source:	SUGNET & ASSOC. 1993 (PEF	(5)					
	Quad Summary:	FLORIN (3812144/496B), SACI	RAMENTO EAST (3812154	/512C)				
	County Summary:	SACRAMENTO						
	Lat/Long:	38.51048° / -121.39984°			Township:	08N		
	UTM:	Zone-10 N4263669 E639514			Range:	05E		
		1,513.2 ac	Мар	ping Precision: SPE		35	Qtr: XX	
	Elevation:	35 ft		Symbol Type: POL	YGON Meridian:	М		
	Location:	SOUTH OF FRUITRIDGE RD,	NORTH OF FLORIN RD, E.	AST OF POWER INN	RD, & WEST OF FLORIN PERKINS R	D.		
	Location Detail:	ROADSIDE DITCHES LOCATE	D SOMEWHERE IN SECT	ONS 26 AND 35.				•
	Ecological:	MOST OF SECTION 26 IS URE	BANIZED.					
	General:	A MANMADE ROADSIDE DITO	H IN SECTION 35 CONTA	NED B. LYNCHI AND	LEPIDURUS PACKARDI.			
	Owner/Manager:	UNKNOWN						

eo swainsoni				
Swainson's hawk			ement Code: ABNKC19070	
Federal: None State: Threater		NDDB Element Ranks Global: G5 State: S2	Other Lists CDFG Status:	
,	•	ES IN JUNIPER-SAGE FLATS, RIPARIAN ARE REAS SUCH AS GRASSLANDS, OR ALFALFA (ENT POPULATIONS.
	Unknown Natural/Native occurrence	EO Index: 7542	— Dates La: Element: Site:	st Seen 1993-07-15 1993-07-15
Trend:	Presumed Extant Stable DEPT OF FISH & GAME 1984 (PERS)		Record Last Updated:	1993-09-08
Quad Summary: County Summary:	SACRAMENTO WEST (3812155/513D) SACRAMENTO			
UTM:	38.52605° / -121.52746° Zone-10 N4265211 E628359 80 meters 10 ft	Mapping Precision: SPECIFIC Symbol Type: POINT	Township: 08N Range: 04E Section: 22 Meridian: M	Qtr: SE
Location:	SACRAMENTO RIVER, RM-54.20(L), ON	THE SOUTH EDGE OF CHICORY BEND, WES	ST OF SACRAMENTO.	
Ecological:	NEST TREE IS A MEDIUM-SIZED COTTO FIELDS AND FALLOW FIELDS.	ONWOOD, LOCATED ABOUT 60 FEET FROM	THE RIVER; SURROUNDING FORAGE	CONSISTS OF WHE
	FLEDGED IN 1984, AND 1 YOUNG FLED	:, 1979-91 (EXCEPT POSSIBLY IN 1980); 2 YO GED IN 1988, 2 YOUNG PRODUCED IN 1993.	UNG FLEDGED IN 1979, 2 YOUNG FLE	EDGED IN 1981, 1 YO
Owner/Manager:	UNKNOWN			
Occurrence No. Occ Rank: Origin:		EO Index: 27162	— Dates La Element: Site:	st Seen 1993-07-15 1993-07-15
Presence: Trend:	Presumed Extant Unknown DEPT OF FISH & GAME 1984 (PERS)		Record Last Updated:	1998-11-10
Quad Summary: County Summary:	SACRAMENTO WEST (3812155/513D) YOLO			
UTM:	38.60358° / -121.53071° Zone-10 N4273810 E627938 80 meters 25 ft	Mapping Precision: SPECIFIC Symbol Type: POINT	Township: 99X Range: 99X Section: XX Meridian: X	Qtr: SW
Location:	SACRAMENTO RIVER, RM-61.5(R), WES	ST OF DISCOVERY PARK, SACRAMENTO		
		DNWOOD, LOCATED 30 FEET FROM THE RIV	/ER; SURROUNDING FORAGING HABI	TAT CONSISTS OF
	1988) SINCE, SUCCESSFULLY FLEDGIN	RVED SOARING IN 1983. NEST SITE DISCOV NG 1-2 YOUNG EVERY YEAR EXCEPT 1991. 1		•
Owner/Manager:	PVT	:		
_	Unknown Natural/Native occurrence	EO Index: 27102	— Dates La Element: Site:	1991-XX-XX 1991-XX-XX
Trend:	Presumed Extant Unknown DEPT OF FISH & GAME 1984 (PERS)		Record Last Updated:	1993-04-13
	SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO			
UTM:	38.61295° / -121.55718° Zone-10 N4274813 E625616 1/5 mile	Mapping Precision: NON-SPECII Symbol Type: POINT	Township: 09N Range: 04E FIC Section: 20 Meridian: M	Qtr: SW
Lievation:			Metaldii W	
	SACRAMENTO RIVER, RM-63.6(R), 1 MI	ILE NW OF I-80, SACRAMENTO.		
	NEST TREE IS A COTTONWOOD, LOCA AGRICULTURAL FIELDS, PLANTED MAI	ATED WITHIN GOOD RIPARIAN VEGETATION INLY IN TOMATOES.	; SURROUNDING FORAGING HABITAT	CONSISTS OF
Ecological:	AGRICULTURAL FIELDS, PLANTED MAI DFG SWHA #SA032. 2 ADULTS AND NE			

Statı	ıs	NDDB Element Ranks	ement Code: ABNKC19070 Other Lists		
Federal: None State: Threater		Global: G5 State: S2	CDFG Status	s:	
,	IG) BREEDS IN STANDS WITH FE	W TREES IN JUNIPER-SAGE FLATS, RIPARIAN ARE		ING ROD	ENT POPULATIO
Occurrence No.	287 Map Index: 11	1256 EO Index: 27027		Dates La	st Seen
	Natural/Native occurrence		E	lement: Site:	1991-XX-XX 1991-XX-XX
Trend:	Presumed Extant Unknown DEPT. OF FISH & GAME 1986 (LI	т)	Record Last U	pdated:	1998-11-10
Quad Summary: County Summary:	SACRAMENTO WEST (3812155/5 SACRAMENTO	513D)			
UTM:	38.60226° / -121.51233° Zone-10 N4273690 E629541 80 meters 20 ft	Mapping Precision: SPECIFIC Symbol Type: POINT	Range:		Qtr: SE
Location:	SACRAMENTO RIVER, RM-60.5(L	L), JUST UPSTREAM FROM DISCOVERY PARK, SAC	RAMENTO.		
Ecological:	NEST TREE IS A MEDIUM-SIZED	COTTONWOOD, 40 FEET FROM THE RIVER; SURR	OUNDING FORAGING HABITA	AT CONS	ISTS OF GRASS
	WEEDY FIELDS.				
Threat:		JRBANCE ACROSS THE RIVER FROM MAJOR LAND	DEVELOPMENT/CONSTRUC	TION.	
	POSSIBLE THREAT FROM DISTU DFG SWHA #SA016. NEST WITH	JRBANCE ACROSS THE RIVER FROM MAJOR LAND I TWO YOUNG FOUND ON 19 JUNE 1981. BIRDS WE 'S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE	ERE OBSERVED SOARING 198		
General:	POSSIBLE THREAT FROM DISTU DFG SWHA #SA016. NEST WITH	I TWO YOUNG FOUND ON 19 JUNE 1981. BIRDS WE	ERE OBSERVED SOARING 198		
General:	POSSIBLE THREAT FROM DISTU DFG SWHA #SA016. NEST WITH FLEDGED. IN 1990, TWO ADULT CITY OF SACRAMENTO	I TWO YOUNG FOUND ON 19 JUNE 1981, BIRDS WE 'S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE	ERE OBSERVED SOARING 191 YOUNG WAS FLEDGED	83-85, IN	
General: Owner/Manager: Occurrence No. Occ Rank:	POSSIBLE THREAT FROM DISTUDES SWHA #SA016. NEST WITH FLEDGED. IN 1990, TWO ADULT. CITY OF SACRAMENTO 326 Map Index: 2: Good	I TWO YOUNG FOUND ON 19 JUNE 1981, BIRDS WE 'S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE	ERE OBSERVED SOARING 191 YOUNG WAS FLEDGED	83-85, IN Dates La	1986, ONE YOU!
General: Owner/Manager: Occurrence No. Occ Rank: Origin:	POSSIBLE THREAT FROM DISTU DFG SWHA #SA016. NEST WITH FLEDGED. IN 1990, TWO ADULT. CITY OF SACRAMENTO 326 Map Index: 2: Good Natural/Native occurrence	I TWO YOUNG FOUND ON 19 JUNE 1981, BIRDS WE 'S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE	ERE OBSERVED SOARING 191 YOUNG WAS FLEDGED	83-85, IN Dates La	1986, ONE YOU!
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence:	POSSIBLE THREAT FROM DISTUDES SWHA #SA016. NEST WITH FLEDGED. IN 1990, TWO ADULT. CITY OF SACRAMENTO 326 Map Index: 2: Good	I TWO YOUNG FOUND ON 19 JUNE 1981, BIRDS WE 'S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE	ERE OBSERVED SOARING 191 YOUNG WAS FLEDGED	Pates La	1986, ONE YOU!
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend:	POSSIBLE THREAT FROM DISTUDED SWHA #SA016. NEST WITH FLEDGED. IN 1990, TWO ADULT. CITY OF SACRAMENTO 326 Map Index: 2: Good Natural/Native occurrence Presumed Extant	I TWO YOUNG FOUND ON 19 JUNE 1981, BIRDS WE 'S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE	ERE OBSERVED SOARING 191 YOUNG WAS FLEDGED ——————————————————————————————————	Pates La	1986, ONE YOUR sst Seen 1991-XX-XX 1993-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	POSSIBLE THREAT FROM DISTUDES SWHA #SA016, NEST WITH FLEDGED. IN 1990, TWO ADULT. CITY OF SACRAMENTO 326 Map Index: 2: Good Natural/Native occurrence Presumed Extant Unknown	I TWO YOUNG FOUND ON 19 JUNE 1981. BIRDS WE'S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE 1079 EO Index: 9026	ERE OBSERVED SOARING 191 YOUNG WAS FLEDGED ——————————————————————————————————	Pates La	1986, ONE YOUR sst Seen 1991-XX-XX 1993-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	POSSIBLE THREAT FROM DISTUDES SWHA #SA016. NEST WITH FLEDGED. IN 1990, TWO ADULT. CITY OF SACRAMENTO 326 Map Index: 2: Good Natural/Native occurrence Presumed Extant Unknown WILKINSON, C. 1990 (OBS) SACRAMENTO WEST (3812155/5	I TWO YOUNG FOUND ON 19 JUNE 1981. BIRDS WE'S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE 1079 EO Index: 9026	ERE OBSERVED SOARING 191 YOUNG WAS FLEDGED ——————————————————————————————————	Pates La	1986, ONE YOUR sst Seen 1991-XX-XX 1993-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary:	POSSIBLE THREAT FROM DISTUDES SWHA #SA016. NEST WITH FLEDGED. IN 1990, TWO ADULT. CITY OF SACRAMENTO 326 Map Index: 2: Good Natural/Native occurrence Presumed Extant Unknown WILKINSON, C. 1990 (OBS) SACRAMENTO WEST (3812155/5	I TWO YOUNG FOUND ON 19 JUNE 1981. BIRDS WE'S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE 1079 EO Index: 9026	ERE OBSERVED SOARING 191 YOUNG WAS FLEDGED ——————————————————————————————————	Pates La	1986, ONE YOUR sst Seen 1991-XX-XX 1993-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	POSSIBLE THREAT FROM DISTUDES SWHA #SA016. NEST WITH FLEDGED. IN 1990, TWO ADULT: CITY OF SACRAMENTO 326 Map Index: 2: Good Natural/Native occurrence Presumed Extant Unknown WILKINSON, C. 1990 (OBS) SACRAMENTO WEST (3812155/SSACRAMENTO) 38.62265° / -121.56098° Zone-10 N4275885 E625269	I TWO YOUNG FOUND ON 19 JUNE 1981. BIRDS WE S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE 1079 EO Index: 9026	ERE OBSERVED SOARING 191 YOUNG WAS FLEDGED E Record Last U Township: Range:	Dates La Element: Site: Updated:	1986, ONE YOUR 1981-XX-XX 1993-XX-XX 1999-10-25
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius:	POSSIBLE THREAT FROM DISTUDES SWHA #SA016. NEST WITH FLEDGED. IN 1990, TWO ADULT. CITY OF SACRAMENTO 326 Map Index: 2: Good Natural/Native occurrence Presumed Extant Unknown WILKINSON, C. 1990 (OBS) SACRAMENTO WEST (3812155/5 SACRAMENTO 38.62265° / -121.56098° Zone-10 N4275885 E625269 80 meters	I TWO YOUNG FOUND ON 19 JUNE 1981. BIRDS WE S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE 1079 EO Index: 9026 513D) Mapping Precision: SPECIFIC	ERE OBSERVED SOARING 191 YOUNG WAS FLEDGED E Record Last U Township: Range: Section:	Dates La Element: Site: Updated:	1986, ONE YOUR sst Seen 1991-XX-XX 1993-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	POSSIBLE THREAT FROM DISTUDES SWHA #SA016. NEST WITH FLEDGED. IN 1990, TWO ADULT. CITY OF SACRAMENTO 326 Map Index: 2: Good Natural/Native occurrence Presumed Extant Unknown WILKINSON, C. 1990 (OBS) SACRAMENTO WEST (3812155/5 SACRAMENTO 38.62265° / -121.56098° Zone-10 N4275885 E625269 80 meters 30 ft	I TWO YOUNG FOUND ON 19 JUNE 1981. BIRDS WE S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE 1079 EO Index: 9026 Mapping Precision: SPECIFIC Symbol Type: POINT	ERE OBSERVED SOARING 191 YOUNG WAS FLEDGED E Record Last U Township: Range: Section: Meridian:	Dates La Element: Site: Updated:	1986, ONE YOUR 1981-XX-XX 1993-XX-XX 1999-10-25
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	POSSIBLE THREAT FROM DISTUDES SWHA #SA016. NEST WITH FLEDGED. IN 1990, TWO ADULT. CITY OF SACRAMENTO 326 Map Index: 2: Good Natural/Native occurrence Presumed Extant Unknown WILKINSON, C. 1990 (OBS) SACRAMENTO WEST (3812155/5 SACRAMENTO 38.62265° / -121.56098° Zone-10 N4275885 E625269 80 meters 30 ft	I TWO YOUNG FOUND ON 19 JUNE 1981. BIRDS WE S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE 1079 EO Index: 9026 513D) Mapping Precision: SPECIFIC	ERE OBSERVED SOARING 191 YOUNG WAS FLEDGED E Record Last U Township: Range: Section: Meridian:	Dates La Element: Site: Updated:	1986, ONE YOUR 1981-XX-XX 1993-XX-XX 1999-10-25
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	POSSIBLE THREAT FROM DISTUDES SWHA #SA016. NEST WITH FLEDGED. IN 1990, TWO ADULT. CITY OF SACRAMENTO 326 Map Index: 2: Good Natural/Native occurrence Presumed Extant Unknown WILKINSON, C. 1990 (OBS) SACRAMENTO WEST (3812155/5 SACRAMENTO) 38.62265° / -121.56098° Zone-10 N4275885 E625269 90 meters 30 ft SACRAMENTO RIVER, RM-64.5(4)	I TWO YOUNG FOUND ON 19 JUNE 1981. BIRDS WE S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE 1079 EO Index: 9026 Mapping Precision: SPECIFIC Symbol Type: POINT	RECOBSERVED SOARING 191 YOUNG WAS FLEDGED Record Last U Township: Range: Section: Meridian:	Dates La Element: Site: Updated: 09N 04E 20 M	1986, ONE YOUR sst Seen 1991-XX-XX 1993-XX-XX 1999-10-25 Qtr: NE
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location:	POSSIBLE THREAT FROM DISTUDES SWHA #SA016. NEST WITH FLEDGED. IN 1990, TWO ADULT: CITY OF SACRAMENTO 326 Map Index: 2: Good Natural/Native occurrence Presumed Extant Unknown WILKINSON, C. 1990 (OBS) SACRAMENTO WEST (3812155/5 SACRAMENTO) 38.62265° / -121.56098° Zone-10 N4275885 E625269 80 meters 30 ft SACRAMENTO RIVER, RM-64.5(INEST TREE IS A TALL COTTON AGRICULTURAL FIELDS.	TWO YOUNG FOUND ON 19 JUNE 1981. BIRDS WE'S NESTED, FLEDGING TWO YOUNG. IN 1991, ONE 1079 EO Index: 9026 513D) Mapping Precision: SPECIFIC Symbol Type: POINT L), 2.5 MILES WEST OF THE I-5/I-80 JUNCTION, SAC	RECORDERVED SOARING 191 YOUNG WAS FLEDGED Record Last U Township: Range: Section: Meridian: CRAMENTO. PARIAN; SURROUNDING FOR	Dates La Element: Site: Updated: 09N 04E 20 M	1986, ONE YOUR sst Seen 1991-XX-XX 1993-XX-XX 1999-10-25 Qtr: NE
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location: Ecological:	POSSIBLE THREAT FROM DISTUDES SWHA #SA016. NEST WITH FLEDGED. IN 1990, TWO ADULT: CITY OF SACRAMENTO 326 Map Index: 2: Good Natural/Native occurrence Presumed Extant Unknown WILKINSON, C. 1990 (OBS) SACRAMENTO WEST (3812155/5 SACRAMENTO) 38.62265° / -121.56098° Zone-10 N4275885 E625269 80 meters 30 ft SACRAMENTO RIVER, RM-64.5(INEST TREE IS A TALL COTTON AGRICULTURAL FIELDS. POTENTIAL THREAT FROM THE	Mapping Precision: SPECIFIC Symbol Type: POINT L), 2.5 MILES WEST OF THE I-5/I-80 JUNCTION, SAC WOOD, LOCATED 20 FEET FROM THE RIVER IN RIF	Township: Range: Section: Meridian: PARIAN; SURROUNDING FOR.	Dates La Element: Site: Updated: 09N 04E 20 M	1986, ONE YOUR ast Seen 1991-XX-XX 1993-XX-XX 1999-10-25 Qtr: NE

uteo swainsoni				
Swainson's hawk			ent Code: ABNKC19070	
	ıs ———————	NDDB Element Ranks	ODEC Status	
Federal: None State: Threate	ned	Global: G5 State: S2	CDFG Status:	
		State. 32		
	NG) BREEDS IN STANDS WITH FEW TRE	ES IN JUNIPER-SAGE FLATS, RIPARIAN AREAS REAS SUCH AS GRASSLANDS, OR ALFALFA OR		ENT POPULATIONS.
Occurrence No.	498 Map Index: 23024	EO Index: 27192	Dates La	st Seen
Occ Rank:		EO HIGGS. 27 TOZ	Element:	2001-06-22
	Natural/Native occurrence		Site:	2001-06-22
	Presumed Extant			
	Unknown		Record Last Updated:	2003-04-10
	BRADBURY, M. 2001 (OBS)			
=	SACRAMENTO WEST (3812155/513D)			
County Summary:	YOLO			
Lat/Long:	38.58066° / -121.57082°		Township: 09N	
UTM:	Zone-10 N4271212 E624484		Range: 04E	
	80 meters	Mapping Precision: SPECIFIC	Section: 32	Qtr: XX
Elevation:	10 ft	Symbol Type: POINT	Meridian: M	
Location:	0.4 MILE NORTH OF I-80, 0.5 MILE NW	OF THE I-80/HIGHWAY 50 JUNCTION, WEST SAC	RAMENTO	
Location Detail:	NEST TREE IS LOCATED ALONG THE S	SOUTH SIDE OF THE UNION PACIFIC RR TRACK	S.	
Ecological:	NEST TREE IS AN 85' COTTONWOOD,	SURROUNDED BY WELL-DEVELOPED RIPARIAN	HABITAT AROUND THE RAILROA	D TRACKS, MANY
	LARGE, POTENTIAL NEST TREES ARE	FOUND IN THE VICINITY.		
General:	DFG SWHA #YO160, ONE ADULT OBSE	RVED SOARING NEAR NEST SITE ON 7 APR 198	88. 2 ADULTS AND 3 JUVENILES (Y	OUNG BANDED)
	OBSERVED AT THE NEST SITE ON 22 J		•	,
Owner/Manager:	PVT-UNION PACIFIC RR			
Occurrence No.	499 Map Index: 23018	EO Index: 13259	Dates La	st Seen ———
Occ Rank:	Unknown		Element:	1991-XX-XX
•	Natural/Native occurrence		Site:	1993-XX-XX
	Presumed Extant		Pagard Last 11s dated	1000 10 10
	Unknown		Record Last Updated:	1999-10-19
	MAIER, L. 1990 (OBS)			
Quad Summary:	SACRAMENTO WEST (3812155/513D)			
County Summary:	SACRAMENTO, YOLO			
Lat/Long:	38.51541° / -121.54157°		Township: 08N	
	Zone-10 N4264011 E627147		Range: 04E	
	1/5 mile	Mapping Precision: NON-SPECIFIC	Section: 28	Qtr: SW
Radius:		Symbol Type: POINT	Meridian: M	
Radius: Elevation:	10 ft	dynibot rype. r onti		
Elevation:		WEEN CLAY BANK BEND AND OAK HALL BEND,	SACRAMENTO	
Elevation: Location:	SACRAMENTO RIVER, RM-52.7(L), BET	WEEN CLAY BANK BEND AND OAK HALL BEND,		AGRICULTURAL FIF
Elevation: Location:	SACRAMENTO RIVER, RM-52.7(L), BET			AGRICULTURAL FIE
Elevation: Location: Ecological:	SACRAMENTO RIVER, RM-52.7(L), BET NEST TREE IS A SMALL COTTONWOOD (ALFALFA AND WHEAT).	WEEN CLAY BANK BEND AND OAK HALL BEND, D, 25 FEET FROM THE RIVER; SURROUNDING F	ORAGING HABITAT CONSISTS OF	
Elevation: Location: Ecological: Threat:	SACRAMENTO RIVER, RM-52.7(L), BET NEST TREE IS A SMALL COTTONWOOD (ALFALFA AND WHEAT). THREATENED BY DEVELOPMENT OF F	WEEN CLAY BANK BEND AND OAK HALL BEND, D, 25 FEET FROM THE RIVER; SURROUNDING F FORAGING HABITAT AND HIGH DISTURBANCE (ORAGING HABITAT CONSISTS OF PEDESTRIAN/BIKE TRAFFIC) IN VIC	CINITY OF NEST SITE
Elevation: Location: Ecological: Threat:	SACRAMENTO RIVER, RM-52.7(L), BET NEST TREE IS A SMALL COTTONWOOD (ALFALFA AND WHEAT). THREATENED BY DEVELOPMENT OF F	WEEN CLAY BANK BEND AND OAK HALL BEND, D, 25 FEET FROM THE RIVER; SURROUNDING F FORAGING HABITAT AND HIGH DISTURBANCE (I VED SOARING AT THIS SITE IN 1986; NO NEST I	ORAGING HABITAT CONSISTS OF PEDESTRIAN/BIKE TRAFFIC) IN VIC	CINITY OF NEST SITE
Elevation: Location: Ecological: Threat:	SACRAMENTO RIVER, RM-52.7(L), BET NEST TREE IS A SMALL COTTONWOOD (ALFALFA AND WHEAT). THREATENED BY DEVELOPMENT OF F DFG SWHA #SA054. ONE BIRD OBSER 1991; NO YOUNG PRODUCED. NEST IN	WEEN CLAY BANK BEND AND OAK HALL BEND, D, 25 FEET FROM THE RIVER; SURROUNDING F FORAGING HABITAT AND HIGH DISTURBANCE (I VED SOARING AT THIS SITE IN 1986; NO NEST I	ORAGING HABITAT CONSISTS OF PEDESTRIAN/BIKE TRAFFIC) IN VIC	CINITY OF NEST SITE

Swainson's hawk			Element Code: ABNKC19070		
Federal: None State: Threater Habitat As	ned	NDDB Element Ranks Global: G5 State: S2	Other Lists CDFG Statu	s:	
General: (NESTIN	IG) BREEDS IN STANDS WITH FEW TR	•		ING RODE	NT POPULATIONS.
Occurrence No. Occ Rank: Origin:	•	EO Index: 2041			1991-XX-XX 1991-XX-XX
Trend:	Presumed Extant Unknown LEVY, C. ET AL 1990 (OBS)		Record Last U	pdated:	1993-04-28
Quad Summary:	SACRAMENTO WEST (3812155/513D SACRAMENTO, YOLO)			
UTM:	38.53454° / -121.52451° Zone-10 N4266157 E628601 1/5 mile 20 ft	Mapping Precision: NO Symbol Type: PO		08N 04E XX M	Qtr: XX
Location:	SACRAMENTO RIVER, RM-55.05(R),	JUST UPSTREAM FROM CHICORY BE	ND, SACRAMENTO.		
Threat:	NEST TREE IS A TALL COTTONWOO THREATENED BY VARIOUS DISTURE DFG SWHA #YO202. TWO ADULTS F UNKNOWN	BANCES (TREE CLEARING ACTIVITIES	, MARINA OPERATIONS)	; NESTING	SUCCESS UNKNO
Occurrence No. Occ Rank: Origin:		EO Index: 2041	=	Dates Las lement: Site:	st Seen
Trend:	Unknown LEVY, C. ET AL 1990 (OBS)		Record Last U	lpdated:	1993-04-28
•	SACRAMENTO WEST (3812155/513D SACRAMENTO, YOLO)			
UTM:	38.54155° / -121.51335° Zone-10 N4266951 E629561 1/5 mile 20 ft	Mapping Precision: NC Symbol Type: PC		08N 04E XX M	Qtr: XX
	SACRAMENTO RIVER, RM-55.9(R), N NEST TREE IS A MEDIUM-SIZED WA FIELDS.				W CROPS, AND W
	THREATENED BY AGRICULTURAL P DFG SWHA #YO203. TWO ADULTS F UNKNOWN			HAWK'S RI	EPRODUCTIVE PER
Presence:		EO Index: 7541		Site:	st Seen 1993-07-15 1993-07-15 1993-08-02
Main Source:	LEVY, C. & C. WILKINSON 1991 (OBS SACRAMENTO WEST (3812155/513D	`	TOOM LASE C		
County Summary:	•	,	Township:	08N	
UTM:	Zone-10 N4267625 E629776 80 meters	Mapping Precision: SF Symbol Type: PC	Range: ECIFIC Section:	04E	Qtr: XX
	SACRAMENTO RIVER, RM-56.30(R), NEST TREE IS A LONE OAK, 1200 FE				GRICULTURAL FIE
-	DFG SWHA #YO204. TWO ADULTS (NESTING SUCCESS UNKNOWN.				
	UNKNOWN				

Swainson's hawk			Element Code: ABNKC19070	
State	is ————————	NDDB Element Ranks	Other Lists	
Federal: None State: Threater	and	Global: G5 State: S2	CDFG Status:	
		State. 52		
General: (NESTIN		TREES IN JUNIPER-SAGE FLATS, RIPARIAN ARE	EAS AND IN OAK SAVANNAH	
		TREES IN JUNIPER-SAGE FLATS, RIPARIAN ART IG AREAS SUCH AS GRASSLANDS, OR ALFALFA		IT POPULAT
Occurrence No.	• • • • • • • • • • • • • • • • • • •	22 EO Index: 15855	— Dates Last	
Occ Rank:	Unknown Natural/Native occurrence			1991-XX-XX 1991-XX-XX
_	Presumed Extant		Site.	1001-700-700
	Unknown		Record Last Updated:	1993-04-28
Main Source:	MAIER, L. 1990 (OBS)	4		
Quad Summary:	SACRAMENTO WEST (3812155/51:	3D)		
County Summary:	SACRAMENTO, YOLO	,		
			7	
	38,55347° / -121.51514° Zone-10 N4268271 E629384		Township: 08N Range: 04E	
	1/5 mile	Mapping Precision: NON-SPEC		Qtr: XX
Elevation:		Symbol Type: POINT	Meridian: M	
l ocation:	SACRAMENTO DIVER PM-56 6/P)	, 0.5 MILE SOUTH OF MILLER PARK.		
	• •		DING FOR COMO HARREST MOLLINES TO	
Ecological:	FIELDS.	ATED 1200 FEET FROM THE RIVER; SURROUND	JING FORAGING HABITAT INCLUDES FAL	LOW AGRIC
General:	DFG SWHA #YO205. TWO ADULTS	S FLEDGED ONE YOUNG IN 1990. TWO ADULTS I	FLEDGED ONE YOUNG IN 1991.	
Owner/Manager:	UNKNOWN	•		
Occurrence No.	504 Map Index: 230	23 EO Index: 14240	Dates Last	Seen
Occ Rank:				1990-08-XX
	Natural/Native occurrence		Site:	1990-08-XX
	Presumed Extant			1000 0 1 00
	Unknown		Record Last Updated:	1993-04-28
Main Source:	MAIER, L. 1990 (OBS)			
Quad Summary:	SACRAMENTO WEST (3812155/51	3D)		
County Summary:	SACRAMENTO, YOLO			
Lat/Long:	38.56391° / -121.52208°		Township: 99X	
	Zone-10 N4269420 E628760		Range: 99X	
	1/5 mile	Mapping Precision: SPECIFIC	Section: 99	Qtr: XX
Elevation:	35 ft	Symbol Type: POINT	Meridian: X	
Location:	SACRAMENTO RIVER, RM-57.6(R)	, ACROSS FROM MILLER PARK, SACRAMENTO.		
Ecological:	NEST TREE IS A MEDIUM-SIZED (COTTONWOOD; SURROUNDING FORAGING HAB	SITAT CONSISTS OF FALLOW FIELDS AND	ROW CRO
Threat:	THREATENED BY THE HIGH DEGI	REE OF DISTURBANCE AT THIS SITE.		
	DFG SWHA #YO206, TWO ADULT			
Owner/Manager:		THE DOED ONE TOOMS IN 1999.		
Owner/Wariager.	ONNOWN			
Occurrence No.	595 • Map Index: 236	529 EO Index: 20518	Dates Last	
Occ Rank:				1992-XX-XX
-	Natural/Native occurrence		Site:	1992-XX-XX
	Presumed Extant Unknown		Record Last Updated:	1996-01-03
	ENGLAND, S. 1992 (PERS)		. 1555/W Aust opunted.	
— main dout co:		CODY TAXA OR MODULATION (COMO OF 1540 A)		
	•	3D), TAYLOR MONUMENT (3812165/513A)		
•	SACRAMENTO	· · · · · · · · · · · · · · · · · · ·		
Quad Summary: County Summary:			Township: 09N	
County Summary:	38.62357° / -121.54405°		Range: 04E	
County Summary: Lat/Long: UTM:	Zone-10 N4276010 E626741			
County Summary: Lat/Long: UTM: Radius:	Zone-10 N4276010 E626741 1/5 mile	Mapping Precision: NON-SPEC		Qtr: NE
County Summary: Lat/Long: UTM:	Zone-10 N4276010 E626741 1/5 mile	Mapping Precision: NON-SPEC Symbol Type: POINT	CIFIC Section: 21 Meridian: M	Qtr: NE
County Summary: Lat/Long: UTM: Radius: Elevation:	Zone-10 N4276010 E626741 1/5 mile 10 ft		Meridian: M	Qtr: NE
County Summary: Lat/Long: UTM: Radius: Elevation: Location:	Zone-10 N4276010 E626741 1/5 mile 10 ft	Symbol Type: POINT ROAD AND 0.25 MILE SOUTH OF SAN JUAN ROAF	Meridian: M	Qtr: NE
County Summary: Lat/Long: UTM: Radius: Elevation: Location: Location Detail:	Zone-10 N4276010 E626741 1/5 mile 10 ft 0,25 MILE WEST OF EL CENTRO I	Symbol Type: POINT ROAD AND 0.25 MILE SOUTH OF SAN JUAN ROAF	Meridian: M	Qtr: NE
County Summary: Lat/Long: UTM: Radius: Elevation: Location: Location Detail: Ecological:	Zone-10 N4276010 E626741 1/5 mile 10 ft 0.25 MILE WEST OF EL CENTRO I NEST TREE IS LOCATED ALONG	Symbol Type: POINT ROAD AND 0.25 MILE SOUTH OF SAN JUAN ROAF A SMALL DRAINAGE CANAL.	Meridian: M	Qtr: NE

Buteo swainsoni				
Swainson's hawk			Element Code: ABNKC19070	
	us 	NDDB Element Ranks	Other Lists	
Federal: None State: Threater	ned	Global: G5 State: S2	CDFG Status:	
		REES IN JUNIPER-SAGE FLATS, RIPARIA	AN AREAS AND IN OAK SAVANNAH.	
Micro: REQUIR	RES ADJACENT SUITABLE FORAGING	AREAS SUCH AS GRASSLANDS, OR ALI	FALFA OR GRAIN FIELDS SUPPORTING ROD	ENT POPULATIONS.
Occurrence No. Occ Rank:	•	5 EO Index: 7539	Dates La Element:	1993-07-15
	Natural/Native occurrence		Site:	1993-07-15
	Presumed Extant		Record Last Updated:	1993-08-02
	Unknown MORENO, L. A. 1993 (OBS)		Record Last Opuated.	1993-00-02
	SACRAMENTO WEST (3812155/5130))		·
County Summary:		<i>,</i>		
			Taumahina 09N	
	38.51501° / -121.55084° Zone-10 N4263954 E626340		Township: 08N Range: 04E	
Radius:	80 meters	Mapping Precision: SPEC		Qtr: XX
Elevation:	20 ft	Symbol Type: POIN	T Meridian: M	
Location:	SACRAMENTO RIVER, RM-52.20(R),	AT CLAY BANK BEND, WEST OF SACRA	MENTO.	
General:	DFG SWHA #YO. 2 ADULTS AND AT	LEAST 1 JUVENILE PRESENT AT THE N	EST SITE.	
Owner/Manager:	UNKNOWN			
Occurrence No.	635 Map Index: 2387	4 EO Index: 7540	Dates L	
Occ Rank:			Element: Site:	1993-07-15 1993-07-15
_	Natural/Native occurrence Presumed Extant		Site.	1999-01-10
	Unknown		Record Last Updated:	1993-08-02
	MORENO, L. A. 1993 (OBS)			
=	SACRAMENTO WEST (3812155/513	D)		
County Summary:	····			
	38.60285° / -121.51936°		Township: 09N	
Radius:	Zone-10 N4273745 E628927 80 meters	Mapping Precision: SPEC	Range: 04E CIFIC Section: 26	Qtr: SW
Elevation:	25 ft	Symbol Type: POIN		
Location:	SACRAMENTO RIVER, RM-60.90(R),	JUST UPSTREAM FROM DISCOVERY PA	RK, SACRAMENTO.	
		IUVENILES OBSERVED AT NEST SITE.		
Owner/Manager:		OVERILES OBSERVED AT NEST SITE.		
Ownermanager.				
Occurrence No.	636 Map Index: 2387	3 EO Index: 7537	Dates L	ast Seen ———
Occ Rank:			Element:	1993-07-15
•	Natural/Native occurrence Presumed Extant		Site:	1993-07-15
	Unknown		Record Last Updated:	1999-10-25
Main Source:	MORENO, L. A. 1993 (OBS)			
Quad Summary:	SACRAMENTO WEST (3812155/513	D)		
County Summary:	SACRAMENTO			
_	38.60202° / -121.54078°		Township: 99X	
	Zone-10 N4273623 E627064 80 meters	Mapping Precision: SPEC	Range: 99X	Otr: SE
Radius: Elevation:		Mapping Precision: SPEC Symbol Type: POIN		Qtr: SE
		HICT DOMNSTDEAM FROM THE BIONE	ED BDIDGE (FBO) OVER THE CAGRAMENTO	DIVED SACDAMENTO
	•		ER BRIDGE (I-80) OVER THE SACRAMENTO	NIVER, SAURAMENTU.
) 1 JUVENILE OBSERVED AT THE NEST S	RITE IN 1993.	
Owner/Manager:	UNKNOWN			

teo swainsoni					
Swainson's hawk			Element Code: ABNKC19070		
Federal: None	ıs —————	NDDB Element Ranks	Other Lists		
State: Threater	ned	Global: G5 State: S2	CDFG Stat	us:	
	sociations ——————				
General: (NESTIN	NG) BREEDS IN STANDS WITH FEW TRE RES ADJACENT SUITABLE FORAGING AF				ENT POPULATIONS.
Occurrence No.	····	EO Index: 41771		Dates La	
Occ Rank:		Lo mack. 4111		Element:	
-	Natural/Native occurrence			Site:	2000-05-25
	Presumed Extant Unknown		Record Last	Updated:	2000-06-22
	DEPT. OF FISH & GAME 1994 (PERS)				
Quad Summary:	SACRAMENTO WEST (3812155/513D)				
County Summary:					•
Lat/Long:	38.61927° / -121.52435°		Township:	09N	
	Zone-10 N4275560 E628464		Range:	04E	
	80 meters	Mapping Precision: SPECIF			Qtr: SE
Elevation:	25 ft	Symbol Type: POINT	Meridian:	M	
	WEST EDGE OF NATOMAS MAIN DRAIN SITE IS LOCATED WEST OF THE BIKE GROWING ON THE EAST EDGE OF THI	TRAIL, ~70 METERS SW OF THE END O		EST TREE	WAS A WILLOW
Englasia-t-	NEST TREE IS A BLACK WALNUT; NES		IN IS BARELY VISIRIE		
-	ACTIVE NEST, WITH 2 JUVENILES AND			ST TREF V	WITH AN INCUBATING
	ADULT AND AN ATTENDING ADULT OB		2 3 34 , 100 1. HEOT HEATHEN HE		
[]umar/Managee	INKNOWN				
Owner/Manager:	UNKNOWN				
Owner/Manager: Occurrence No.		EO Index: 41792		Dates La	nst Seen
Occurrence No. Occ Rank:	769 Map Index : 41792 Unknown	EO Index: 41792		Element:	1993-XX-XX
Occurrence No. Occ Rank: Origin:	769 Map Index : 41792 Unknown Natural/Native occurrence	EO Index: 41792			
Occurrence No. Occ Rank: Origin: Presence:	769 Map Index : 41792 Unknown	EO Index: 41792	Record Last	Element: Site:	1993-XX-XX
Occurrence No. Occ Rank: Origin: Presence: Trend:	769 Map Index : 41792 Unknown Natural/Native occurrence Presumed Extant	EO Index: 41792	Record Last	Element: Site:	1993-XX-XX 1993-XX-XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown	EO Index: 41792	Record Last	Element: Site:	1993-XX-XX 1993-XX-XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS)	EO Index: 41792	Record Last	Element: Site:	1993-XX-XX 1993-XX-XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857°	EO Index: 41792	Township:	Element: Site: Updated:	1993-XX-XX 1993-XX-XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253		Township: Range:	Element: Site: Updated: 08N 04E	1993-XX-XX 1993-XX-XX 1999-10-26
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters	Mapping Precision: SPECII	Township: Range: FIC Section:	Element: Site: Updated: 08N 04E 22	1993-XX-XX 1993-XX-XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft	Mapping Precision: SPECII Symbol Type: POINT	Township: Range: FIC Section: Meridian:	Element: Site: Updated: 08N 04E 22	1993-XX-XX 1993-XX-XX 1999-10-26
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTO RIVER, RM-54.72(L), AT	Mapping Precision: SPECII Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO	Township: Range: FIC Section: Meridian:	Element: Site: Updated: 08N 04E 22	1993-XX-XX 1993-XX-XX 1999-10-26
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTO RIVER, RM-54.72(L), AT LOCATION HAS VARIED, BETWEEN RM	Mapping Precision: SPECI Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO M-54.72(L) AND RM-55.10(R).	Township: Range: FIC Section: Meridian:	Element: Site: Updated: 08N 04E 22	1993-XX-XX 1993-XX-XX 1999-10-26
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location: Location Detail: Ecological:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTO RIVER, RM-54.72(L), AT LOCATION HAS VARIED, BETWEEN RM NEST TREE WAS A COTTONWOOD IN	Mapping Precision: SPECIS Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO M-54.72(L) AND RM-55.10(R). 1990.	Township: Range: FIC Section: Meridian: O	Element: Site: Updated: Updated: 08N 04E 22 M	1993-XX-XX 1993-XX-XX 1999-10-26 Qtr: XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location: Location Detail: Ecological:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTO RIVER, RM-54.72(L), AT LOCATION HAS VARIED, BETWEEN RM	Mapping Precision: SPECII Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO M-54.72(L) AND RM-55.10(R). 1990. NILE AND NEST OBSERVED IN 1990. 3 A	Township: Range: FIC Section: Meridian: O	Element: Site: Updated: Updated: 08N 04E 22 M	1993-XX-XX 1993-XX-XX 1999-10-26 Qtr: XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location: Location Detail: Ecological:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTO RIVER, RM-54.72(L), AT LOCATION HAS VARIED, BETWEEN RM NEST TREE WAS A COTTONWOOD IN DFG SWHA #SA087. 2 ADULTS/1 JUVEI 2 ADULTS/2 JUVENILES AND NEST OB	Mapping Precision: SPECII Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO M-54.72(L) AND RM-55.10(R). 1990. NILE AND NEST OBSERVED IN 1990. 3 A	Township: Range: FIC Section: Meridian: O	Element: Site: Updated: Updated: 08N 04E 22 M	1993-XX-XX 1993-XX-XX 1999-10-26 Qtr: XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location: Location Detait: Ecological: General:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTÖ RIVER, RM-54.72(L), AT LOCATION HAS VARIED, BETWEEN RA NEST TREE WAS A COTTONWOOD IN DFG SWHA #SA087. 2 ADULTS/1 JUVEI 2 ADULTS/2 JUVENILES AND NEST OB UNKNOWN	Mapping Precision: SPECII Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO M-54.72(L) AND RM-55.10(R). 1990. NILE AND NEST OBSERVED IN 1990. 3 A	Township: Range: FIC Section: Meridian: O	OBN 04E 22 M	1993-XX-XX 1993-XX-XX 1999-10-26 Qtr: XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location: Location Detail: Ecological: General:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTO RIVER, RM-54.72(L), AT LOCATION HAS VARIED, BETWEEN RM NEST TREE WAS A COTTONWOOD IN DFG SWHA #SA087. 2 ADULTS/1 JUVEI 2 ADULTS/2 JUVENILES AND NEST OB UNKNOWN 770 Map Index: 41793	Mapping Precision: SPECIS Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO M-54.72(L) AND RM-55.10(R). 1990. NILE AND NEST OBSERVED IN 1990. 3 A ISERVED IN 1993.	Township: Range: FIC Section: Meridian: O	Element: Site: Updated: 08N 04E 22 M N 1991. 2 A	1993-XX-XX 1993-XX-XX 1999-10-26 Qtr: XX DULTS NESTING IN 1
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location Detail: Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTO RIVER, RM-54.72(L), AT LOCATION HAS VARIED, BETWEEN RM NEST TREE WAS A COTTONWOOD IN DFG SWHA #SA087. 2 ADULTS/1 JUVEI 2 ADULTS/2 JUVENILES AND NEST OB UNKNOWN 770 Map Index: 41793 Unknown Natural/Native occurrence	Mapping Precision: SPECIS Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO M-54.72(L) AND RM-55.10(R). 1990. NILE AND NEST OBSERVED IN 1990. 3 A ISERVED IN 1993.	Township: Range: FIC Section: Meridian: O	OBN 04E 22 M	1993-XX-XX 1993-XX-XX 1999-10-26 Qtr: XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location Detail: Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTO RIVER, RM-54.72(L), AT LOCATION HAS VARIED, BETWEEN RM NEST TREE WAS A COTTONWOOD IN DFG SWHA #SA087. 2 ADULTS/1 JUVEI 2 ADULTS/2 JUVENILES AND NEST OB UNKNOWN 770 Map Index: 41793 Unknown Natural/Native occurrence Presumed Extant	Mapping Precision: SPECIS Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO M-54.72(L) AND RM-55.10(R). 1990. NILE AND NEST OBSERVED IN 1990. 3 A ISERVED IN 1993.	Township: Range: FIC Section: Meridian: O	OBN 04E 22 M N 1991. 2 A	1993-XX-XX 1993-XX-XX 1999-10-26 Qtr: XX DULTS NESTING IN 1
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location Detail: Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTO RIVER, RM-54.72(L), AT LOCATION HAS VARIED, BETWEEN RM NEST TREE WAS A COTTONWOOD IN DFG SWHA #SA087. 2 ADULTS/1 JUVEI 2 ADULTS/2 JUVENILES AND NEST OB UNKNOWN 770 Map Index: 41793 Unknown Natural/Native occurrence	Mapping Precision: SPECIS Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO M-54.72(L) AND RM-55.10(R). 1990. NILE AND NEST OBSERVED IN 1990. 3 A ISERVED IN 1993.	Township: Range: FIC Section: Meridian: O ADULTS AND NEST OBSERVED II	OBN 04E 22 M N 1991. 2 A	1993-XX-XX 1993-XX-XX 1999-10-26 Qtr: XX ADULTS NESTING IN 1993-XX-XX 1993-XX-XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location Detail: Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTO RIVER, RM-54.72(L), AT LOCATION HAS VARIED, BETWEEN RM NEST TREE WAS A COTTONWOOD IN DFG SWHA #SA087. 2 ADULTS/1 JUVEI 2 ADULTS/2 JUVENILES AND NEST OB UNKNOWN 770 Map Index: 41793 Unknown Natural/Native occurrence Presumed Extant Unknown	Mapping Precision: SPECIS Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO M-54.72(L) AND RM-55.10(R). 1990. NILE AND NEST OBSERVED IN 1990. 3 A ISERVED IN 1993.	Township: Range: FIC Section: Meridian: O ADULTS AND NEST OBSERVED II	OBN 04E 22 M N 1991. 2 A	1993-XX-XX 1993-XX-XX 1999-10-26 Qtr: XX ADULTS NESTING IN 1993-XX-XX 1993-XX-XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location Detail: Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTO RIVER, RM-54.72(L), AT LOCATION HAS VARIED, BETWEEN RA NEST TREE WAS A COTTONWOOD IN DFG SWHA #SA087. 2 ADULTS/1 JUVEI 2 ADULTS/2 JUVENILES AND NEST OB UNKNOWN 770 Map Index: 41793 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS)	Mapping Precision: SPECIS Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO M-54.72(L) AND RM-55.10(R). 1990. NILE AND NEST OBSERVED IN 1990. 3 A ISERVED IN 1993.	Township: Range: FIC Section: Meridian: O ADULTS AND NEST OBSERVED II	OBN 04E 22 M N 1991. 2 A	1993-XX-XX 1993-XX-XX 1999-10-26 Qtr: XX ADULTS NESTING IN 1993-XX-XX 1993-XX-XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location Detail: Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTO RIVER, RM-54.72(L), AT LOCATION HAS VARIED, BETWEEN RM. NEST TREE WAS A COTTONWOOD IN DFG SWHA #SA087. 2 ADULTS/1 JUVEI 2 ADULTS/2 JUVENILES AND NEST OB UNKNOWN 770 Map Index: 41793 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO	Mapping Precision: SPECIS Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO M-54.72(L) AND RM-55.10(R). 1990. NILE AND NEST OBSERVED IN 1990. 3 A ISERVED IN 1993.	Township: Range: Range: Section: Meridian: O ADULTS AND NEST OBSERVED II	OBN O4E 22 M N 1991. 2 A Element: Site: Updated:	1993-XX-XX 1993-XX-XX 1999-10-26 Qtr: XX ADULTS NESTING IN 1993-XX-XX 1993-XX-XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location Detail: Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTO RIVER, RM-54.72(L), AT LOCATION HAS VARIED, BETWEEN RA NEST TREE WAS A COTTONWOOD IN DFG SWHA #SA087. 2 ADULTS/1 JUVEI 2 ADULTS/2 JUVENILES AND NEST OB UNKNOWN 770 Map Index: 41793 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS)	Mapping Precision: SPECIS Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO M-54.72(L) AND RM-55.10(R). 1990. NILE AND NEST OBSERVED IN 1990. 3 A ISERVED IN 1993.	Township: Range: FIC Section: Meridian: O ADULTS AND NEST OBSERVED II	OBN O4E 22 M N 1991. 2 A Dates L: Element: Site: Updated:	1993-XX-XX 1993-XX-XX 1999-10-26 Qtr: XX ADULTS NESTING IN 1993-XX-XX 1993-XX-XX
Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location Detail: Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	769 Map Index: 41792 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO 38.53086° / -121.52857° Zone-10 N4265744 E628253 80 meters 40 ft SACRAMENTO RIVER, RM-54.72(L), AT LOCATION HAS VARIED, BETWEEN RM NEST TREE WAS A COTTONWOOD IN DFG SWHA #SA087. 2 ADULTS/1 JUVEI 2 ADULTS/2 JUVENILES AND NEST OB UNKNOWN 770 Map Index: 41793 Unknown Natural/Native occurrence Presumed Extant Unknown DEPT. OF FISH & GAME 1994 (PERS) SACRAMENTO WEST (3812155/513D) SACRAMENTO 38.55020° / -121.51153° Zone-10 N4267914 E629704 80 meters	Mapping Precision: SPECIS Symbol Type: POINT CHICORY BEND, SOUTH SACRAMENTO M-54.72(L) AND RM-55.10(R). 1990. NILE AND NEST OBSERVED IN 1990. 3 A ISERVED IN 1993.	Township: Range: Section: Meridian: O ADULTS AND NEST OBSERVED II Record Last Township: Range: Section:	OBN O4E 22 M N 1991. 2 A Element: Site: Updated:	1993-XX-XX 1993-XX-XX 1999-10-26 Qtr: XX ADULTS NESTING IN 1993-XX-XX 1993-XX-XX

Owner/Manager: UNKNOWN

Swainson's hawk			NOR Florent Partie		ode: ABNKC19070 Other Lists		
Federal: None State: Threaten	ed		DDB Element Ranks — Global: G5 State: S2		CDFG State	ıs:	
•	G) BREEDS IN STANDS WITH I ES ADJACENT SUITABLE FOR					ING RODE	ENT POPULATIONS
Occurrence No.	931 Map Index:	45347	EO Index:	45347		Dates La	st Seen
Occ Rank:	•	.501,	20 maon			lement: Site:	
Presence:	Presumed Extant				Record Last U		
	Unknown ZETTLE, B. 2001 (OBS)				Record Last (poateo:	2001-05-15
Quad Summary:	SACRAMENTO EAST (3812154	1/512C)					
County Summary:					···		
	38.61009° / -121.49006° Zone-10 N4274590 E631466				Township: Range:	09N 04E	
Radius: Elevation:	80 meters		Mapping Precisio Symbol Typ		Section: Meridian:	25 M	Qtr: XX
	ALONG NATOMAS EAST MAIN	I DDAIN ILIST		- 			TO
	NEST TREE IS A COTTONWO						
	ADJACENT TO THE GARDEN				IG THE JEDIDIAH SI	AITH BIKE	TRAIL TO THE SO
	POSSIBLE THREAT FROM HU ON 20 APR 2001, THE MALE W				ST OF THE NEST TE	EE: FEMA	I E WAS OBSERVE
oonorun.	SITTING ON THE NEST.						
Owner/Manager:	UNKNOWN						
Occurrence No.	939 Map Index:	45688	EO Index:	45688		Dates La	st Seen -
Occ Rank:	Good Natural/Native occurrence				1	Element: Site:	1999-06-04 1999-06-04
Presence:	Presumed Extant				Record Last	Indated	2001-10-09
	Unknown BRADBURY, M. 1999 (OBS)				Record Last	opuateu.	2001-10-03
Quad Summary:	SACRAMENTO WEST (381215	55/513D)					
County Summary:							
_	38.57959° / -121.57485° Zone-10 N4271088 E624135				Township: Range:	09N 04E	
Radius: Elevation:	1/10 mile 10 ft		Mapping Precision Symbol Typ	on: NON-SPECIFIC De: POINT	Section: Meridian:	32 M	Qtr: XX
Location:	SOUTH SIDE OF RAILROAD T	RACKS, NORT	H OF I-80, 0.8 MILE WNV	V OF I-80/HIGHWAY 50 I	NTERSECTION, WE	ST SACRA	MENTO
Ecological:	HABITAT CONSISTS OF A WE FACILITY AND URBAN DEVEL			ALONG THE RAILROAD	TRACKS, WITH TH	E YOLO B	YPASS FLOOD-CO
	THREATENED BY DISTURBAN			ROAD TRACKS AND I-80			
General: Owner/Manager:	2 ADULTS OBSERVED WITH 3 UNKNOWN	3 JUVENILES U	N 4 JUN 1999.				
Occurrence No. Occ Rank:		45692	EO Index:	45692		Dates La Element:	2001-06-22
Origin:	Natural/Native occurrence					Site:	2001-06-22
	Presumed Extant Unknown				Record Last	Updated:	2003-04-10
	BRADBURY, M. 1999 (OBS)						
Ouad Summana	SACRAMENTO WEST (381215	55/513D)					
-	TOLO				Townshire	09N	
County Summary:	38 600349 / 131 565309				Township: Range:	09N 04E	
County Summary: Lat/Long: UTM:	38.60024° / -121.56529° Zone-10 N4273392 E624932				_	_	
County Summary: Lat/Long: UTM:	Zone-10 N4273392 E624932 80 meters		Mapping Precision Symbol Typ		Section: Meridian:	29 M	Qtr: XX
County Summary: Lat/Long: UTM: Radius: Elevation:	Zone-10 N4273392 E624932 80 meters	THE SACRAMI	Symbol Typ	pe: POINT	Section: Meridian:	М	
County Summary: Lat/Long: UTM: Radius: Elevation: Location:	Zone-10 N4273392 E624932 80 meters 35 ft		Symbol Typ ENTO BYPASS, JUST NO	PRTH OF THE CHP ACAI	Section: Meridian: DEMY, NORTH OF I-	M 80, WEST	OF SACRAMENTO
County Summary: Lat/Long: UTM: Radius: Elevation: Location: Ecological:	Zone-10 N4273392 E624932 80 meters 35 ft ALONG THE SOUTH SIDE OF	TONWOOD ON . CHP FACILITY	Symbol Typ ENTO BYPASS, JUST NO I THE INSIDE LEVEE SLO	DE: POINT ORTH OF THE CHP ACAI OPE OF THE SACRAMEN	Section: Meridian: DEMY, NORTH OF I- NTO BYPASS; SURR	M 80, WEST	OF SACRAMENTO

teo swainsoni				
Swainson's hawk		NDDD Flores & Banks	Element Code: ABNKC19070 Other Lists	
Federal: None	5	- NDDB Element Ranks Global: G5	CDFG Status:	
State: Threater	ned	State: S2		
Habitat As				
•			ARIAN AREAS AND IN OAK SAVANNAH.	
MICTO: REQUIR	ES ADJACENT SUITABLE FORAGING A	REAS SUCH AS GRASSLANDS, OR	R ALFALFA OR GRAIN FIELDS SUPPORTING ROD	ENT POPULATION
Owner/Manager:	UNKNOWN			
Occurrence No.	941 Map Index: 45700	EO Index: 457		
Occ Rank:			Element: Site:	1999-06-04 1999-06-04
_	Natural/Native occurrence Presumed Extant		Site.	1999-00-04
	Unknown		Record Last Updated:	2003-04-09
Main Source:	BRADBURY, M. 1999 (OBS)			
Quad Summary:	SACRAMENTO WEST (3812155/513D)			
County Summary:	YOLO			
	38.59972° / -121.58631°		Township: 09N	
	Zone-10 N4273306 E623103		Range: 04E	
Radius:	80 meters	Mapping Precision: S	SPECIFIC Section: 30	Qtr: XX
Elevation:	10 ft	Symbol Type: P	POINT Meridian: M	
Location:	ALONG THE NORTH LEVEE OF SACRA	MENTO BYPASS, NORTH OF I-80 /	AND JUST EAST OF YOLO BYPASS, WEST OF S	ACRAMENTO
			TH OAKS, COTTONWOODS, AND WILLOWS; FAI	
-			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	2 ADULTS AND 1 JUVENILE OBSERVE	DAT THE NEST ON 4 JON 1999.		
Owner/Manager:	UNKNOWN			
Occurrence No.	942 Man Inday: 45707	EO Index: 457	707 — Dates I	ast Seen
Occurrence No.		EO Index; 457	Element:	2000-06-20
	Natural/Native occurrence		Site:	2000-06-20
Presence:	Presumed Extant			
	Unknown		Record Last Updated:	2003-04-10
Main Source:	BRADBURY, M. 1999 (OBS)			
Quad Summary:	SACRAMENTO WEST (3812155/513D)			
County Summary:	YOLO			
Lat/Long:	38.59642° / -121.57868°		Township: 09N	
	Zone-10 N4272950 E623773		Range: 04E	
Radius:		Mapping Precision: S		Qtr: XX
Elevation:	10 11	Symbol Type: P	POINT Meridian: M	
Location:	SOUTH OF THE SACRAMENTO BYPAS	S AND WEST OF THE CHP ACADE	EMY, WEST OF SACRAMENTO	
Ecological:			SISTS OF A WELL-DEVELOPED WETLAND CORI	RIDOR, ADJACENT
	FLOOD CONTROL FACILITY, AND FUR	THER SURROUNDED BY AGRICUL	LTURE.	
General:	2 ADULTS OBSERVED NESTING ON 4	JUN 1999; NEST FAILED. 2 ADULT:	'S AND 2 JUVENILES OBSERVED AT THE NEST S	ITE ON 20 JUN 200
Owner/Manager:	UNKNOWN			
Occurrence No.	•	EO Index: 457		ast Seen
Occ Rank:			Element: Site:	
•	Natural/Native occurrence Presumed Extant		Site.	2001-00-22
	Unknown		Record Last Updated:	2003-04-10
	BRADBURY, M. 1999 (OBS)			
Quad Summary:	SACRAMENTO WEST (3812155/513D)			
County Summary:				
			T A	
	38.60142° / -121.57917°		Township: 09N Range: 04E	
UIM: Radius:	Zone-10 N4273504 E623722 80 meters	Mapping Precision: S	<u>=</u>	Qtr: XX
Elevation:		Symbol Type: F		
·				
			S WEST OF THE SACRAMENTO RIVER, WEST OF	
Ecological:			GE OF A FLOOD-CONTROL FACILITY; SURROUI	NDING HABITAT CO
	OF A WELL-DEVELOPED RIPARIAN A	REA, AGRICULTURE, AND NON-NA	ATIVE GRASSLAND.	
Threat:	POSSIBLE THREAT FROM HUMAN US	E OF SITE FOR FISHING.		
General:	2 ADULTS AND 2 JUVENILES OBSERV	ED AT THE NEST ON 4 JUN 1999.	2 ADULTS AND 3 JUVENILES (YOUNG BANDED)	OBSERVED ON 22
	2001.		•	

Owner/Manager: UNKNOWN

Swainson's hawk			Element Code: ABNKC19070		
Federal: None State: Threaten		MDDB Element Ranks Global: G5 State: S2	Other Lists CDFG Status		
	G) BREEDS IN STANDS WITH FEW TR		RIAN AREAS AND IN OAK SAVANNAH. ALFALFA OR GRAIN FIELDS SUPPORTI	ng Rode	ENT POPULATIO
	•	EO Index: 5091		Dates Las ement: Site:	st Seen
Trend:	Unknown BRADBURY, M. 1999 (OBS)		Record Last U	odated:	2003-04-09
Quad Summary: County Summary:	SACRAMENTO WEST (3812155/513D) SACRAMENTO)			
итм:	38.60359° / -121.55246° Zone-10 N4273781 E626044 80 meters 35 ft	Mapping Precision: SF Symbol Type: PC	Range: ECIFIC Section:	09N 04E 28 M	Qtr: SW
	0.4 MILE UPSTREAM FROM THE I-80				
Ecological:	HABITAT CONSISTS OF A RIPARIAN THREATENED BY URBAN DEVELOPM	CORRIDOR ALONG THE SACRAMEN			
General: Owner/Manager:	2 ADULTS OBSERVED NESTING ON : UNKNOWN	26 APR 1999.			
-	Fair Natural/Native occurrence	EO Index: 509	•	Dates Las lement: Site:	st Seen 1999-06-28 1999-06-28
Trend:	Presumed Extant Unknown BRADBURY, M. 1999 (OBS)		Record Last U	pdated:	2003-04-10
Quad Summary: County Summary:	SACRAMENTO WEST (3812155/513D YOLO)	·		
UTM:	38.57113° / -121.56139° Zone-10 N4270167 E625322 80 meters 10 ft	Mapping Precision: Si Symbol Type: PO		08N 04E 05 M	Qtr: XX
Location:	0.2 MILE SOUTH OF INDUSTRIAL BO	ULEVARD, ON THE WEST BANK OF 1	HE DEEP WATER CHANNEL TURNING	BASIN, W	/EST SACRAME
Ecological:	NEST TREE UNKNOWN; SURROUND INDUSTRIAL CENTERS.	DING FORAGING HABITAT CONSISTS	OF A SMALL PLOT OF NON-NATIVE GF	'ASSLANI	O ADJACENT TO
General:	THREATENED BY COMMERCIAL AND 2 ADULTS AND 1 JUVENILE OBSERV		99.		
Owner/Manager:	UNKNOWN				
_	•	P. EO Index: 509	· -	Dates La lement: Site:	1999-06-28 1999-06-28
Trend:	Unknown BRADBURY, M. 1999 (OBS)		Record Last U	pdated:	2003-04-10
Quad Summary: County Summary:	SACRAMENTO WEST (3812155/513D YOLO))			
-		Mapping Precision: SI Symbol Type: Po		08N 04E 09 M	Qtr: XX
	JUST NW OF THE INTERSECTION O NEST TREE IS A LARGE OAK; SURR		SON BOULEVARD, WEST SACRAMENT SISTS OF NON-NATIVE GRASSLAND.	0	
	THREATENED BY COMMERCIAL AND 2 ADULTS AND 2 JUVENILES OBSER		200		•

Micro: REQUIRES A Occurrence No. 108 Occ Rank: Goo Origin: Nat Presence: Pre Trend: Unk Main Source: BRA Quad Summary: SA(County Summary: SA(Lat/Long: 38. UTM: Zor Radius: 80 Elevation: 15 Location: SE Ecological: NE: AG Threat: THI General: 2 A Owner/Manager: UN	BREEDS IN STANDS WITH FEW ADJACENT SUITABLE FORAGIN 83 Map Index: 5091 bod diviral/Native occurrence esumed Extant liknown RADBURY, M. 2001 (OBS) ACRAMENTO WEST (3812155/513 ACRAMENTO B.61289° / -121.53423° bone-10 N4274838 E627615 Ometers 5 ft E OF THE I-80/WEST EL CAMINO EST TREE IS A LARGE COTTONM SRICULTURAL LAND BORDERED IREATENED BY URBAN DEVELOR ADULTS AND 1 JUVENILE (YOUN NKNOWN	Mapping Precision: SI Symbol Type: PO	Record Last Township: Range: PECIFIC Section: OINT Meridian: D HOMESTEAD; SURROUNDING FORALJOR FREEWAY. D DEVELOPMENT IN 2-5 YEARS.	I. TING RODI Dates La Element: Site: Updated: 09N 04E 22 M	st Seen 2001-06-23 2001-06-23 2003-04-10 Qtr: NW
Micro: REQUIRES A Occurrence No. 108 Occ Rank: Goo Origin: Nat Presence: Pre Trend: Unk Main Source: BRA Quad Summary: SA(County Summary: SA(Lat/Long: 38. UTM: Zor Radius: 80 Elevation: 15 Location: SE Ecological: NE: AG Threat: THI General: 2 A Owner/Manager: UN	ADJACENT SUITABLE FORAGING 83	G AREAS SUCH AS GRASSLANDS, OR BO Index: 509 Mapping Precision: Sf Symbol Type: Po CLOVERLEAF, SACRAMENTO VOOD NEAR THE REMAINS OF AN OLD BY URBAN DEVELOPMENT AND A MA PMENT; SITE WILL LIKELY BE LOST TO	Record Last Township: Range: PECIFIC Section: OINT Meridian: D HOMESTEAD; SURROUNDING FORALJOR FREEWAY. D DEVELOPMENT IN 2-5 YEARS.	OPN O4E 22 M	st Seen 2001-06-23 2001-06-23 2003-04-10 Qtr: NW
Occ Rank: Goo Origin: Nat Presence: Pre Trend: Unk Main Source: BR/ Quad Summary: SA/ County Summary: SA/ County Summary: 15 Lat/Long: 80 Elevation: 15 Location: SE Ecological: NE: AG: Threat: THI General: 2 A Owner/Manager: UN	ood itural/Native occurrence essumed Extant iknown RADBURY, M. 2001 (OBS) ACRAMENTO WEST (3812155/513 ACRAMENTO 3.61289° / -121.53423° one-10 N4274838 E627615 0 meters 5 ft E OF THE I-80/WEST EL CAMINO EST TREE IS A LARGE COTTONM SRICULTURAL LAND BORDERED IREATENED BY URBAN DEVELOI ADULTS AND 1 JUVENILE (YOUN NKNOWN	Mapping Precision: Si Symbol Type: Po CLOVERLEAF, SACRAMENTO VOOD NEAR THE REMAINS OF AN OLD BY URBAN DEVELOPMENT AND A MA PMENT; SITE WILL LIKELY BE LOST TO	Record Last Township: Range: PECIFIC Section: OINT Meridian: D HOMESTEAD; SURROUNDING FORALJOR FREEWAY. D DEVELOPMENT IN 2-5 YEARS.	Element: Site: Updated: 09N 04E 22 M	2001-06-23 2001-06-23 2003-04-10 Qtr: NW
Origin: Nat Presence: Pre Trend: Uni Main Source: BR Quad Summary: SA(County Summary: SA(Lat/Long: 380 Elevation: 15 Location: SE Ecological: NE: AG(Threat: THI General: 2 A Owner/Manager: UNI Occurrence No. 123	Autural/Native occurrence esumed Extant inknown ACRAMENTO WEST (3812155/513 ACRAMENTO B.61289° / -121.53423° Dine-10 N4274838 E627615 Dineters E OF THE I-80/WEST EL CAMINO EST TREE IS A LARGE COTTONM GRICULTURAL LAND BORDERED HREATENED BY URBAN DEVELOR ADULTS AND 1 JUVENILE (YOUN NKNOWN	Mapping Precision: Sf Symbol Type: Po CLOVERLEAF, SACRAMENTO VOOD NEAR THE REMAINS OF AN OLD BY URBAN DEVELOPMENT AND A MA PMENT; SITE WILL LIKELY BE LOST TO	Record Last Township: Range: PECIFIC Section: OINT Meridian: D HOMESTEAD; SURROUNDING FORALJOR FREEWAY. D DEVELOPMENT IN 2-5 YEARS.	Site: Updated: 09N 04E 22 M	2003-04-10 Qtr: NW
Presence: Pre Trend: Unk Main Source: BR/ Quad Summary: SA(County Summary: SA(Lat/Long: 38 UTM: 2or Radius: 80 Elevation: 15 Location: SE Ecological: NE: AG Threat: THI General: 2 A Owner/Manager: UN	esumed Extant Nanown RADBURY, M. 2001 (OBS) ACRAMENTO WEST (3812155/513 ACRAMENTO B.61289° / -121.53423° One-10 N4274838 E627615 O meters 5 ft E OF THE I-80/WEST EL CAMINO EST TREE IS A LARGE COTTONN SRICULTURAL LAND BORDERED HREATENED BY URBAN DEVELOI ADULTS AND 1 JUVENILE (YOUN NKNOWN	Mapping Precision: Sf Symbol Type: Po CLOVERLEAF, SACRAMENTO VOOD NEAR THE REMAINS OF AN OLD BY URBAN DEVELOPMENT AND A MA PMENT; SITE WILL LIKELY BE LOST TO	Township: Range: PECIFIC Section: OINT Meridian: D HOMESTEAD; SURROUNDING FORALJOR FREEWAY. D DEVELOPMENT IN 2-5 YEARS.	Updated: 09N 04E 22 M	2003-04-10 Qtr: NW
Trend: Unk Main Source: BR/ Quad Summary: SA(County Summary: SA(Lat/Long: 38, UTM: Zor Radius: 80 Elevation: 15 Location: SE Ecological: NE: AG(Threat: THI General: 2 A Owner/Manager: UN	oknown RADBURY, M. 2001 (OBS) ACRAMENTO WEST (3812155/513) ACRAMENTO 3.61289° / -121.53423° One-10 N4274838 E627615 O meters 5 ft E OF THE I-80/WEST EL CAMINO EST TREE IS A LARGE COTTONM SRICULTURAL LAND BORDERED IREATENED BY URBAN DEVELOI ADULTS AND 1 JUVENILE (YOUN NIKNOWN	Mapping Precision: Sf Symbol Type: Po CLOVERLEAF, SACRAMENTO VOOD NEAR THE REMAINS OF AN OLD BY URBAN DEVELOPMENT AND A MA PMENT; SITE WILL LIKELY BE LOST TO	Township: Range: PECIFIC Section: OINT Meridian: D HOMESTEAD; SURROUNDING FORALJOR FREEWAY. D DEVELOPMENT IN 2-5 YEARS.	09N 04E 22 M	Qtr: NW
County Summary: SAC Lat/Long: 38.	ACRAMENTO 3.61289° / -121.53423° sine-10 N4274838 E627615 0 meters 5 ft E OF THE I-80/WEST EL CAMINO EST TREE IS A LARGE COTTONM SRICULTURAL LAND BORDERED HREATENED BY URBAN DEVELOR ADULTS AND 1 JUVENILE (YOUN	Mapping Precision: Sf Symbol Type: Po CLOVERLEAF, SACRAMENTO VOOD NEAR THE REMAINS OF AN OLD BY URBAN DEVELOPMENT AND A MA PMENT; SITE WILL LIKELY BE LOST TO	PECIFIC Section: OINT Meridian: D HOMESTEAD; SURROUNDING FORALIOR FREEWAY. D DEVELOPMENT IN 2-5 YEARS.	04E 22 M	
Lat/Long: 38. UTM: Zor Radius: 80 Elevation: 15 Location: SE Ecological: NE: AG: Threat: THI General: 2 A Owner/Manager: UN	3.61289° / -121.53423° sine-10 N4274838 E627615) meters 5 ft E OF THE I-80/WEST EL CAMINO EST TREE IS A LARGE COTTONM SRICULTURAL LAND BORDERED HREATENED BY URBAN DEVELOR ADULTS AND 1 JUVENILE (YOUN	Symbol Type: PO CLOVERLEAF, SACRAMENTO VOOD NEAR THE REMAINS OF AN OLD BY URBAN DEVELOPMENT AND A MA PMENT; SITE WILL LIKELY BE LOST TO	PECIFIC Section: OINT Meridian: D HOMESTEAD; SURROUNDING FORALIOR FREEWAY. D DEVELOPMENT IN 2-5 YEARS.	04E 22 M	
UTM: Zor Radius: 80 Elevation: 15 Location: SE Ecological: NE: AG Threat: THI General: 2 A Owner/Manager: UN Occurrence No. 123	one-10 N4274838 E627615 O meters O meters O fit E OF THE I-80/WEST EL CAMINO EST TREE IS A LARGE COTTONM SRICULTURAL LAND BORDERED IREATENED BY URBAN DEVELOI ADULTS AND 1 JUVENILE (YOUN NKNOWN	Symbol Type: PO CLOVERLEAF, SACRAMENTO VOOD NEAR THE REMAINS OF AN OLD BY URBAN DEVELOPMENT AND A MA PMENT; SITE WILL LIKELY BE LOST TO	PECIFIC Section: OINT Meridian: D HOMESTEAD; SURROUNDING FORALIOR FREEWAY. D DEVELOPMENT IN 2-5 YEARS.	04E 22 M	
Radius: 80 Elevation: 15 Location: SE Ecological: NE: AG: Threat: THI General: 2 A Owner/Manager: UN	O meters 5 ft E OF THE I-80/WEST EL CAMINO EST TREE IS A LARGE COTTONW GRICULTURAL LAND BORDERED HREATENED BY URBAN DEVELOI ADULTS AND 1 JUVENILE (YOUN NKNOWN	Symbol Type: PO CLOVERLEAF, SACRAMENTO VOOD NEAR THE REMAINS OF AN OLD BY URBAN DEVELOPMENT AND A MA PMENT; SITE WILL LIKELY BE LOST TO	PECIFIC Section: OINT Meridian: D HOMESTEAD; SURROUNDING FORALIJOR FREEWAY. D DEVELOPMENT IN 2-5 YEARS.	22 M	
Elevation: 15 Location: SE Ecological: NE: AG: Threat: THI General: 2 A Owner/Manager: UN Occurrence No. 123	5 ft E OF THE I-80/WEST EL CAMINO EST TREE IS A LARGE COTTONW GRICULTURAL LAND BORDERED IREATENED BY URBAN DEVELOI ADULTS AND 1 JUVENILE (YOUN NKNOWN	Symbol Type: PO CLOVERLEAF, SACRAMENTO VOOD NEAR THE REMAINS OF AN OLD BY URBAN DEVELOPMENT AND A MA PMENT; SITE WILL LIKELY BE LOST TO	OINT Meridian: D HOMESTEAD; SURROUNDING FORA- JOR FREEWAY. D DEVELOPMENT IN 2-5 YEARS.	М	
Location: SE Ecological: NE: AG: Threat: THI General: 2 A Owner/Manager: UN	E OF THE I-80/WEST EL CAMINO EST TREE IS A LARGE COTTON' SRICULTURAL LAND BORDERED HREATENED BY URBAN DEVELOI ADULTS AND 1 JUVENILE (YOUN NKNOWN	CLOVERLEAF, SACRAMENTO WOOD NEAR THE REMAINS OF AN OLD BY URBAN DEVELOPMENT AND A MA PMENT; SITE WILL LIKELY BE LOST TO	D HOMESTEAD; SURROUNDING FORA JOR FREEWAY. D DEVELOPMENT IN 2-5 YEARS.		TAT CONSISTS OF
Ecological: NE: AG: Threat: THI General: 2 A Owner/Manager: UN	EST TREE IS A LARGE COTTONW SRICULTURAL LAND BORDERED HREATENED BY URBAN DEVELOI ADULTS AND 1 JUVENILE (YOUN NKNOWN	VOOD NEAR THE REMAINS OF AN OLD BY URBAN DEVELOPMENT AND A MA PMENT; SITE WILL LIKELY BE LOST TO	JOR FREEWAY. O DEVELOPMENT IN 2-5 YEARS.	GING HABI	TAT CONSISTS OF
AG Threat: THI General: 2 A Owner/Manager: UN	GRICULTURAL LAND BORDERED HREATENED BY URBAN DEVELOI ADULTS AND 1 JUVENILE (YOUN NKNOWN	BY URBAN DEVELOPMENT AND A MA PMENT; SITE WILL LIKELY BE LOST TO	JOR FREEWAY. O DEVELOPMENT IN 2-5 YEARS.	GING HABI	TAT CONSISTS OF
General: 2 A Owner/Manager: UN Occurrence No. 123	ADULTS AND 1 JUVENILE (YOUN NKNOWN				
Owner/Manager: UN	NKNOWN	G BANDED) OBSERVED AT THE NEST	SITE ON 23 JUN 2001.		
Occurrence No. 123					
	32 Map Index: 5185				
	July Illusti 0100	52 EO Index: 518	352	- Dates La	st Seen
Occ Rank: God	boo	20 110011		Element:	2003-07-16
•	atural/Native occurrence			Site:	2003-07-16
Presence: Pre Trend: Uni			Record Last	Undated:	2003-07-28
	ERSON, R. 2003 (OBS)				
Quad Summary: SA	ACRAMENTO WEST (3812155/513	BD)	****		
County Summary: SA	ACRAMENTO				
Lat/Long: 38.	3.60709° / -121.52481°		Township:	09N	
	one-10 N4274209 E628445		Range:	04E	
Radius: 80 Elevation: 25	0 meters	Mapping Precision: Si Symbol Type: Pr			Qtr: NE
		AIN DRAINAGE CANAL, 0.1 MILE NORT			
		RTH OF PUMP STATION 1B AT THE GA			
=		RE, ADJACENT TO A TREE CLUMP; SUR	RROUNDED BY RIPARIAN SYCAMORE	AND OAK	S.
General: NE	EST WITH 1 JUVENILE OBSERVE	D ON 16 JUL 2003.			
Owner/Manager: RE	ECLAMATION DIST 1000				
Occurrence No. 134	343 Map Index: 5659	90 EO Index : 566	506	- Dates La	ıst Seen
Occ Rank: Fai	•	LO linex: 500		Element:	
Origin: Nat	atural/Native occurrence			Site:	2004-08-03
Presence: Pre			Record Last	Undated:	2004-09-01
Trend: Uni Main Source: RE	nknown ESSEGUIE, L. J. 2004 (OBS)		Necolu Last	Spanteu.	200, 00-01
	ACRAMENTO WEST (3812155/513	3D)			
County Summary: YO	•	·•			
	8.52506° / -121.56269°		Township:	08N	
	one-10 N4265053 E625289		Range:		
Radius: 80	0 meters	Mapping Precision: S	SPECIFIC Section:	20	Qtr: XX
Elevation: 10	0 ft	Symbol Type: P	OINT Meridian:	M	
Location: EA	AST SIDE OF JEFFERSON BOULE	EVARD, 0.1 MILE NORTH OF BEVAN RO	OAD, 2.5 MILES SOUTH OF THE PORT	OF SACRA	MENTO
	004 NEST WAS AT THE 85% HEIG ARMSTEAD AT 3975 JEFFERSON	GHT, ON THE NORTH SIDE OF A BLACK I BOULEVARD.	K WALNUT IN THE MIDDLE OF THE SO	OUTH EDGE	OF THE FORMER
Ecological: NE	EST TREE IS A BLACK WALNUT;	SURROUNDED BY RUDERAL AND ABA	ANDONED ALFALFA.		
Threat: TH	HREATENED BY IMMINENT DEVE	ELOPMENT.			
General: NE	EST ȘITE MONITORED 6 JUN-3 A	UG 2004; NO YOUNG FLEDGED.			

smocerus californic	sus aimorpnus			
valley elderberry longho			Code: IICOL48011	
Statu		DDB Element Ranks	Other Lists	
Federal: Threaten State: None	eu '	Global: G3T2 State: S2	CDFG Status:	
Habitat As	sociations			
		PRNIA, IN ASSOCIATION WITH BLUE ELDERBEF	RRY (SAMBUCUS MEXICANA)	
		CHES IN DIAMETER; SOME PREFERENCE SHOW		RRIES.
Occurrence No.	6 Map Index: 11337	EO Index: 22744	Dates Las	at Seen
Occ Rank:	•		Element:	1984-06-XX
Origin:	Natural/Native occurrence		Site:	1984-06-XX
	Presumed Extant		Record Last Updated:	1998-09-08
	Decreasing EYA, B. 1976 (LIT)		nccora Last opuateu.	,555-55-66
County Summary:	SACRAMENTO EAST (3812154/512C)			
	38.59819° / -121.46807° Zono 10 N4273301 E633403		Township: 09N	
	Zone-10 N4273301 E633403 27.2 ac	Mapping Precision: SPECIFIC	Range: 05E Section: 30	Qtr: SE
Elevation:		Symbol Type: POLYGON	Meridian: M	
Locations	JUST SOUTH OF HIGHWAY 160 AT DEL PAS			
	SACRAMENTO ZONE - JOHNSON INDUSTRIA			
	LARVAE ARE BORERS; ADULTS FEED ON FO			
_				
	ADULTS OBSERVED BY ARNOLD IN 1984.			
Owner/Manager:	PVI			
Occurrence No.	7 Map Index: 11410	EO Index: 22742	— Dates La	st Seen
Occ Rank:	•		Element:	1984-06-XX
	Natural/Native occurrence		Site:	1984-06-XX
	Presumed Extant Unknown		Record Last Updated:	1998-07-15
	ENG, L. 1983 (PERS)		mar abanton.	
***************************************	SACRAMENTO EAST (3812154/512C)			
County Summary:	•			
	38.58184° / -121.42968°		Township: 08N	
	Zone-10 N4271543 E636777		Range: 05E	
	1/5 mile	Mapping Precision: NON-SPECIFIC	Section; XX	Qtr: XX
Elevation:	25 ft	Symbol Type: POINT	Meridian: M	
		GLEN HALL PARK (ACROSS FROM CAL EXPO),	RIVER MILE 5.	
Ecological:	HABITAT IS A NARROW RIPARIAN BAND.			
General:		5 CM DIAMETER) ELDERBERRY SHRUB. FEMA		
		N WAS RELEASED AT CAPTURE SITE. ADULTS	WERE ALSO OBSERVED BY A	RNOLD IN 1984.
Owner/Manager:	UNKNOWN			
Occurrence No.	8 Map Index: 11398	EO Index: 22739	Dates La	st Seen
Occ Rank:	Unknown		Element:	XXXX-XX-XX
-	Natural/Native occurrence		Site:	1984-06-XX
	Presumed Extant Unknown		Record Last Updated:	1998-07-15
	U.S. FISH & WILDLIFE SERVICE 1984 (LIT)		and apaulou.	
	SACRAMENTO EAST (3812154/512C)			
County Summary:	· · · · · · · · · · · · · · · · · · ·			
			-	
-	38.58768° / -121.43495° Zone-10 N4272184 E636307		Township: 09N Range: 05E	
	1/5 mile	Mapping Precision: NON-SPECIFIC	Range: 05E Section: XX	Qtr: XX
Elevation:		Symbol Type: POINT	Meridian: M	
Location:	BUSHY LAKE, NEAR CAL EXPO.			
		AND ADULTS FEED ON ELDERBERRY FOLIAG	E.	
-		NO ADULTS OR FRESH EXIT HOLES OBSERVE		
General:	OGELECTIONS KNOWN FROM THIS AREA.	THE ADDETO ON TINCOTIENT HOLES OBSERVE	D 114 1304.	
Owner/Manager:	D) CC			

valley elderberry longho		NDDB Element Ranks	Element Code:	IICOL48011 Other Lists		
Federal: Threater State: None		Global: G3T2 State: S2		CDFG Statu	s:	
General: OCCUR	S ONLY IN THE CENTRAL VALLEY OF CAL IS TO LAY EGGS IN ELDERBERRRIES 2-8		-			RRIES.
_		EO Index: 22	740		Dates Las lement: Site:	1984-06-00 1984-06-00
Trend:	Unknown ARNOLD, R. 1984 (LIT)			Record Last U	lpdated:	1998-07-14
Quad Summary: County Summary:	SACRAMENTO EAST (3812154/512C) SACRAMENTO					
UTM:	38.58961° / -121.46495° Zone-10 N4272354 E633690 1/5 mile 10 ft	Mapping Precision: Symbol Type:		Township: Range: Section: Meridian:		Qtr: XX
Location Detail:	AMERICAN RIVER FLOODPLAIN 22 ACRE ADULTS OBSERVED ON "STRESSED" EL	DERBERRIES IN RIPARIAN VEC	,			
General: Owner/Manager:	NORTH SACRAMENTO LAND COMPANY PVT	PROPERTY.				
Occurrence No. Occ Rank: Origin:	•	EO Index: 22	2741		Dates Las lement: Site:	st Seen 1984-06-00 1984-06-00
Presence: Trend:	Presumed Extant Unknown ARNOLD, R. 1984 (LIT)			Record Last (Jpdated:	1998-07-14
Quad Summary: County Summary:	SACRAMENTO EAST (3812154/512C) SACRAMENTO					
UTM:	38.58101° / -121.41885° Zone-10 N4271467 E637721 1/5 mile 10 ft	Mapping Precision: Symbol Type:		Township: Range: Section: Meridian:	09N 05E XX M	Qtr: XX
	BETWEEN MILEAGE MARKERS 6 & 7 ON ADULTS OBSERVED BY ARNOLD ON "ST UNKNOWN			LONG THE AME	RICAN RIV	/ER.
	Unknown Natural/Native occurrence	EO Index: 12	2887		Dates La Element: Site:	st Seen 1984-06-00 1984-06-00
Trend:	Presumed Extant Unknown ARNOLD, R. 1984 (LIT)			Record Last	Jpdated:	1998-07-14
Quad Summary: County Summary:	SACRAMENTO EAST (3812154/512C) SACRAMENTO					
UTM:	38.60461° / -121.47634° Zone-10 N4274002 E632670 1/5 mile 10 ft	Mapping Precision: Symbol Type:		Township: Range: Section: Meridian:	09N 05E XX M	Qtr: XX
Location Detail: Ecological:	JUNCTION OF GARDEN HIGHWAY AND I 10 ACRE PARCEL, REFERRED TO AS TH MOST BEETLES FOUND ON "STRESSED	E NORTHGATE TRIANGLE.				
	ADULTS OBSERVED BY ARNOLD. UNKNOWN					

valley elderberry longho	ıs ———	NDDB Element Ranks -	Element Co	de: IICOL48011 Other Lists		
Federal: Threater State: None		Global: G3T2 State: S2		CDFG Statu	s:	
	sociations S ONLY IN THE CENTRAL VALLEY OF CAIRS TO LAY EGGS IN ELDERBERRRIES 2-8					ERRIES.
Presence:		EO Index:	22733		Dates La: lement: Site:	XXXX-XX-XX 1985-04-24 1989-08-11
Main Source:	JONES & STOKES ASSOC. 1985 (LIT) SACRAMENTO WEST (3812155/513D)		<u> </u>		•	
=	SACRAMENTO, YOLO					· · · · · · · · · · · · · · · · · · ·
UTM:	38.59601° / -121.54801° Zone-10 N4272946 E626445 1/5 mile 20 ft	Mapping Precisio Symbol Typ	n: NON-SPECIFIC ne: POINT	Township: Range: Section: Meridian:	09N 04E XX M	Qtr: XX
	SACRAMENTO RIV MI 62.5 W AT I-80.	DOV STAND LOCATED ALON	C THE DAIL DOAD TOAC	CO WITH A DICU DO	NOTV (F	OW) OF EVIT HOU
=	HABITAT IS A NEARLY-PURE ELDERBEF NO BEETLES OBSERVED; SITE VISITED UNKNOWN		G THE MAILKUAD TRACE	VO, WITH A HIGH DE	_HOIIT (50	JOJ OF EXIT HOLE
Presence:	Unknown Natural/Native occurrence Presumed Extant	EO Index:	22723		Dates La lement: Site:	st Seen 1985-09-04 1985-09-04 1989-08-11
	Unknown SCHONHOLTZ, R. 1986 (OBS)			Necolu Last C	rpuateu.	.505-05-11
=	SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO					
UTM:	38.59740° / -121.51079° Zone-10 N4273153 E629684 1/5 mile 30 ft	Mapping Precision Symbol Typ	on: NON-SPECIFIC	Township: Range: Section: Meridian:	09N 04E XX M	Qtr: XX
Location:	SACRAMENTO RIVER, OPPOSITE MOUT	TH OF AMERICAN RIVER, AT	RIVER MI 60.3, W BANK.			
Threat: General:	HABITAT CONSISTS OF ELDERBERRY S THREAT OF DEVELOPMENT INTO LIGHT EXIT HOLES FOUND.			WOOD RIPARIAN W	OODLANI	D.
Owner/Manager:	PVT					
Presence:		EO Index:	22724	Record Last		1985-09-04 1985-09-04
	SCHONHOLTZ, R. 1986 (OBS)	······				
-	SACRAMENTO WEST (3812155/513D) SACRAMENTO, YOLO					
UTM:	38.59156° / -121.50913° Zone-10 N4272507 E629839 1/5 mile	Mapping Precision Symbol Typ	on: NON-SPECIFIC pe: POINT	Township: Range: Section: Meridian:	09N 04E XX M	Qtr: XX
	SACRAMENTO RIVER, OPPOSITE MOU	•				
Ecological:	HABITAT CONSISTS OF ELDERBERRY STATEMENT OF DEVELOPMENT INTO THE			WOOD RIPARIAN W	OODLAN	D.
	EXIT HOLES FOUND.					

smocerus californi	•					
valley elderberry longho	orn beette		Element Code: IICOL48011			
State		NDDB Element Rai			Other Lists	
Federal: Threate	ned	Global: G3T2		CDFG Status	s:	
State: None		State: S2				
Habitat As	ssociations ————					
General: OCCUR	S ONLY IN THE CENTRAL VALI	EY OF CALIFORNIA, IN ASSOC	CIATION WITH BLUE ELDERBER	RY (SAMBUCUS MEX	ICANA).	
Micro: PREFE	RS TO LAY EGGS IN ELDERBEF	RRRIES 2-8 INCHES IN DIAMET	ER; SOME PREFERENCE SHOW	N FOR "STRESSED"	ELDERBI	ERRIES.
Occurrence No.	56 Map Index:	11236 EO	Index: 22712		Dates La	st Seen
Occ Rank:	· · · · · · · · · · · · · · · · · · ·			E	lement:	1985-09-04
	Natural/Native occurrence				Site:	1985-09-04
	Presumed Extant					
Trend:	Unknown			Record Last Up	pdated:	1989-08-11
Main Source:	SCHONHOLTZ, R. 1985 (OBS)					
Quad Summary:	SACRAMENTO WEST (381215	5/513D)				
County Summary:	SACRAMENTO, YOLO					
Lat/Long:	38.60295° / -121.52189°			Township:	09N	
UTM:	Zone-10 N4273753 E628707			Range:	04E	
	1/5 mile	Mapping	Precision: NON-SPECIFIC	Section:	XX	Qtr: XX
Elevation:	25 ft	Syn	nbol Type: POINT	Meridian:	М	
Location:	SACRAMENTO RIVER, OPPOS	SITE JCT WITH NATOMAS, MAI	N DRAINAGE CANAL, RIVER MIL	_E 61.		
Ecological:	HABITAT CONSISTS OF ELDE	RBERRY AND SAVANNAH/ELD	ERBERRY TREES IN A COTTON	IWOOD RIPARIAN WO	OODLAND	Э.
Threat:	THREAT OF DEVELOPMENT.					
General:	YELLOW WARBLER AND SWA	AINSON'S HAWK ALSO OBSER'	VED AT THE SITE.			

				Element C	ode: CTT63440CA		
Statu	us	—— ног	OB Element Ranks -		Other Lists		
Federal: None		G	lobal: G2				
State: None			State: S2.1				
Habitat As	sociations						
General:							
Micro:							
							
Occurrence No.	* · · · · · · · · · · · · · · · · · · ·	11371	EO Index:	15253		Dates La: lement:	st Seen ——— 1987-XX-XX
Occ Rank:						Site:	1987-XX-XX
-	Natural/Native occurrence Presumed Extant					Site.	1307-704-704
	Unknown				Record Last L	Jpdated:	1998-07-23
	SAC. CO. PARKS & REC. DEP	T. 1987 (LIT)					
Quad Summary:	SACRAMENTO EAST (381215	4/512C)		*			
County Summary:	•	,					
Lat/Long:	38.59206° / -121.44612°				Township:	09N	
_	Zone-10 N4272653 E635326				Range:	05E	
	51.3 ac		Mapping Precision	on: SPECIFIC	Section:	32	Qtr: XX
Elevation:				pe: POLYGON	Meridian:	М	4
	CAL EXPO, ON AMERICAN RI	VER ELOODEL A			(UND HWA 80		
	BOUNDARY GENERALIZED F					ארוויים	CAL EYPO
Ecological:	SAMBUCUS MEXICANA, CENT	TAUREA SOLSTI	TIALIS, ELYMUS TRITI	CHOIDES, BROMUS DIA	NDRUS, FOENICULU	IM VULGA	RE.
General:	LEASED BY SACRAMENTO C		RECREATION DEPT I	JANAGEMENT PLAN EM	IPHASIZES PRESER	ATION &	RESTORATION
	WAS OCC #002 OF CTT63440	CCA.					
Owner/Manager:	STATE (SAC, COUNTY LEASE)					
						Dates La	-4 C
Occurrence No.	•	11402	EO Index:	15252		Dates La Element:	1987-XX-XX
Occ Rank:	Unknown Natural/Native occurrence				•	Site:	1987-XX-XX
-	Presumed Extant					Site.	1307-70(-70)
	Unknown				Record Last I	Jpdated:	1998-07-23
	SAC. CO. PARKS & REC. DEP	T. 1987 (LIT)					
Quad Summary:	SACRAMENTO EAST (381215	4/512C)					
County Summary:	SACRAMENTO						
Lat/Long:	38,58433° / -121,43294°				Township:	09N	
	Zone-10 N4271815 E636488				Range:	05E	
Area:			Mapping Precisi	on: SPECIFIC	Section:	33	Qtr: S
Elevation:	35 ft	•	Symbol Ty	pe: POLYGON	Meridian:	М	
Location:	CAL EXPO, ON AMERICAN RI	VER FLOODPLA	IN. SOUTH & SOUTHE	AST OF BUSHY LAKE.		4//	
						NOT CM	5450
Location Dotaile					HES IN THIS DODTIO		
					HES IN THIS PORTIO		
	SAMBUCUS MEXICANA, CEN						
Ecological:		TAUREA SOLST	ITIALIS, ELYMUS TRITI	COIDES, BROMUS DIAN	IDRUS, FOENICULUM	// VULGAR	E.
Ecological:	SAMBUCUS MEXICANA, CEN	TAUREA SOLST	ITIALIS, ELYMUS TRITI	COIDES, BROMUS DIAN	IDRUS, FOENICULUM	// VULGAR	E.
Ecological: General:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA	TAUREA SOLST C COUNTY PAR	ITIALIS, ELYMUS TRITI	COIDES, BROMUS DIAN	IDRUS, FOENICULUM	// VULGAR	E.
Ecological: General: Owner/Manager:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE	TAUREA SOLSTI C COUNTY PAR	ITIALIS, ELYMUS TRITI KS & REC DEPT. MGM	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF	IDRUS, FOENICULUM	// VULGAR	E. N. THIS WAS O
Ecological: General: Owner/Manager: Occurrence No.	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE	TAUREA SOLSTI C COUNTY PAR	ITIALIS, ELYMUS TRITI	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF	IDRUS, FOENICULUM RESERVATION & RES	A VULGAR STORATIO Dates La	E. N. THIS WAS O
Ecological: General: Owner/Manager: Occurrence No. Occ Rank:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE 4 Map Index: Fair	TAUREA SOLSTI C COUNTY PAR	ITIALIS, ELYMUS TRITI KS & REC DEPT. MGM	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF	IDRUS, FOENICULUM RESERVATION & RES	// VULGAR	E. N. THIS WAS O
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE 4 Map Index: Fair Natural/Native occurrence	TAUREA SOLSTI C COUNTY PAR	ITIALIS, ELYMUS TRITI KS & REC DEPT. MGM	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF	IDRUS, FOENICULUM RESERVATION & RES	N VULGAR STORATIO Dates La Element:	E. N. THIS WAS O
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE 4 Map Index: Fair	TAUREA SOLSTI C COUNTY PAR	ITIALIS, ELYMUS TRITI KS & REC DEPT. MGM	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF	IDRUS, FOENICULUM RESERVATION & RES	Dates La Element: Site:	E. N. THIS WAS O
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE 4 Map Index: Fair Natural/Native occurrence Presumed Extant	TAUREA SOLSTI C COUNTY PAR (5) 21067	ITIALIS, ELYMUS TRITI KS & REC DEPT. MGM	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF	IDRUS, FOENICULUM RESERVATION & RES	Dates La Element: Site:	E. N. THIS WAS O
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE 4 Map Index: Fair Natural/Native occurrence Presumed Extant Unknown	TAUREA SOLSTI C COUNTY PAR 21067	ITIALIS, ELYMUS TRITI KS & REC DEPT. MGM	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF	IDRUS, FOENICULUM RESERVATION & RES	Dates La Element: Site:	E. N. THIS WAS O
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE 4 Map Index: Fair Natural/Native occurrence Presumed Extant Unknown SCHONHOLTZ, R. 1985 (OBS SACRAMENTO WEST (38121	TAUREA SOLSTI C COUNTY PAR 21067	ITIALIS, ELYMUS TRITI KS & REC DEPT. MGM	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF	IDRUS, FOENICULUM RESERVATION & RES	Dates La Element: Site:	E. N. THIS WAS O
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE 4 Map Index: Fair Natural/Native occurrence Presumed Extant Unknown SCHONHOLTZ, R. 1985 (OBS SACRAMENTO WEST (38121- YOLO	TAUREA SOLSTI C COUNTY PAR 21067	ITIALIS, ELYMUS TRITI KS & REC DEPT. MGM	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF	IDRUS, FOENICULUM RESERVATION & RES	Dates La Element: Site: Updated:	E. N. THIS WAS O
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE 4 Map Index: Fair Natural/Native occurrence Presumed Extant Unknown SCHONHOLTZ, R. 1985 (OBS SACRAMENTO WEST (38121 YOLO 38.59758° / -121.51081°	TAUREA SOLSTI C COUNTY PAR 21067	ITIALIS, ELYMUS TRITI KS & REC DEPT. MGM	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF	Record Last	Dates La Element: Site: Updated:	E. N. THIS WAS O
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE 4 Map Index: Fair Natural/Native occurrence Presumed Extant Unknown SCHONHOLTZ, R. 1985 (OBS SACRAMENTO WEST (38121- YOLO	TAUREA SOLSTI C COUNTY PAR 21067	ITIALIS, ELYMUS TRITI KS & REC DEPT. MGM EO Index:	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF 9156	IDRUS, FOENICULUM RESERVATION & RES	Dates La Element: Site: Updated:	E. N. THIS WAS O
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE 4 Map Index: Fair Natural/Native occurrence Presumed Extant Unknown SCHONHOLTZ, R. 1985 (OBS SACRAMENTO WEST (38121 YOLO 38.59758° / -121.51081° Zone-10 N4273172 E629682 80 meters	TAUREA SOLSTI C COUNTY PAR 21067	ITIALIS, ELYMUS TRITI KS & REC DEPT. MGM EO Index:	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF 9156	IDRUS, FOENICULUM RESERVATION & RES Record Last	Dates La Element: Site: Updated:	E. N. THIS WAS O IST Seen 1985-09-04 1998-07-23
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE 4 Map Index: Fair Natural/Native occurrence Presumed Extant Unknown SCHONHOLTZ, R. 1985 (OBS SACRAMENTO WEST (38121 YOLO 38.59758° / -121.51081° Zone-10 N4273172 E629682 80 meters 30 ft	TAUREA SOLSTI C COUNTY PAR 21067) 55/513D)	ITIALIS, ELYMUS TRITI KS & REC DEPT. MGM EO Index: Mapping Precisi Symbol Ty	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF 9156 ion: SPECIFIC rpe: POINT	Record Last Township: Range: Section: Meridian:	Dates La Element: Site: Updated:	E. N. THIS WAS O 1885-09-04 1985-09-04 1998-07-23 Qtr: XX
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE 4 Map Index: Fair Natural/Native occurrence Presumed Extant Unknown SCHONHOLTZ, R. 1985 (OBS SACRAMENTO WEST (38121 YOLO 36.59758° / -121.51081° Zone-10 N4273172 E629682 80 meters 30 ft : WEST BANK OF SACRAMEN	TAUREA SOLSTI C COUNTY PAR 21067) 55/513D)	ITIALIS, ELYMUS TRITI KS & REC DEPT. MGM EO Index: Mapping Precisi Symbol Ty	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF 9156 ion: SPECIFIC rpe: POINT	Record Last Township: Range: Section: Meridian:	Dates La Element: Site: Updated:	E. N. THIS WAS O 1885-09-04 1985-09-04 1998-07-23 Qtr: XX
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE 4 Map Index: Fair Natural/Native occurrence Presumed Extant Unknown SCHONHOLTZ, R. 1985 (OBS SACRAMENTO WEST (38121 YOLO 38.59758° / -121.51081° Zone-10 N4273172 E629682 80 meters 30 ft WEST BANK OF SACRAMEN' FOREST.	TAUREA SOLSTI C COUNTY PAR 21067 21067 TO RIVER, OPPO	Mapping Precising Symbol Type	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF 9156 9000: SPECIFIC Type: POINT RICAN RIVER. NEXT TO	Record Last Township: Range: Section: Meridian:	Dates La Element: Site: Updated:	E. N. THIS WAS O 1885-09-04 1985-09-04 1998-07-23 Qtr: XX
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	SAMBUCUS MEXICANA, CEN LEASED FROM STATE BY SA OF CTT63440CA. STATE (SAC COUNTY LEASE 4 Map Index: Fair Natural/Native occurrence Presumed Extant Unknown SCHONHOLTZ, R. 1985 (OBS SACRAMENTO WEST (38121 YOLO 36.59758° / -121.51081° Zone-10 N4273172 E629682 80 meters 30 ft : WEST BANK OF SACRAMEN	TAUREA SOLSTI C COUNTY PAR 21067 21067 TO RIVER, OPPO	Mapping Precising Symbol Type	COIDES, BROMUS DIAN T PLAN EMPHASIZES PF 9156 9000: SPECIFIC Type: POINT RICAN RIVER. NEXT TO	Record Last Township: Range: Section: Meridian:	Dates La Element: Site: Updated:	E. N. THIS WAS O 1885-09-04 1985-09-04 1998-07-23 Qtr: XX

Element Code: CTT63440CA Other Lists Other Lists	
Global: G2	
State: S2.1	
	
	•
	•
_	NDDB Element Ranks Other Lists Other Lists

Threat: UNKNOWN.

General: VALLEY ELDERBERRY LONGHORN BEETLE FOUND HERE. THIS WAS OCC #004 OF CTT63440CA.

Owner/Manager: PVT

ood Riparian Forest						٦
		Element Cod				- 1
s —————	NDDB Element Ranks —		- Other Lists			
	==					- 1
	State: 52.1					- 1
sociations						- 1
37 Map index: 1	1231 EO Index: 1	5664		Dates La	st Seen ———	
			E		1985-09-29	
				Site:	1985-09-29	
			Record Last L	Indated:	1998-09-02	
				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
SACRAMENTO WEST (3812155/5	513D)					
YOLO						
38.59715° / -121.51001°			Township:	09N		
			Range:	04E		
					Qtr: XX	
15 π	Symbol Type	POLYGON	Meridian:	м		
YOLO SIDE OF SACRAMENTO R	RIVER AT BRODERICK FROM RM 59.8 T	O RM 62.				
MOSTLY MATURE FOREST OF F	POPULUS FREMONTII, FRAXINUS LATI	FOLIA, SALIX SPP & QU	ERCUS LOBATA IN	I STRIP R	ANGING FROM <100 F	Т
TO >200 FT WIDE. PARTS HIGH	LY DISTURBED, OTHERS FAIRLY INTA	CT.				
THREATENED BY MARINA/DEVE	EL.					
RARE VALLEY ELDERBERRY LO	NGHORN BEETLE & SWAINSONS HAV	WK PRESENT. THIS WA	S OCC #037 OF CT	T61410C	١.	
UNKNOWN, PVT						
	Unknown Natural/Native occurrence Presumed Extant Unknown SCHONHOLTZ, R. 1985 (OBS) SACRAMENTO WEST (3812155/4 YOLO 38.59715° / -121.51001° Zone-10 N4273126 E629752 64.7 ac 15 ft YOLO SIDE OF SACRAMENTO R MOSTLY MATURE FOREST OF R TO >200 FT WIDE. PARTS HIGHT THREATENED BY MARINA/DEVE	NDDB Element Ranks Global: G2 State: S2.1 Sociations 37 Map Index: 11231 EO Index: 1 Unknown Natural/Native occurrence Presumed Extant Unknown SCHONHOLTZ, R. 1985 (OBS) SACRAMENTO WEST (3812155/513D) YOLO 38.59715° /-121.51001° Zone-10 N4273126 E629752 64.7 ac Mapping Precision 15 ft Symbol Type YOLO SIDE OF SACRAMENTO RIVER AT BRODERICK FROM RM 59.8 TO MOSTLY MATURE FOREST OF POPULUS FREMONTII, FRAXINUS LATI TO >200 FT WIDE. PARTS HIGHLY DISTURBED, OTHERS FAIRLY INTA THREATENED BY MARINA/DEVEL. RARE VALLEY ELDERBERRY LONGHORN BEETLE & SWAINSONS HAM	Sociations NDDB Element Ranks Global: G2 State: S2.1 Sociations Map Index: 11231 EO Index: 15664 Unknown Natural/Native occurrence Presumed Extant Unknown SCHONHOLTZ, R. 1985 (OBS) SACRAMENTO WEST (3812155/513D) YOLO 38.59715° /-121.51001° Zone-10 N4273126 E629752 64.7 ac Mapping Precision: SPECIFIC 15 ft Symbol Type: POLYGON YOLO SIDE OF SACRAMENTO RIVER AT BRODERICK FROM RM 59.8 TO RM 62. MOSTLY MATURE FOREST OF POPULUS FREMONTII, FRAXINUS LATIFOLIA, SALIX SPP & QU TO >200 FT WIDE. PARTS HIGHLY DISTURBED, OTHERS FAIRLY INTACT. THREATENED BY MARINA/DEVEL. RARE VALLEY ELDERBERRY LONGHORN BEETLE & SWAINSONS HAWK PRESENT. THIS WAS	Sociations NDDB Element Ranks Global: G2 State: S2.1	NDDB Element Ranks Global: G2 State: S2.1 37 Map Index: 11231 EO Index: 15664 — Dates La Unknown Natural/Native occurrence Presumed Extant Unknown Record Last Updated: SCHONHOLTZ, R. 1985 (OBS) SACRAMENTO WEST (3812155/513D) YOLO 38,59715°/-121.51001° Zone-10 N4273126 E629752 Range: 04E 64.7 ac Mapping Precision: SPECIFIC Section: XX 15 ft Symbol Type: POLYGON Meridian: M YOLO SIDE OF SACRAMENTO RIVER AT BRODERICK FROM RM 59.8 TO RM 62. MOSTLY MATURE FOREST OF POPULUS FREMONTII, FRAXINUS LATIFOLIA, SALIX SPP & QUERCUS LOBATA IN STRIP R TO >200 FT WIDE. PARTS HIGHLY DISTURBED, OTHERS FAIRLY INTACT. THREATENED BY MARINA/DEVEL. RARE VALLEY ELDERBERRY LONGHORN BEETLE & SWAINSONS HAWK PRESENT. THIS WAS OCC #037 OF CTT61410CA	Second Content Code: CTT61410CA Other Lists

iscus lasiocarpus				
rose-mallow		Ele	ment Code: PDMAL0H0Q0	
State	ıs ————	NDDB Element Ranks	Other Lists	
Federal: None		Global: G4	CNPS List: 2	
State: None		State: S2.2	R-E-D Code: 2-2-1	1
Habitat As	sociations —————			
General: MARSH	ES AND SWAMPS (FRESHWATER).			
Micro: MOIST,	FRESHWATER-SOAKED RIVER BANK	KS & LOW PEAT ISLANDS IN SLOUGHS; IN CALIF	, KNOWN FROM THE DELTA WATE	RSHED. 0-150M.
Occurrence No.	110 Map Index: 24959	9 EO Index: 6338	Dates L	ast Seen
Occ Rank:	Poor		Element:	1988-08-04
	Natural/Native occurrence		Site:	1988-08-04
	Presumed Extant		8	1001.01.10
	Unknown		Record Last Updated:	1994-01-13
Main Source:	MARTZ, C. 1988 (OBS)			
Quad Summary:	SACRAMENTO WEST (3812155/513D	D)		
County Summary:	SACRAMENTO		•	
Lat/Long:	38.61547° / -121.53364°		Township: 09N	
UTM :	Zone-10 N4275126 E627662		Range: 04E	
Radius:	80 meters	Mapping Precision: SPECIFIC	Section: 22	Qtr: SW
Elevation:	10 ft	Symbol Type: POINT	Meridian: M	
Location:	ON-RAMP TO EASTBOUND I-80 FRO	OM WEST EL CAMINO AVE., NORTH OF SACRAME	ENTO.	
Location Detail:	1/2 MILE NORTH OF SWALLOWS NE	EST GOLF COURSE IN DRAINAGE DITCH NEXT TO	O THE ON-RAMP.	
Ecological:	DRY DRAINAGE DITCH WITH MANY	WEEDY TAXA. ECHINOCHLOA CRUSGALLII, SO	RGHUM HALAPENSE, PICRIS ECHIO	IDES. CONVOLVULU
		HELIOTROPUM CURASSAVICUM AND SILYBUM !	•	,
Threat:	DITCH MAINTENANCE AND ROW MO	OWING ARE THREATS. CALTRANS MAINTENANG	CE LINITS ADVISED OF THIS SITE	
				ND 40000MTES
General:		I 1988. VERY DISTURBED SITE LACKING FRESH T ON NORTH SIDE OF I-80 IN THIS AREA SHOUL		IND ASSOCIATED

	np	Element C	ode: ICBRA10010	
Federal: Endange State: None		NDDB Element Ranks Global: G3 State: S2S3	Other Lists	· · · · · · · · · · · · · · · · · · ·
Habitat As				
		SACRAMENTO VALLEY CONTAINING CLEAR TO HIG IED SWALES OF UNPLOWED GRASSLANDS. SOME		& HIGHLY TURE
Occurrence No.	•	EO Index: 638	Dates La	
Occ Rank:	Unknown Natural/Native occurrence		Element: Site:	1995-03-31 1995-03-31
_	Presumed Extant		O.C.	
	Unknown		Record Last Updated:	1996-03-06
	SUGNET & ASSOC. 1995 (LIT)			
	CARMICHAEL (3812153/512D), SACRAMI	ENTO EAST (3812154/512C)		
County Summary:			T	
_	38.50564° / -121.37821° Zone-10 N4263165 E641409		Township: 08N Range: 05E	
	15.7 ac	Mapping Precision: NON-SPECIFIC	Section: 36	Qtr: NE
Elevation:	40 ft	Symbol Type: POLYGON	Meridian: M	
Location:	1.2 KM ESE OF ELDER CREEK ROAD X I	FLORIN PERKINS ROAD; SE OF THE FORMER SACR	RAMENTO ARMY DEPOT.	
Location Detail:	ELDER CREEK PROPERTY. LEPIDURUS	PACKARDI WERE FOUND IN 10 OF 90 SAMPLED W	ETLANDS.	
Ecological:	HARDPAN VERNAL POOLS IN ANNUAL (GRASSI AND		
Threat:	RURAL AGRICULTURE; URBAN DEVELO			
		OPMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS	#21,43,46: <50 ADULTS OBSE	RVED; POOLS
General:	POOL #86: 2/21/1995; <50 ADULTS OBSE	OPMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS	#21,43,46: <50 ADULTS OBSEI	RVED; POOLS
General:	POOL #86: 2/21/1995: <50 ADULTS OBSE #38,41,44,45,50,53: >50 ADULTS OBSER PVT-PIPE TRADES TRUST FUND	OPMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS	#21,43,46: <50 ADULTS OBSEI	
General: Owner/Manager: Occurrence No. Occ Rank:	POOL #86: 2/21/1995: <50 ADULTS OBSER #38,41,44,45,50,53: >50 ADULTS OBSER PVT-PIPE TRADES TRUST FUND 66	OPMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS VED; 4 ADULTS DEPOSITED IN CAS.	—— Dates La Element:	est Seen
General: Owner/Manager: Occurrence No. Occ Rank: Origin:	POOL #86: 2/21/1995: <50 ADULTS OBSER #38,41,44,45,50,53: >50 ADULTS OBSER PVT-PIPE TRADES TRUST FUND 66	OPMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS VED; 4 ADULTS DEPOSITED IN CAS.	Dates La	st Seen
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence:	POOL #86: 2/21/1995: <50 ADULTS OBSER #38,41,44,45,50,53: >50 ADULTS OBSER PVT-PIPE TRADES TRUST FUND 66	OPMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS VED; 4 ADULTS DEPOSITED IN CAS.	—— Dates La Element:	est Seen
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend:	POOL #86: 2/21/1995: <50 ADULTS OBSER #38,41,44,45,50,53: >50 ADULTS OBSER PVT-PIPE TRADES TRUST FUND 66	OPMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS VED; 4 ADULTS DEPOSITED IN CAS.	—— Dates La Element: Site:	1992-04-03 1992-04-03
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	POOL #86: 2/21/1995: <50 ADULTS OBSER #38,41,44,45,50,53: >50 ADULTS OBSER PVT-PIPE TRADES TRUST FUND 66 Map Index: 34791 Unknown Natural/Native occurrence Presumed Extant Unknown	OPMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS VED; 4 ADULTS DEPOSITED IN CAS.	—— Dates La Element: Site:	1992-04-03 1992-04-03
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	POOL #86: 2/21/1995: <50 ADULTS OBSER #38,41,44,45,50,53: >50 ADULTS OBSER PVT-PIPE TRADES TRUST FUND 66 Map Index: 34791 Unknown Natural/Native occurrence Presumed Extant Unknown KOFORD, E. 1992 (PERS) SACRAMENTO EAST (3812154/512C)	OPMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS VED; 4 ADULTS DEPOSITED IN CAS.	—— Dates La Element: Site:	1992-04-03 1992-04-03
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long:	POOL #86: 2/21/1995: <50 ADULTS OBSER #38,41,44,45,50,53: >50 ADULTS OBSER PVT-PIPE TRADES TRUST FUND 66 Map Index: 34791 Unknown Natural/Native occurrence Presumed Extant Unknown KOFORD, E. 1992 (PERS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.51058° / -121.40219°	OPMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS VED; 4 ADULTS DEPOSITED IN CAS.	—— Dates La Element: Site:	1992-04-03 1992-04-03
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	POOL #86: 2/21/1995: <50 ADULTS OBSER #38,41,44,45,50,53: >50 ADULTS OBSER PVT-PIPE TRADES TRUST FUND 66	OPMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS VED; 4 ADULTS DEPOSITED IN CAS. EO Index: 13036	— Dates La Element: Site: Record Last Updated: Township: 08N Range: 05E	1992-04-03 1992-04-03 1992-08-05
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius:	POOL #86: 2/21/1995: <50 ADULTS OBSER #38,41,44,45,50,53: >50 ADULTS OBSER PVT-PIPE TRADES TRUST FUND 66	DPMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS VED; 4 ADULTS DEPOSITED IN CAS. EO Index: 13036 Mapping Precision: SPECIFIC	— Dates La Element: Site: Record Last Updated: Township: 08N Range: 05E Section: 26	1992-04-03 1992-04-03
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	POOL #86: 2/21/1995: <50 ADULTS OBSER #38,41,44,45,50,53: >50 ADULTS OBSER PVT-PIPE TRADES TRUST FUND 66	DPMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS VED; 4 ADULTS DEPOSITED IN CAS. EO Index: 13036 Mapping Precision: SPECIFIC Symbol Type: POINT	— Dates La Element: Site: Record Last Updated: Township: 08N Range: 05E Section: 26 Meridian: M	1992-04-03 1992-04-03 1996-08-05 Qtr: SW
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	POOL #86: 2/21/1995: <50 ADULTS OBSER #38,41,44,45,50,53: >50 ADULTS OBSER PVT-PIPE TRADES TRUST FUND 66	PMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS VED; 4 ADULTS DEPOSITED IN CAS. EO Index: 13036 Mapping Precision: SPECIFIC Symbol Type: POINT DER CREEK RD) & SPTRR, NEAR POWER INN ROAL	— Dates La Element: Site: Record Last Updated: Township: 08N Range: 05E Section: 26 Meridian: M D; NEAR SW CORNER OF SAC	1992-04-03 1992-04-03 1996-08-05 Qtr: SW
Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location:	POOL #86: 2/21/1995: <50 ADULTS OBSER #38,41,44,45,50,53: >50 ADULTS OBSER PVT-PIPE TRADES TRUST FUND 66	DPMENT OCCURING IN VICINITY. ERVED, 3/31/1995: <50 ADULTS OBSERVED; POOLS VED; 4 ADULTS DEPOSITED IN CAS. EO Index: 13036 Mapping Precision: SPECIFIC Symbol Type: POINT	— Dates La Element: Site: Record Last Updated: Township: 08N Range: 05E Section: 26 Meridian: M D; NEAR SW CORNER OF SAC	1992-04-03 1992-04-03 1996-08-05 Qtr: SW

vernal pool tadpole shrir		W000 51	Element Code: ICBRA10010 Other Lists	
Federal: Endange State: None Habitat As	ered	NDDB Element Ranks Global: G3 State: S2S3	Other Lists CDFG Status:	
General: INHABIT	S VERNAL POOLS AND SWALES I	N THE SACRAMENTO VALLEY CONTAINING OTTOMED SWALES OF UNPLOWED GRASS	CLEAR TO HIGHLY TURBID WATER. SLANDS. SOME POOLS ARE MUD-BOTTOMED	& HIGHLY TURBIC
- 				
Occurrence No. Occ Rank: Origin:	•	792 EO Index : 13094	—— Dates Las Element: Site:	1992-04-02 1992-04-02
Trend:	Presumed Extant Unknown KOFORD, E. 1992 (PERS)		Record Last Updated:	1996-08-05
Quad Summary: County Summary:	SACRAMENTO EAST (3812154/51: SACRAMENTO	2C)		· · · · · · · · · · · · · · · · · · ·
UTM:	38.52498° / -121.40725° Zone-10 N4265267 E638840 80 meters	Mapping Precision: SPE	Township: 08N Range: 05E CIFIC Section: 26	Qtr: NW
Elevation:		Symbol Type: POIN		40
Location:	FRUITRIDGE ROAD X SPTRR, NE	AR POWER INN ROAD; NEAR NORTHWES	CORNER OF SACRAMENTO ARMY DEPOT.	
		RACTION RR, WHICH RUNS SE FROM COR	NER OF 65TH ST & HWY 50.	
-	TURBID POOL.	VE T KOLODD DRIDING GRANGA IN COOK	OF 1003: LINDEDIELLA COORESTALIO : 22	DDECENT
	PVT-SOUTHERN PACIFIC RR	E.J. KOFOKO DUKING SUKVEY IN SPRIN	G OF 1992; LINDERIELLA OCCIDENTALIS ALSO	PRESENT.
Occurrence No.		691 EO Index: 30608	Dates Las Element:	st Seen
Occ Rank: Origin:	Natural/Native occurrence		Site:	1992-04-02
	Presumed Extant		Record Last Updated:	1997-03-07
	Unknown SUGNET & ASSOC. 1993 (PERS)		Necord Last opuated.	1337-03-07
	FLORIN (3812144/496B), SACRAM	IENTO EAST (3812154/512C)		
County Summary:				
	38.50290° / -121.47384°		Township: 08N	
	Zone-10 N4262718 E633076 3/5 mile	Mapping Precision: NON	Range: 05E -SPECIFIC Section: 31	Qtr: XX
Elevation:		Symbol Type: POIN		Sen. W
Location:	SOUTH OF 47TH AVE, NORTH OF	FLORIN RD, EAST OF WOODBINE AVE. O	N SOUTHERN END OF SACRAMENTO.	
	ROADSIDE DITCHES SOMEWHER			
Ecological:	MOST OF THIS SECTION IS URBA	NIZED.		
General:	LEPIDURUS PACKARDI WAS OBS	SERVED IN A ROADSIDE DITCH ON 4/2/92.	SUGNET RECORD #144.	
Owner/Manager:	UNKNOWN			
Occurrence No.	93 Map Index: 33	692 EO Index: 30610	Dates La	st Seen
Occ Rank:				1992-04-03
-	Natural/Native occurrence Presumed Extant		Site:	1992-04-03
Trend:	Unknown		Record Last Updated:	1998-08-10
	SUGNET & ASSOC. 1993 (PERS)			
	FLORIN (3812144/496B), SACRAN	IENTO EAST (3812154/512C)		
County Summary:		·		
-	38.51048° / -121.39984° Zone-10 N4263669 E639514		Township: 08N Range: 05E	
	1,513.2 ac	Mapping Precision: SPE		Qtr: XX
Elevation:		Symbol Type: POL		
Location:	SOUTH OF FRUITRIDGE RD, NOF	RTH OF FLORIN RD, EAST OF POWER INN	RD, AND WEST OF FLORIN PERKINS RD.	
Location Detail:	MANMADE ROADSIDE DITCHES I	OCATED SOMEWHERE IN SECTIONS 26 A	ND 35.	
Ecological:	MOST OF SECTION 26 IS URBAN	IZED.		
General:		ED IN A ROADSIDE DITCH IN SECTION 26 A	ND A ROADSIDE DITCH IN SECTION 35. SUGN	NET RECORD #S
	145.			

alifomia linderiella		NDDB Element F		Code: ICBRA06010 Other Lists		
Federal: None State: None	us —	Global: G3 State: S2S3		CDFG Status	s:	
General: SEASO		PASSI ANDS WITH OLD ALLIN	VIAL SOILS UNDERLAIN BY HARD	DAN OR IN CANDETO	NE DEDE	FECIONS
	IN THE POOLS HAS VERY LO			DPAN OK IN SANDSTO	NE DEPR	ESSICIVS.
Occurrence No.	49 Map index:	21659	EO Index: 22317		Dates La	et Seen
Occ Rank:		31330	EO IIIdex. 22317		lement:	1995-02-14
•	Natural/Native occurrence				Site:	1995-04-21
	Presumed Extant Unknown			Record Last U	ndated:	1995-10-02
	FOSTER WHEELER ENVIRON	I. CORP. 1995 (LIT)		1100014 2451 0	puutou.	1000 10 02
Quad Summary:	SACRAMENTO EAST (381215	4/512C)				
County Summary:	SACRAMENTO	·				
Lat/Long:	38.51137° / -121.39697°			Township:	08N	<u> </u>
	Zone-10 N4263773 E639762				05 E	
Area: Elevation:	5.3 ac		ng Precision: NON-SPECIFIC Symbol Type: POLYGON		26 M	Qtr: SE
			MY RESERVE TRAINING CENTER			
			OF AND AD MODELT TO THE DUI	INUNO TO A OV		
Location Detail:	FOUND ONLY IN SEASONAL	WETLAND INSIDE THE OVAL	OF AND ADJACENT TO THE RUI			ON MET IN
Location Detail:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B	. OF AND ADJACENT TO THE RUI BETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA	S SURVEYED INCLUD		
Location Detail: Ecological:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS S SHALLOW SWALES, TIRE TR	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI	BETWEEN 12/19/94 & 4/21/95. ARE	ES SURVEYED INCLUD MOND, AND FIELD & F	ROADSID	E DRAINAGE DI
Location Detail: Ecological:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS S SHALLOW SWALES, TIRE TR	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B PACKS, PONDED AREAS IN RI WAS FOUND IN 6 OF THE 5	SETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/95	ES SURVEYED INCLUD MOND, AND FIELD & F	ROADSID	E DRAINAGE DI
Location Detail: Ecological: General:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS S SHALLOW SWALES, TIRE TO LINDERIELLA OCCIDENTALIS	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B SACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5 BRACHINECTA LYNCHI; MOF	SETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/95	ES SURVEYED INCLUD MOND, AND FIELD & F	ROADSID	E DRAINAGE DI
Location Detail: Ecological: General:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS SHALLOW SWALES, TIRE TE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5: BRACHINECTA LYNCHI; MOF TR CNTR	SETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/95	ES SURVEYED INCLUD MOND, AND FIELD & R 5; 31 ADULTS COLLEC	ROADSIDI TED AND	E DRAINAGE DI
Location Detail:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS : SHALLOW SWALES, TIRE TE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE 118 Map Index: Unknown	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5: BRACHINECTA LYNCHI; MOF TR CNTR	BETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/99 RE POOL INFO IN REPORT.	ES SURVEYED INCLUD MOND, AND FIELD & F 5; 31 ADULTS COLLEC [*]	ROADSIDI TED AND Dates La Ilement:	E DRAINAGE DI DEPOSITED IN st Seen 1995-03-31
Location Detail:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS : SHALLOW SWALES, TIRE THE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE 118 Map Index: Unknown Natural/Native occurrence	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5: BRACHINECTA LYNCHI; MOF TR CNTR	BETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/99 RE POOL INFO IN REPORT.	ES SURVEYED INCLUD MOND, AND FIELD & F 5; 31 ADULTS COLLEC [*]	ROADSIDI TED AND Dates La	E DRAINAGE DI DEPOSITED IN st Seen
Location Detail:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS : SHALLOW SWALES, TIRE TE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE 118 Map Index: Unknown	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5: BRACHINECTA LYNCHI; MOF TR CNTR	BETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/99 RE POOL INFO IN REPORT.	ES SURVEYED INCLUD MOND, AND FIELD & F 5; 31 ADULTS COLLEC [*]	Dates La	E DRAINAGE DI DEPOSITED IN st Seen 1995-03-31
Location Detail:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS SHALLOW SWALES, TIRE TE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE 118 Map Index: Unknown Natural/Native occurrence Presumed Extant	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5 BRACHINECTA LYNCHI; MOF TR CNTR 32443	BETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/99 RE POOL INFO IN REPORT.	ES SURVEYED INCLUD MOND, AND FIELD & F 5; 31 ADULTS COLLEC ———————————————————————————————————	Dates La	st Seen 1995-03-31 1995-03-31
Location Detail:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS SHALLOW SWALES, TIRE TE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE 118 Map Index: Unknown Natural/Native occurrence Presumed Extant Unknown	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5: BRACHINECTA LYNCHI; MOF TR CNTR 32443	BETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/95 RE POOL INFO IN REPORT. EO Index: 636	ES SURVEYED INCLUD MOND, AND FIELD & F 5; 31 ADULTS COLLEC ———————————————————————————————————	Dates La	st Seen 1995-03-31 1995-03-31
Location Detail:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS SHALLOW SWALES, TIRE TE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE 118	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5: BRACHINECTA LYNCHI; MOF TR CNTR 32443	BETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/95 RE POOL INFO IN REPORT. EO Index: 636	ES SURVEYED INCLUD MOND, AND FIELD & F 5; 31 ADULTS COLLEC ———————————————————————————————————	Dates La	st Seen 1995-03-31 1995-03-31
Location Detail: Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS SHALLOW SWALES, TIRE TE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE 118	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5: BRACHINECTA LYNCHI; MOF TR CNTR 32443	BETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/95 RE POOL INFO IN REPORT. EO Index: 636	ES SURVEYED INCLUD MOND, AND FIELD & F 5; 31 ADULTS COLLEC ———————————————————————————————————	Dates La	st Seen 1995-03-31 1995-03-31
Location Detail:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS : SHALLOW SWALES, TIRE TE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE 118 Map Index: Unknown Natural/Native occurrence Presumed Extant Unknown SUGNET & ASSOC. 1995 (LIT CARMICHAEL (3812153/512D SACRAMENTO 38.50564* / -121.37821* Zone-10 N4263165 E641409	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5: BRACHINECTA LYNCHI; MOF TR CNTR 32443	SETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/98 RE POOL INFO IN REPORT. EO Index: 636	ES SURVEYED INCLUD MOND, AND FIELD & F 5; 31 ADULTS COLLEC* E Record Last U Township: Range:	POADSIDITED AND Dates La ilement: Site: Ipdated:	st Seen 1995-03-31 1996-03-06
Location Detail:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS: SHALLOW SWALES, TIRE TE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE 118 Map Index: Unknown Natural/Native occurrence Presumed Extant Unknown SUGNET & ASSOC. 1995 (LIT CARMICHAEL (3812153/512D SACRAMENTO 38.50564* / -121.37821* Zone-10 N4263165 E641409 15.7 ac	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5: BRACHINECTA LYNCHI; MOF TR CNTR 32443)), SACRAMENTO EAST (3812	BETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/95 RE POOL INFO IN REPORT. EO Index: 636	ES SURVEYED INCLUD MOND, AND FIELD & F 5; 31 ADULTS COLLEC* Record Last U Township: Range: Section:	Dates La ilement: Site: lpdated:	st Seen 1995-03-31 1995-03-31
Location Detail:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS : SHALLOW SWALES, TIRE TE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE 118 Map Index: Unknown Natural/Native occurrence Presumed Extant Unknown SUGNET & ASSOC. 1995 (LIT CARMICHAEL (3812153/512D SACRAMENTO 38.50564° / -121.37821° Zone-10 N4263165 E641409 15.7 ac 40 ft	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5: BRACHINECTA LYNCHI; MOF TR CNTR 32443)), SACRAMENTO EAST (3812 Mapple	SETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/95 RE POOL INFO IN REPORT. EO Index: 636 154/512C) Ing Precision: NON-SPECIFIC Symbol Type: POLYGON	S SURVEYED INCLUD MOND, AND FIELD & F 5; 31 ADULTS COLLEC* E Record Last U Township: Range: Section: Meridian:	Dates La lement: Site: lpdated:	st Seen 1995-03-31 1996-03-06
Location Detail:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS S SHALLOW SWALES, TIRE TE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE 118 Map Index: Unknown Natural/Native occurrence Presumed Extant Unknown SUGNET & ASSOC. 1995 (LIT CARMICHAEL (3812153/512D SACRAMENTO 38.50564° / -121.37821° Zone-10 N4263165 E641409 15.7 ac 40 ft 1.2 KM ESE OF ELDER CREE	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5 BRACHINECTA LYNCHI; MOF TR CNTR 32443)), SACRAMENTO EAST (3812 Mapple K ROAD X FLORIN PERKINS	DETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/95 RE POOL INFO IN REPORT. EO Index: 636 154/512C) Ing Precision: NON-SPECIFIC	S SURVEYED INCLUD MOND, AND FIELD & F 5; 31 ADULTS COLLEC* Record Last U Township: Range: Section: Meridian: RAMENTO ARMY DEPo	Dates La lement: Site: lpdated:	st Seen 1995-03-31 1996-03-06
Location Detail: Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Area: Elevation: Location: Location Detail:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS S SHALLOW SWALES, TIRE TE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE 118 Map Index: Unknown Natural/Native occurrence Presumed Extant Unknown SUGNET & ASSOC. 1995 (LIT CARMICHAEL (3812153/512D SACRAMENTO 38.50564° / -121.37821° Zone-10 N4263165 E641409 15.7 ac 40 ft 1.2 KM ESE OF ELDER CREE	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5 BRACHINECTA LYNCHI; MOF TR CNTR 32443 Mapple K ROAD X FLORIN PERKINS LINDERIELLA OCCIDENTALIS	SETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/95 RE POOL INFO IN REPORT. EO Index: 636 154/512C) Ing Precision: NON-SPECIFIC Symbol Type: POLYGON ROAD; SE OF THE FORMER SAC	S SURVEYED INCLUD MOND, AND FIELD & F 5; 31 ADULTS COLLEC* Record Last U Township: Range: Section: Meridian: RAMENTO ARMY DEPo	Dates La lement: Site: lpdated:	st Seen 1995-03-31 1996-03-06
Location Detail: Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Area: Elevation: Location: Location Detail: Ecological:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS S SHALLOW SWALES, TIRE TE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE 118 Map Index: Unknown Natural/Native occurrence Presumed Extant Unknown SUGNET & ASSOC. 1995 (LIT CARMICHAEL (3812153/512D SACRAMENTO 38.50564° / -121.37821° Zone-10 N4263165 E641409 15.7 ac 40 ft 1.2 KM ESE OF ELDER CREE ELDER CREEK PROPERTY. 1	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5 BRACHINECTA LYNCHI; MOF TR CNTR 32443 Mapple K ROAD X FLORIN PERKINS INDERIELLA OCCIDENTALIS N ANNUAL GRASSLAND.	SETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/95 RE POOL INFO IN REPORT. EO Index: 636 154/512C) Ing Precision: NON-SPECIFIC Symbol Type: POLYGON ROAD; SE OF THE FORMER SAC	S SURVEYED INCLUD MOND, AND FIELD & F 5; 31 ADULTS COLLEC* Record Last U Township: Range: Section: Meridian: RAMENTO ARMY DEPo	Dates La lement: Site: lpdated:	st Seen 1995-03-31 1996-03-06
Location Detail:	FOUND ONLY IN SEASONAL 53 PONDED WATER AREAS SHALLOW SWALES, TIRE TE LINDERIELLA OCCIDENTALIS OF THE 6 POOLS ALSO HAD DOD-BT COLLINS RESERVE 118 Map Index: Unknown Natural/Native occurrence Presumed Extant Unknown SUGNET & ASSOC. 1995 (LIT CARMICHAEL (3812153/512D SACRAMENTO 38.50564° / -121.37821° Zone-10 N4263165 E641409 15.7 ac 40 ft 1.2 KM ESE OF ELDER CREE ELDER CREEK PROPERTY. I HARDPAN VERNAL POOLS II RURAL AGRICULTURE; URB.	WETLAND INSIDE THE OVAL SAMPLED EVERY 2 WEEKS B ACKS, PONDED AREAS IN RI S WAS FOUND IN 6 OF THE 5 BRACHINECTA LYNCHI; MOF TR CNTR 32443 Mapple K ROAD X FLORIN PERKINS INDERIELLA OCCIDENTALIS ANNUAL GRASSLAND. AN DEVELOPMENT OCCURIN	SETWEEN 12/19/94 & 4/21/95. ARE UNNING TRACK & BASEBALL DIA 3 SITES FROM 1/31/95 TO 2/14/95 RE POOL INFO IN REPORT. EO Index: 636 154/512C) Ing Precision: NON-SPECIFIC Symbol Type: POLYGON ROAD; SE OF THE FORMER SAC	S SURVEYED INCLUD MOND, AND FIELD & F 5; 31 ADULTS COLLEC FE Record Last U Township: Range: Section: Meridian: FRAMENTO ARMY DEPOLED WETLANDS.	Dates La lement: Site: lpdated:	st Seen 1995-03-31 1996-03-06

California linderiella Statu			Element Code: ICBRA06010 Other Lists	
Federal: None State: None	is	NDDB Element Ranks Global: G3 State: S2S3	CDFG Status:	
		IS WITH OLD ALLUVIAL SOILS UNDERLAIN NITY, CONDUCTIVITY, AND TDS.	BY HARDPAN OR IN SANDSTONE	DEPRESSIONS.
Occurrence No.	124 Map Index: 34791	EQ Index: 12939	Dat	tes Last Seen
Occ Rank:	Unknown		Elem	
-	Natural/Native occurrence Presumed Extant		•	Site: 1992-04-03
Trend:	Unknown		Record Last Upda	ited: 1996-08-05
	KOFORD, E. 1992 (PERS)		<u> </u>	
Quad Summary: County Summary:	SACRAMENTO EAST (3812154/512C) SACRAMENTO			
Lat/Long:	38.51058° / -121.40219°		Township: 08	N
UTM:	Zone-10 N4263677 E639309		Range: 05	E
Radius: Elevation:	80 meters 40 ft	Mapping Precision: SPECIFIC Symbol Type: POINT	Section: 26 Meridian: M	Qtr: SW
Location:	RAILROAD DITCH AT 47TH AVENUE (EI	LDER CREEK RD) & SPTRR, NEAR POWER	INN ROAD; NEAR SW CORNER OF	SACRAMENTO ARMY
Location Detail:	SPTRR IS SOUTHERN PACIFIC TRACTI	ON RR, WHICH RUNS SE FROM THE COR	NER OF 65TH ST & HWY 50.	
Ecological:	RAILROAD DITCH.			
General:	KOFORD OBSERVED LINDERIELLA DUI	RING SURVEY IN SPRING OF 1992; BRANC	CHINECTA LYNCHI AND LEPIDURUS	S PACKARDI ALSO OBS
Owner/Manager:	PVT-SOUTHERN PACIFIC RR			
Occurrence No.	125 Map Index: 34792	EO Index: 13153	Da	tes Last Seen
Occ Rank:	Unknown Natural/Native occurrence			nent: 1992-04-02 Site: 1992-04-02
-	Presumed Extant		•	site. 1552-04-02
	Unknown		Record Last Upda	ated: 1996-08-05
	KOFORD, E. 1992 (PERS)	· · · · · · · · · · · · · · · · · · ·		
Quad Summary: County Summary:	SACRAMENTO EAST (3812154/512C)			
	38.52498° / -121.40725°		T	
	Zone-10 N4265267 E638840		Township: 08 Range: 05	
	80 meters	Mapping Precision: SPECIFIC		Qtr: NW
Elevation:	40 ft	Symbol Type: POINT	Meridian: M	
		OWER INN ROAD; NEAR NORTHWEST CO		POT.
		ION RR, WHICH RUNS SE FROM CORNER	OF 65TH STREET AND HWY 50.	
J	TURBID POOL.			
		ORD DURING SURVEY IN SPRING OF 1992	; LEPIDURUS PACKARDI ALSO PRE	ESENT.
Owner/Manager:	PVT-SOUTHERN PACIFIC RR			
Occurrence No.	126 Map Index: 34793	EO Index: 12914		tes Last Seen
Occ Rank: Origin:	Unknown Natural/Native occurrence			nent: 1992-04-02 Site: 1992-04-02
	Presumed Extant			
	Unknown KOFORD, E. 1992 (PERS)		Record Last Upda	ated: 1996-08-05
	SACRAMENTO EAST (3812154/512C)			
County Summary:				
			T	
	38.52515° / -121.38497° Zone-10 N4265320 E640782		Township: 08 Range: 05	
Radius:	80 meters	Mapping Precision: SPECIFIC	Section: 25	Qtr: NW
Elevation:		Symbol Type: POINT ORNIA TRACTION (RR), NEAR FLORIN-PER	Meridian: M RKINS ROAD: NEAR NE CORNER O	
	DEPOT.	Company of the second of t		
	CLEAR POOL WITH DETRITUS.			
=				
General:	LINDERIELLA OBSERVED BY KOFORD PVT-CENTRAL CALIFORNIA TRR	DURING SURVEY IN SPRING OF 1992.		

nderiella occidental	is				
California linderiella			Element Code: ICBRA06010		
State	is —————	NDDB Element Ranks	Other Lists	·	
Federal: None State: None		Global: G3 State: S2S3	CDFG Status	s:	
		State: 3233			
	SOCIATIONS	SSLANDS WITH OLD ALLUVIAL SOILS UNI	DERI AIN BY HARDRAN OR IN SANDSTO	NE DEDDES	SIONS
		ALKALINITY, CONDUCTIVITY, AND TDS.	SERVENING THAN DE AN ON MY CAMPOTO	NE DEL NEC	
Occurrence No.	149 Map Index:	28182 EO Index : 292	86	Dates Last	Seen
Occ Rank:	Poor		Ei		996-03-10
	Natural/Native occurrence			Site: 1	996-03-10
	Presumed Extant Unknown		Record Last U	ndated: 1	996-08-05
	MARTIN, D. 1996 (OBS)			paatoa	
Quad Summary:	SACRAMENTO EAST (3812154/	(512C)			
County Summary:	•	·			
Lat/Long:	38.53154° / -121.39537°		Township:	08N	
	Zone-10 N4266013 E639863		9	05E	
	38.7 ac	Mapping Precision: S		23	Qtr: XX
Elevation:	40 π	Symbol Type: P	OLYGON Meridian:	M	
Location:	ALONG THE CENTRAL CALIFO	RNIA TRACTION COMPANY (RR) RIGHT-O	F-WAY, FROM THE NORTH END OF 83R	D ST TO FL	ORIN PERKINS RD.
Location Detail:	LOCATED IN A SERIES OF PONDEPRESSIONS.	NDED DEPRESSIONS ALONG THE RAILRO	AD RIGHT-OF-WAY. LINDERIELLA FOUN	ID IN 12 OF	27 SAMPLED
			IVALLENSIS (LINDESCRIRED) AND B. LV	NCHLALSO	EUTINU IN THIS YES
Ecological:	HABITAT CONSISTS OF PONDI	ED DEPRESSIONS. BRANCHINECTA MESC	VALLENDIO (DINDEGOTABLE) AND B. LT	11011171200	I COMD IN THIS ARE
-		ED DEPRESSIONS. BRANCHINECTA MESC OM RAILROAD TRUCKS AND OTHERS DRI	•		
Threat:	CONSTANT DISTURBANCE FR		•		

Sacramento splittail			Flement	Code: AFCJB34020		
Sacramento sprittari	hie ————	NDDB Element		Other Lists		
Federal: None	ius	Global: G2	Ruiko	CDFG Statu	s: SC	
State: None		State: S2		02, 0 0		
	ssociations —					
************		S OF THE CENTRAL VALLEY	, BUT NOW CONFINED TO THE I	DELTA, SUISUN BAY & A	ASSOCIAT	TED MARSHES.
			RE FLOODED VEGETATION FOR			
Occurrence No.	1 Map Index:	24986	EO Index: 881	· · · · · · · · · · · · · · · · · · ·	Dates La	st Seen
Occ Rank	Good			E	lement:	1995-02-26
Origin:	Natural/Native occurrence				Site:	1995-02-26
	Presumed Extant			Record Last U	lo detects	1006 01 02
	: Unknown : WIXOM, L. ET AL 1995 (LIT)			Record Last O	puateu:	1990-01-02

	: COURTLAND (3812135/497D)		LARKSBURG (3812145/497A), SA (3812175/529D), KNIGHTS LANDI			
Quad Summary:	: COURTLAND (3812135/497D) (3812165/513A), GRAYS BEN NICOLAUS (3812185/529A)	D (3812166/513B), VERONA				
Quad Summary:	COURTLAND (3812135/497D) (3812165/513A), GRAYS BEN NICOLAUS (3812185/529A) SACRAMENTO, SUTTER, YO	D (3812166/513B), VERONA		NG (3812176/529C), ELI	DORADO	
Quad Summary: County Summary: Lat/Long:	: COURTLAND (3812135/497D) (3812165/513A), GRAYS BEN NICOLAUS (3812185/529A)	D (3812166/513B), VERONA			DORADO	
Quad Summary: County Summary: Lat/Long: UTM	COURTLAND (3812135/497D) (3812165/513A), GRAYS BEN NICOLAUS (3812185/529A) SACRAMENTO, SUTTER, YO 38.61362° / -121.56075°	D (3812166/513B), VERONA LO		NG (3812176/529C), ELL Township:	10N 03E	
Quad Summary: County Summary: Lat/Long: UTM	COURTLAND (3812135/497D) (3812165/513A), GRAYS BEN NICOLAUS (3812185/529A) SACRAMENTO, SUTTER, YO 38.61362° / -121.56075° Zone-10 N4274883 E625304 5,037.5 ac	D (3812166/513B), VERONA LO	(3812175/529D), KNIGHTS LANDI	NG (3812176/529C), ELL Township: Range:	10N 03E XX	BEND (3812177/530
Quad Summary: County Summary: Lat/Long: UTM Area Elevation	COURTLAND (3812135/497D) (3812165/513A), GRAYS BEN NICOLAUS (3812185/529A) SACRAMENTO, SUTTER, YO 38.61362° / -121.56075° Zone-10 N4274883 E625304 5,037.5 ac 20 ft	D (3812166/513B), VERONA LO <u>Map</u> j	(3812175/529D), KNIGHTS LANDI	NG (3812176/529C), ELI Township: Range: Section: Meridian:	10N 03E XX M	BEND (3812177/530
Quad Summary: County Summary: Lat/Long: UTM Area Elevation Location	COURTLAND (3812135/497D) (3812165/513A), GRAYS BEN NICOLAUS (3812185/529A) SACRAMENTO, SUTTER, YO 38.61362° / -121.56075° Zone-10 N4274883 E625304 5,037.5 ac 20 ft SACRAMENTO RIVER FROM	D (3812166/513B), VERONA LO Mapj MISSOURI BEND N OF KNIG R FROM RIVER MILE 33 SOL	(3812175/529D), KNIGHTS LANDI Ding Precision: SPECIFIC Symbol Type: POLYGON	NG (3812176/529C), ELL Township: Range: Section: Meridian:	10N 03E XX M	BEND (3812177/530 Qtr: XX OF THE FEATHER RI
Quad Summary: County Summary: Lat/Long: UTM: Area Elevation Location Detail	COURTLAND (3812135/497D) (3812165/513A), GRAYS BEN NICOLAUS (3812185/529A) SACRAMENTO, SUTTER, YO 38.61362° / -121.56075° Zone-10 N4274883 E625304 5,037.5 ac 20 ft SACRAMENTO RIVER FROM IN THE SACRAMENTO RIVER 10 MILES OF THE FEATHER	D (3812166/513B), VERONA LO Mapj MISSOURI BEND N OF KNIG R FROM RIVER MILE 33 SOURIVER. NDY BOTTOM. RIVERBANKS	(3812175/529D), KNIGHTS LANDI Ding Precision: SPECIFIC Symbol Type: POLYGON GHTS LANDING TO S OF COURTI	Township: Range: Section: Meridian: AND. ALSO, LOWER 10: IILE 97 NORTH OF KNIG	10N 03E XX M	Qtr: XX OF THE FEATHER RIDING, AND THE LO

purple martin		Element	Code: ABPAU01010	
State	us N	DDB Element Ranks	Other Lists	
Federal: None		Global: G5	CDFG Status: SC	
State: None		State: S3		
General: (NESTIN		N CONIFEROUS FOREST OF DOUGLAS FIRE	ONDEDOSA DINE & MONTED	EV DINE
,		ALSO IN HUMAN-MADE STRUCTURES. NEST O	•	
Occurrence No.	17 Map Index: 54694	EO Index: 54694	Dates	Last Seen ———
Occ Rank:			Element	
	Natural/Native occurrence		Site	: 2003-XX-XX
	Presumed Extant Unknown		Record Last Updated	: 2004-03-12
***************************************	LEEMAN, T, D. AIROLA, D. KOPP 2003 (LIT)		,	
Quad Summary:	SACRAMENTO EAST (3812154/512C)			
County Summary:	SACRAMENTO			
Lat/Long:	38.62273° / -121.42273°		Township: 09N	
	Zone-10 N4276092 E637304		Range: 05E	
Radius: Elevation:	80 meters	Mapping Precision: SPECIFIC Symbol Type: POINT	Section: 22 Meridian: M	Qtr: NW
	UNDERSIDE OF SOME HOLLOW BOX GIRD CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM	REEWAY AND STREET OVERPASSES. WEEP I ER ELEVATED FREEWAYS, OVERPASSES & B I MID-MAY TO EARLY AUGUST 2003. 1 PAIR OI DBSERVED, WHICH IS CONSISTENT WITH TYF	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE	SSURE & DRAIN EDING LOCATION IN 2
	UNDERSIDE OF SOME HOLLOW BOX GIRD CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES O	ER ELEVATED FREEWAYS, OVERPASSES & B I MID-MAY TO EARLY AUGUST 2003. 1 PAIR OI	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE	SSURE & DRAIN EDING LOCATION IN 2
General:	UNDERSIDE OF SOME HOLLOW BOX GIRD CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES O UNKNOWN	ER ELEVATED FREEWAYS, OVERPASSES & B I MID-MAY TO EARLY AUGUST 2003. 1 PAIR OI	RIDGES TO RELIEVE AIR PRE BSERVED NESTING, NEW BRE PICAL PIONEERING BEHAVIOR — Dates	SSURE & DRAIN EDING LOCATION IN 2 OF SECOND YEAR BIF
General: Owner/Manager: Occurrence No. Occ Rank:	UNDERSIDE OF SOME HOLLOW BOX GIRDS CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES OF UNKNOWN 18 Map Index: 54696 Unknown	ER ELEVATED FREEWAYS, OVERPASSES & B I MID-MAY TO EARLY AUGUST 2003. 1 PAIR OI DBSERVED, WHICH IS CONSISTENT WITH TYF	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE PICAL PIONEERING BEHAVIOR ————————————————————————————————————	SSURE & DRAIN EEDING LOCATION IN 2 OF SECOND YEAR BIF Last Seen : 2003-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin:	UNDERSIDE OF SOME HOLLOW BOX GIRDS CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES OF UNKNOWN 18 Map Index: 54696 Unknown Natural/Native occurrence	ER ELEVATED FREEWAYS, OVERPASSES & B I MID-MAY TO EARLY AUGUST 2003. 1 PAIR OI DBSERVED, WHICH IS CONSISTENT WITH TYF	RIDGES TO RELIEVE AIR PRE BSERVED NESTING, NEW BRE PICAL PIONEERING BEHAVIOR — Dates	SSURE & DRAIN EEDING LOCATION IN 2 OF SECOND YEAR BIF Last Seen : 2003-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence:	UNDERSIDE OF SOME HOLLOW BOX GIRDS CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES OF UNKNOWN 18 Map Index: 54696 Unknown	ER ELEVATED FREEWAYS, OVERPASSES & B I MID-MAY TO EARLY AUGUST 2003. 1 PAIR OI DBSERVED, WHICH IS CONSISTENT WITH TYF	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE PICAL PIONEERING BEHAVIOR ————————————————————————————————————	EDING LOCATION IN 2 OF SECOND YEAR BIF Last Seen : 2003-XX-XX : 2003-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend:	UNDERSIDE OF SOME HOLLOW BOX GIRDS CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES OF UNKNOWN 18 Map Index: 54696 Unknown Natural/Native occurrence Presumed Extant	ER ELEVATED FREEWAYS, OVERPASSES & B I MID-MAY TO EARLY AUGUST 2003. 1 PAIR OI DBSERVED, WHICH IS CONSISTENT WITH TYF	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE PICAL PIONEERING BEHAVIOR	EDING LOCATION IN 2 OF SECOND YEAR BIF Last Seen : 2003-XX-XX : 2003-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	UNDERSIDE OF SOME HOLLOW BOX GIRDS CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES OF UNKNOWN 18 Map Index: 54696 Unknown Natural/Native occurrence Presumed Extant Unknown	ER ELEVATED FREEWAYS, OVERPASSES & B I MID-MAY TO EARLY AUGUST 2003. 1 PAIR OI DBSERVED, WHICH IS CONSISTENT WITH TYF	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE PICAL PIONEERING BEHAVIOR	EDING LOCATION IN 2 OF SECOND YEAR BIF Last Seen : 2003-XX-XX : 2003-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	UNDERSIDE OF SOME HOLLOW BOX GIRDS CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES OF UNKNOWN 18 Map Index: 54696 Unknown Natural/Native occurrence Presumed Extant Unknown LEEMAN, T, D. AIROLA, D. KOPP 2003 (LIT) SACRAMENTO EAST (3812154/512C)	ER ELEVATED FREEWAYS, OVERPASSES & B I MID-MAY TO EARLY AUGUST 2003. 1 PAIR OI DBSERVED, WHICH IS CONSISTENT WITH TYF	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE PICAL PIONEERING BEHAVIOR	EDING LOCATION IN 2 OF SECOND YEAR BIF Last Seen : 2003-XX-XX : 2003-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary:	UNDERSIDE OF SOME HOLLOW BOX GIRDS CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES OF UNKNOWN 18	ER ELEVATED FREEWAYS, OVERPASSES & B I MID-MAY TO EARLY AUGUST 2003. 1 PAIR OI DBSERVED, WHICH IS CONSISTENT WITH TYF	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE PICAL PIONEERING BEHAVIOR —— Dates Element Site Record Last Updated	EDING LOCATION IN 2 OF SECOND YEAR BIF Last Seen : 2003-XX-XX : 2003-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	UNDERSIDE OF SOME HOLLOW BOX GIRDS CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES OF UNKNOWN 18	ER ELEVATED FREEWAYS, OVERPASSES & B I MID-MAY TO EARLY AUGUST 2003. 1 PAIR OI DBSERVED, WHICH IS CONSISTENT WITH TYF	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE PICAL PIONEERING BEHAVIOR Dates Element Site Record Last Updated Township: 09N Range: 05E	EDING LOCATION IN 2 OF SECOND YEAR BIF Last Seen : 2003-XX-XX : 2003-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius:	UNDERSIDE OF SOME HOLLOW BOX GIRDS CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES OF UNKNOWN 18	ER ELEVATED FREEWAYS, OVERPASSES & B I MID-MAY TO EARLY AUGUST 2003. 1 PAIR OI DBSERVED, WHICH IS CONSISTENT WITH TYP EO Index: 54696 Mapping Precision: SPECIFIC	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE PICAL PIONEERING BEHAVIOR	EDING LOCATION IN 2 OF SECOND YEAR BIF Last Seen : 2003-XX-XX : 2003-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	UNDERSIDE OF SOME HOLLOW BOX GIRDS CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES OF UNKNOWN 18	ER ELEVATED FREEWAYS, OVERPASSES & B I MID-MAY TO EARLY AUGUST 2003. 1 PAIR OI DBSERVED, WHICH IS CONSISTENT WITH TYP EO Index: 54696	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE PICAL PIONEERING BEHAVIOR Dates Element Site Record Last Updated Township: 09N Range: 05E	EDING LOCATION IN 2 OF SECOND YEAR BIF Last Seen : 2003-XX-XX : 2003-XX-XX : 2004-03-12
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	UNDERSIDE OF SOME HOLLOW BOX GIRDS CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES OF UNKNOWN 18	ER ELEVATED FREEWAYS, OVERPASSES & B MID-MAY TO EARLY AUGUST 2003. 1 PAIR OF DBSERVED, WHICH IS CONSISTENT WITH TYP EO Index: 54696 Mapping Precision: SPECIFIC Symbol Type: POINT	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE PICAL PIONEERING BEHAVIOR	EDING LOCATION IN 2 OF SECOND YEAR BIF Last Seen : 2003-XX-XX : 2003-XX-XX : 2004-03-12
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location:	UNDERSIDE OF SOME HOLLOW BOX GIRDS CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES OF UNKNOWN 18 Map Index: 54696 Unknown Natural/Native occurrence Presumed Extant Unknown LEEMAN, T, D. AIROLA, D. KOPP 2003 (LIT) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.61095° / -121.43559° Zone-10 N4274765 E636207 80 meters 45 ft EL CAMINO OVERPASS OF UNION PACIFIC	ER ELEVATED FREEWAYS, OVERPASSES & B MID-MAY TO EARLY AUGUST 2003. 1 PAIR OF DBSERVED, WHICH IS CONSISTENT WITH TYP EO Index: 54696 Mapping Precision: SPECIFIC Symbol Type: POINT	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE PICAL PIONEERING BEHAVIOR Dates Element Site Record Last Updated Township: 09N Range: 05E Section: 28 Meridian: M	EEDING LOCATION IN 2 OF SECOND YEAR BIR Last Seen : 2003-XX-XX : 2003-XX-XX : 2004-03-12 Qtr: NE
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location Detail:	UNDERSIDE OF SOME HOLLOW BOX GIRDICONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES OUNKNOWN 18	ER ELEVATED FREEWAYS, OVERPASSES & B MID-MAY TO EARLY AUGUST 2003. 1 PAIR OF DBSERVED, WHICH IS CONSISTENT WITH TYPE EO Index: 54696 Mapping Precision: SPECIFIC Symbol Type: POINT EAND LIGHT RAIL TRACKS, SACRAMENTO	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE PICAL PIONEERING BEHAVIOR	EEDING LOCATION IN 2 OF SECOND YEAR BIF Last Seen : 2003-XX-XX : 2003-XX-XX : 2004-03-12 Qtr: NE ENCE OF OVER 90% OF
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location: Location Detail:	UNDERSIDE OF SOME HOLLOW BOX GIRDICONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM HIGH NUMBER OF SECOND YEAR MALES OUNKNOWN 18	ER ELEVATED FREEWAYS, OVERPASSES & B MID-MAY TO EARLY AUGUST 2003. 1 PAIR OF DBSERVED, WHICH IS CONSISTENT WITH TYP EO Index: 54696 Mapping Precision: SPECIFIC Symbol Type: POINT AND LIGHT RAIL TRACKS, SACRAMENTO SUMED TO HAVE BEEN OCCUPIED IN PRIOR SEEWAY AND STREET OVERPASSES. WEEP	RIDGES TO RELIEVE AIR PRE BSERVED NESTING. NEW BRE PICAL PIONEERING BEHAVIOR	EEDING LOCATION IN 2 OF SECOND YEAR BIF Last Seen : 2003-XX-XX : 2003-XX-XX : 2004-03-12 Qtr: NE ENCE OF OVER 90% OF

purple martin		Element	Code: ABPAU01010	
Statu	us NDDE	B Element Ranks	Other Lists	
Federal: None	Glo	bal: G5	CDFG Status: S	С
State: None	Si	ate: S3		
Habitat As	sociations —			
General: (NESTIN	(G) INHABITS WOODLANDS, LOW ELEVATION C	ONIFEROUS FOREST OF DOUGLAS FIR, PO	ONDEROSA PINE, & MONTE	REY PINE.
Micro: NESTS	IN OLD WOODPECKER CAVITIES MOSTLY, ALSO) IN HUMAN-MADE STRUCTURES. NEST OF	TEN LOCATED IN TALL, ISC	DLATED TREE/SNAG.
Occurrence No.	19 Map Index: 54697	EO Index: 54697	Date:	Last Seen
Occ Rank:	•		Elemer	nt: 2003-XX-XX
	Natural/Native occurrence		Sit	e: 2003-XX-XX
Presence:	Presumed Extant			
	Unknown		Record Last Update	d: 2004-03-12
Main Source:	LEEMAN, T, D. AIROLA, D. KOPP 2003 (LIT)	·		
Quad Summary:	SACRAMENTO EAST (3812154/512C)			
County Summary:	SACRAMENTO			
	38,55083° / -121,42235°		Township: 08N	
_	Zone-10 N4268114 E637474		Range: 05E	
	10.5 ac	Mapping Precision: SPECIFIC	Section: 15	Qtr: NW
Elevation:	-	Symbol Type: POLYGON	Meridian: M	****
	HWY 50 AT REDDING ROAD AND UNION PACIF	IC AND LIGHT RAIL TRACKS. BETWEEN 65	TH ST AND HOWE AVE	
Location Detail:	NEW SITE IN 2003.			
Ecological:	BIRDS ARE NESTING IN WEEP HOLES IN FREE	WAY AND STREET OVERPASSES. WEEP H	IOLES ARE VERTICAL HOLE	S CONSTRUCTED INTO TH
Ecological:				
Ecological:	BIRDS ARE NESTING IN WEEP HOLES IN FREE UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION.			
-	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION.	ELEVATED FREEWAYS, OVERPASSES & BI	RIDGES TO RELIEVE AIR PF	ESSURE & DRAIN
-	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI	ELEVATED FREEWAYS, OVERPASSES & BI D-MAY TO EARLY AUGUST 2003. 3 PAIRS C	RIDGES TO RELIEVE AIR PR PBSERVED NESTING. HIGH	ESSURE & DRAIN
General:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W	ELEVATED FREEWAYS, OVERPASSES & BI D-MAY TO EARLY AUGUST 2003. 3 PAIRS C	RIDGES TO RELIEVE AIR PR PBSERVED NESTING. HIGH	ESSURE & DRAIN
-	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W	ELEVATED FREEWAYS, OVERPASSES & BI D-MAY TO EARLY AUGUST 2003. 3 PAIRS C	RIDGES TO RELIEVE AIR PR PBSERVED NESTING. HIGH	ESSURE & DRAIN
General: Owner/Manager:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS	ELEVATED FREEWAYS, OVERPASSES & BR D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S	RIDGES TO RELIEVE AIR PR DBSERVED NESTING. HIGH SECOND YEAR BIRDS.	ESSURE & DRAIN NUMBER OF SECOND YEAR
General: Owner/Manager: Occurrence No.	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20 Map Index: 54698	ELEVATED FREEWAYS, OVERPASSES & BI D-MAY TO EARLY AUGUST 2003. 3 PAIRS C	RIDGES TO RELIEVE AIR PROBSERVED NESTING. HIGH SECOND YEAR BIRDS. —— Date	ESSURE & DRAIN NUMBER OF SECOND YEAR S Last Seen
General: Owner/Manager: Occurrence No. Occ Rank:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20 Map Index: 54698 Unknown	ELEVATED FREEWAYS, OVERPASSES & BR D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S	RIDGES TO RELIEVE AIR PROBSERVED NESTING. HIGH SECOND YEAR BIRDS. — Date Eleme	NUMBER OF SECOND YEAR S Last Seen ——————————————————————————————————
General: Owner/Manager: Occurrence No. Occ Rank: Origin:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20	ELEVATED FREEWAYS, OVERPASSES & BR D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S	RIDGES TO RELIEVE AIR PROBSERVED NESTING. HIGH SECOND YEAR BIRDS. — Date Eleme	ESSURE & DRAIN NUMBER OF SECOND YEAR S Last Seen
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20	ELEVATED FREEWAYS, OVERPASSES & BR D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S	RIDGES TO RELIEVE AIR PROBESERVED NESTING. HIGH SECOND YEAR BIRDS. —— Date Eleme	S Last Seen nt: 2003-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20 Map Index: 54698 Unknown Natural/Native occurrence Presumed Extant Unknown	ELEVATED FREEWAYS, OVERPASSES & BR D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S	RIDGES TO RELIEVE AIR PROBSERVED NESTING. HIGH SECOND YEAR BIRDS. — Date Eleme	S Last Seen nt: 2003-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20	ELEVATED FREEWAYS, OVERPASSES & BR D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S	RIDGES TO RELIEVE AIR PROBESERVED NESTING. HIGH SECOND YEAR BIRDS. —— Date Eleme	S Last Seen nt: 2003-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20	ELEVATED FREEWAYS, OVERPASSES & BR D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S	RIDGES TO RELIEVE AIR PROBESERVED NESTING. HIGH SECOND YEAR BIRDS. —— Date Eleme	S Last Seen nt: 2003-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20	ELEVATED FREEWAYS, OVERPASSES & BR D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S	RIDGES TO RELIEVE AIR PROBESERVED NESTING. HIGH SECOND YEAR BIRDS. —— Date Eleme	S Last Seen nt: 2003-XX-XX
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20	ELEVATED FREEWAYS, OVERPASSES & BR D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S	PRIDGES TO RELIEVE AIR PRIDBESERVED NESTING. HIGH SECOND YEAR BIRDS. Date Eleme Si Record Last Updat	S Last Seen nt: 2003-XX-XX te: 2003-XX-XX ed: 2004-03-12
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20 Map Index: 54698 Unknown Natural/Native occurrence Presumed Extant Unknown LEEMAN, T, D. AIROLA, D. KOPP 2003 (LIT) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.56037° / -121.46510° Zone-10 N4269109 E633731	ELEVATED FREEWAYS, OVERPASSES & BR D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S EO Index: 54698	RIDGES TO RELIEVE AIR PROBSERVED NESTING. HIGH SECOND YEAR BIRDS. — Date Eleme Si Record Last Update Township: 08N Range: 05E	S Last Seen nt: 2003-XX-XX te: 2003-XX-XX ad: 2004-03-12
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Area:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20	ELEVATED FREEWAYS, OVERPASSES & BI D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S EO Index: 54698 Mapping Precision: SPECIFIC	RIDGES TO RELIEVE AIR PR DBSERVED NESTING. HIGH SECOND YEAR BIRDS. Date Eleme Si Record Last Updat Township: 08N Range: 05E Section: 07	S Last Seen ——————————————————————————————————
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20	ELEVATED FREEWAYS, OVERPASSES & BR D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S EO Index: 54698	RIDGES TO RELIEVE AIR PROBSERVED NESTING. HIGH SECOND YEAR BIRDS. — Date Eleme Si Record Last Update Township: 08N Range: 05E	S Last Seen nt: 2003-XX-XX te: 2003-XX-XX ad: 2004-03-12
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General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Area: Elevation: Location:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20	ELEVATED FREEWAYS, OVERPASSES & BR D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S EO Index: 54698 Mapping Precision: SPECIFIC Symbol Type: POLYGON ILVD, SACRAMENTO EWAY AND STREET OVERPASSES. WEEP H	PRIDGES TO RELIEVE AIR PRIDESERVED NESTING. HIGH SECOND YEAR BIRDS. Date Eleme Si Record Last Update Township: 08N Range: 05E Section: 07 Meridian: M	S Last Seen ——————————————————————————————————
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Area: Elevation: Location:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20 Map Index: 54698 Unknown Natural/Native occurrence Presumed Extant Unknown LEEMAN, T, D. AIROLA, D. KOPP 2003 (LIT) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.56037° / -121.46510° Zone-10 N4269109 E633731 17.1 ac 25 ft HWY 50 FROM 34TH STREET TO STOCKTON EBIRDS ARE NESTING IN WEEP HOLES IN FREE	ELEVATED FREEWAYS, OVERPASSES & BR D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S EO Index: 54698 Mapping Precision: SPECIFIC Symbol Type: POLYGON ILVD, SACRAMENTO EWAY AND STREET OVERPASSES. WEEP H	PRIDGES TO RELIEVE AIR PRIDESERVED NESTING. HIGH SECOND YEAR BIRDS. Date Eleme Si Record Last Update Township: 08N Range: 05E Section: 07 Meridian: M	S Last Seen ——————————————————————————————————
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Area: Elevation: Location: Ecological:	UNDERSIDE OF SOME HOLLOW BOX GIRDER CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FROM MI MALES OBSERVED, WHICH IS CONSISTENT W CALTRANS 20	ELEVATED FREEWAYS, OVERPASSES & BI D-MAY TO EARLY AUGUST 2003. 3 PAIRS O ITH TYPICAL PIONEERING BEHAVIOR OF S EO Index: 54698 Mapping Precision: SPECIFIC Symbol Type: POLYGON SLVD, SACRAMENTO EWAY AND STREET OVERPASSES. WEEP I ELEVATED FREEWAYS, OVERPASSES & BI	RIDGES TO RELIEVE AIR PER PER PER PER PER PER PER PER PER PE	S Last Seen nt: 2003-XX-XX te: 2003-XX-XX dt: 2004-03-12 Qtr: E

ourple martin	s 	NDDB Element Ranks	Element	Code: ABPAU01010 Other Lists		
Federal: None State: None	•	Global: G5 State: S3		CDFG Statu	s: SC	
General: (NESTIN	sociations ————————————————————————————————————	EVATION CONIECDONS FORES	T OF DOUGLAS FIR DO	NIDEDOSA DINE 2 M	ONTEDE	/ DINE
	N OLD WOODPECKER CAVITIES MO		•	•		
Occurrence No.	•	EO Index:	54699		Dates La	
Occ Rank:	Unknown Natural/Native occurrence			E	lement: Site:	2003-XX-XX 2003-XX-XX
_	Presumed Extant				oite.	2505-70(-70)
	Unknown			Record Last U	pdated:	2004-03-12
Main Source:	LEEMAN, T, D. AIROLA, D. KOPP 200	3 (LIT)				
•	SACRAMENTO EAST (3812154/512C)				
County Summary:	SACRAMENTO					
	38.56385° / -121.47122°			Township:		
	Zone-10 N4269487 E633191 80 meters	Manning Procisi	on, SDECIEIC	Range:	05E	Otro N
Elevation:		Mapping Precisi Symbol Ty		Section: Meridian:	07 M	Qtr: N
Location	CAPITAL CITY FWY (BUSINESS I-80)					
	BIRDS ARE NESTING IN WEEP HOLE			OLES ADE VEDTICAL	UOLES C	ONETRI ICTED IN
Ecological:	UNDERSIDE OF SOME HOLLOW BO. CONDENSATION.					
General:	SITES MONITORED EVERY 4-8 DAYS	S FROM MID-MAY TO EARLY AL	GUST 2003. 14 PAIRS	OBSERVED NESTING.		
Owner/Manager:	CALTRANS					
Occurrence No.	22 Map Index: 54700	EO Index:	54700		Dates La	st Seen
Occ Rank:	•	LO liluex.	34700		lement:	2003-XX-XX
	Natural/Native occurrence				Site:	2003-XX-XX
	Presumed Extant			Record Last l	Indated:	2004-03-12
	Unknown LEEMAN, T, D. AIROLA, D. KOPP 200	03 (LIT)		Necolu Last C	puateu.	2004-03-12
	SACRAMENTO EAST (3812154/512C	 ' 				•
County Summary:		,				
	38.55769° / -121.47405°			Township:	08N	
_	Zone-10 N4268799 E632956			Range:	05E	
	1/10 mile		ion: NON-SPECIFIC	Section:	07	Qtr: S
Elevation:	2/π	Symbol Ty	pe: POINT	Meridian:	м	
Location:	EASTBOUND HWY 50 OFFRAMP TO	SOUTHBOUND HWY 99 AND N	ORTHBOUND HWY 99	OFFRAMP TO EASTBO	WH GNUC	Y 50, SACRAMEN
Ecological:	BIRDS ARE NESTING IN WEEP HOLI UNDERSIDE OF SOME HOLLOW BO CONDENSATION.					
General:	SITES MONITORED EVERY 4-8 DAY	S FROM MID-MAY TO EARLY AL	JGUST 2003. 7 PAIRS C	BSERVED NESTING.		
Owner/Manager:	CALTRANS					
Occurrence No.	23 Map Index: 5470	1 EO Index	54701		Dates La	ast Seen
Occ Rank:	Unknown			1	Element:	
~	Natural/Native occurrence				Site:	2003-XX-XX
	Presumed Extant Unknown			Record Last I	Jpdated:	2004-03-12
	LEEMAN, T, D. AIROLA, D. KOPP 200	03 (LIT)				
Quad Summarv:	SACRAMENTO EAST (3812154/512C	 S)				
County Summary:	·	•				
	38,53948° / -121,48432°	, , , , , , , , , , , , , , , , , , ,	·	Township:	08N	
_	Zone-10 N4266763 E632094			rownsnip: Range:	08N 04E	
Radius:	80 meters	Mapping Precis		Section:	13	Qtr: SE
Elevation:	27 ft	Symbol Ty	/pe: POINT	Meridian:	М	
Location:	SUTTERVILLE ROAD OVER THE UN	ION PACIFIC RAIL YARD, WEST	OF HWY 99, SACRAM	ENTO		
Ecological:	BIRDS ARE NESTING IN WEEP HOL UNDERSIDE OF SOME HOLLOW BO					
		ONDER LEEVATED I NCLWA	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
0	CONDENSATION. SITES MONITORED EVERY 4-8 DAY					

purple martin		Element	t Code: ABPAU01010	
State	us —————	NDDB Element Ranks	Other Lists	
Federal: None State: None		Global: G5 State: S3	CDFG Status: SC	
	occaintions			
General: (NEST)		ATION CONIFEROUS FOREST OF DOUGLAS FIR, P	PONDEROSA PINE & MONTEREY	PINE
		LY, ALSO IN HUMAN-MADE STRUCTURES. NEST O		
	OLD WOOD! LOKEN ON WINDOW	TI, ALGO IN TIGHT IN INC. GITTOG TOTALG. ALGO G	TEN EGG/NED IN TALL, IOOBA	TED TREBUTACE
Occurrence No.	24 Map Index: 54702	EO Index: 54702	Dates La	st Seen
Occ Rank:	Unknown		Element:	2003-XX-XX
	Natural/Native occurrence		Site:	2003-XX-XX
	Presumed Extant		Record Last Updated:	2004-03-12
	Unknown LEEMAN, T, D. AIROLA, D. KOPP 2003 (I	IT)	Record Last Opuated:	2004-03-12
		-11)		
-	SACRAMENTO EAST (3812154/512C)			
County Summary:				
_	38.56215° / -121.48743°		Township: 08N	
	Zone-10 N4269274 E631782	Managina Baratata at CDECISIO	Range: 04E	O4 N.E
Area: Elevation:	14.5 ac	Mapping Precision: SPECIFIC Symbol Type: POLYGON	Section: 12 Meridian: M	Qtr: NE
Elevation.	23 10	Symbol Type: FOLTGON	Wendan. W	
Location:	HWY 50 BETWEEN 18TH AND 20TH ST	REETS, SACRAMENTO		
	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX G	IN FREEWAY AND STREET OVERPASSES. WEEP I SIRDER ELEVATED FREEWAYS, OVERPASSES & B		
Ecological:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX G CONDENSATION.	IN FREEWAY AND STREET OVERPASSES. WEEP I	BRIDGES TO RELIEVE AIR PRESS	
Ecological:	BIRDS ARE NESTING IN WEEP HOLES OF UNDERSIDE OF SOME HOLLOW BOX OF CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FOR	IN FREEWAY AND STREET OVERPASSES. WEEP I IRDER ELEVATED FREEWAYS, OVERPASSES & B	BRIDGES TO RELIEVE AIR PRESS	
Ecological: General:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX G CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FI CALTRANS	IN FREEWAY AND STREET OVERPASSES. WEEP I IRDER ELEVATED FREEWAYS, OVERPASSES & B	BRIDGES TO RELIEVE AIR PRESS	SURE & DRAIN
Ecological: General: Owner/Manager:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX G CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FI CALTRANS Map Index: 54703	IN FREEWAY AND STREET OVERPASSES. WEEP I SIRDER ELEVATED FREEWAYS, OVERPASSES & B ROM MID-MAY TO EARLY AUGUST 2003. 21 PAIRS	BRIDGES TO RELIEVE AIR PRESS GOBSERVED NESTING.	SURE & DRAIN
Ecological: General: Owner/Manager: Occurrence No. Occ Rank:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX G CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FI CALTRANS Map Index: 54703	IN FREEWAY AND STREET OVERPASSES. WEEP I SIRDER ELEVATED FREEWAYS, OVERPASSES & B ROM MID-MAY TO EARLY AUGUST 2003. 21 PAIRS	BRIDGES TO RELIEVE AIR PRESS GOBSERVED NESTING	st Seen —
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX GONDENSATION. SITES MONITORED EVERY 4-8 DAYS FIT CALTRANS 25 Map Index: 54703 Unknown Natural/Native occurrence Presumed Extant	IN FREEWAY AND STREET OVERPASSES. WEEP I SIRDER ELEVATED FREEWAYS, OVERPASSES & B ROM MID-MAY TO EARLY AUGUST 2003. 21 PAIRS	BRIDGES TO RELIEVE AIR PRESS G OBSERVED NESTING. ———————————————————————————————————	st Seen
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX G CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FI CALTRANS 25 Map Index: 54703 Unknown Natural/Native occurrence Presumed Extant Unknown	IN FREEWAY AND STREET OVERPASSES. WEEP I BIRDER ELEVATED FREEWAYS, OVERPASSES & B ROM MID-MAY TO EARLY AUGUST 2003. 21 PAIRS EO Index: 54703	BRIDGES TO RELIEVE AIR PRESS OBSERVED NESTING. ———————————————————————————————————	st Seen
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX GONDENSATION. SITES MONITORED EVERY 4-8 DAYS FIT CALTRANS 25 Map Index: 54703 Unknown Natural/Native occurrence Presumed Extant Unknown LEEMAN, T, D. AIROLA, D. KOPP 2003 (I	IN FREEWAY AND STREET OVERPASSES. WEEP I BIRDER ELEVATED FREEWAYS, OVERPASSES & B ROM MID-MAY TO EARLY AUGUST 2003. 21 PAIRS EO Index: 54703	BRIDGES TO RELIEVE AIR PRESS G OBSERVED NESTING. ———————————————————————————————————	st Seen
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX GONDENSATION. SITES MONITORED EVERY 4-8 DAYS FIT CALTRANS 25 Map Index: 54703 Unknown Natural/Native occurrence Presumed Extant Unknown LEEMAN, T, D. AIROLA, D. KOPP 2003 (ISSACRAMENTO WEST (3812155/513D)	IN FREEWAY AND STREET OVERPASSES. WEEP I BIRDER ELEVATED FREEWAYS, OVERPASSES & B ROM MID-MAY TO EARLY AUGUST 2003. 21 PAIRS EO Index: 54703	BRIDGES TO RELIEVE AIR PRESS G OBSERVED NESTING. ———————————————————————————————————	st Seen
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General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX GONDENSATION. SITES MONITORED EVERY 4-8 DAYS FIT CALTRANS 25 Map Index: 54703 Unknown Natural/Native occurrence Presumed Extant Unknown LEEMAN, T, D. AIROLA, D. KOPP 2003 (ISSACRAMENTO WEST (3812155/513D)	IN FREEWAY AND STREET OVERPASSES. WEEP I BIRDER ELEVATED FREEWAYS, OVERPASSES & B ROM MID-MAY TO EARLY AUGUST 2003. 21 PAIRS EO Index: 54703	BRIDGES TO RELIEVE AIR PRESS G OBSERVED NESTING. ———————————————————————————————————	st Seen
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX G CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FI CALTRANS 25 Map Index: 54703 Unknown Natural/Native occurrence Presumed Extant Unknown LEEMAN, T, D. AIROLA, D. KOPP 2003 (I SACRAMENTO WEST (3812155/513D) SACRAMENTO 38.58491° / -121.50344° Zone-10 N4271777 E630346	IN FREEWAY AND STREET OVERPASSES. WEEP I BIRDER ELEVATED FREEWAYS, OVERPASSES & B ROM MID-MAY TO EARLY AUGUST 2003. 21 PAIRS EO Index: 54703	BRIDGES TO RELIEVE AIR PRESS S OBSERVED NESTING. — Dates La Element: Site: Record Last Updated: Township: 09N Range: 04E	st Seen
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Area:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX G CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FI CALTRANS 25 Map Index: 54703 Unknown Natural/Native occurrence Presumed Extant Unknown LEEMAN, T, D. AIROLA, D. KOPP 2003 (I SACRAMENTO WEST (3812155/513D) SACRAMENTO 38.58491° / -121.50344° Zone-10 N4271777 E630346 14.3 ac	IN FREEWAY AND STREET OVERPASSES. WEEP I BIRDER ELEVATED FREEWAYS, OVERPASSES & B ROM MID-MAY TO EARLY AUGUST 2003. 21 PAIRS EO Index: 54703 LIT) Mapping Precision: SPECIFIC	BRIDGES TO RELIEVE AIR PRESS S OBSERVED NESTING. — Dates La Element: Site: Record Last Updated: Township: 09N Range: 04E Section: 35	st Seen
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX G CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FI CALTRANS 25 Map Index: 54703 Unknown Natural/Native occurrence Presumed Extant Unknown LEEMAN, T, D. AIROLA, D. KOPP 2003 (I SACRAMENTO WEST (3812155/513D) SACRAMENTO 38.58491° / -121.50344° Zone-10 N4271777 E630346 14.3 ac	IN FREEWAY AND STREET OVERPASSES. WEEP I BIRDER ELEVATED FREEWAYS, OVERPASSES & B ROM MID-MAY TO EARLY AUGUST 2003. 21 PAIRS EO Index: 54703	BRIDGES TO RELIEVE AIR PRESS S OBSERVED NESTING. — Dates La Element: Site: Record Last Updated: Township: 09N Range: 04E	st Seen
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Area: Elevation:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX G CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FI CALTRANS 25	IN FREEWAY AND STREET OVERPASSES. WEEP I BIRDER ELEVATED FREEWAYS, OVERPASSES & B ROM MID-MAY TO EARLY AUGUST 2003. 21 PAIRS EO Index: 54703 LIT) Mapping Precision: SPECIFIC	GOBSERVED NESTING.	st Seen
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Area: Elevation:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX G CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FI CALTRANS 25 Map Index: 54703 Unknown Natural/Native occurrence Presumed Extant Unknown LEEMAN, T, D. AIROLA, D. KOPP 2003 (I SACRAMENTO WEST (3812155/513D) SACRAMENTO 38.58491° / -121.50344° Zone-10 N4271777 E630346 14.3 ac 24 ft I-5 AT I STREET AND I STREET BRIDGE BIRDS ARE NESTING IN WEEP HOLES	IN FREEWAY AND STREET OVERPASSES. WEEP I SIRDER ELEVATED FREEWAYS, OVERPASSES & B ROM MID-MAY TO EARLY AUGUST 2003. 21 PAIRS EO Index: 54703 LIT) Mapping Precision: SPECIFIC Symbol Type: POLYGON	BRIDGES TO RELIEVE AIR PRESS SOBSERVED NESTING.	st Seen 2003-XX-XX 2003-XX-XX 2004-03-12 Qtr: SE RAMENTO ONSTRUCTED INT
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Area: Elevation: Location Detail:	BIRDS ARE NESTING IN WEEP HOLES I UNDERSIDE OF SOME HOLLOW BOX G CONDENSATION. SITES MONITORED EVERY 4-8 DAYS FI CALTRANS 25 Map Index: 54703 Unknown Natural/Native occurrence Presumed Extant Unknown LEEMAN, T, D. AIROLA, D. KOPP 2003 (I SACRAMENTO WEST (3812155/513D) SACRAMENTO 38.58491° / -121.50344° Zone-10 N4271777 E630346 14.3 ac 24 ft 1-5 AT I STREET AND I STREET BRIDGE BIRDS ARE NESTING IN WEEP HOLES UNDERSIDE OF SOME HOLLOW BOX G CONDENSATION.	IN FREEWAY AND STREET OVERPASSES. WEEP I BIRDER ELEVATED FREEWAYS, OVERPASSES & B ROM MID-MAY TO EARLY AUGUST 2003. 21 PAIRS EO Index: 54703 LIT) Mapping Precision: SPECIFIC Symbol Type: POLYGON E RAMP ABOVE THE CALIFORNIA STATE RAILROA IN FREEWAY AND STREET OVERPASSES. WEEP	Township: 09N Range: 04E Section: 35 Meridian: M AD MUSEUM PARKING LOT, SACH HOLES ARE VERTICAL HOLES C BRIDGES TO RELIEVE AIR PRESS	st Seen 2003-XX-XX 2003-XX-XX 2004-03-12 Qtr: SE RAMENTO ONSTRUCTED INT

California Department of Fish and Game Natural Diversity Database Full Condensed Report for Selected Elements - Multiple Records per Page The Towers - Sacramento East and Sacramento West Quads

Federal: None State: Threater		NDDB Elemen Global: G5 State: S25	t Ranks	t Code: ABPAU08010 Other Lists CDFG Statu	is:	
General: (NESTI)	•		AND OTHER LOWLAND HABITAT: NDY SOILS NEAR STREAMS, RIVE			STING HOLE.
		11372	EO Index: 12978	E	Dates La Element: Site:	st Seen 1986-XX-XX 1986-XX-XX
Trend:	Unknown HUMPHREY, J. 1986 (PERS)			Record Last U	Jpdated:	1998-10-28
Quad Summary: County Summary:	SACRAMENTO EAST (3812154 SACRAMENTO	l/512C)				
UTM:	38.58441° / -121.44342° Zone-10 N4271808 E635575 29.8 ac 30 ft	Мар	ping Precision: NON-SPECIFIC Symbol Type: POLYGON	Township: Range: Section: Meridian:	09N 05E 33 M	Qtr: SE
			AL EXPO, NEAR BUSINESS 80 BR			

Sanford's arrowhead			ent Code: PMALI040Q0	
State	us ———————	NDDB Element Ranks	Other Lists	
Federal: None		Global: G3	CNPS List: 1	
State: None		State: S3.2	R-E-D Code: 2	-2-3
Habitat As				
General: MARSH				
MICTO: INSIAN	IDING OR SLOW-MOVING FRESHWATER	R PONDS, MARSHES, AND DITCHES. 0-610M.		
Occurrence No.	26 Map Index: 24524	EO Index: 12899	Date	s Last Seen
Occ Rank:	Excellent		Elemen	nt: 1993-07-22
Origin:	Natural/Native occurrence		Si	te: 1993-07-22
	Presumed Extant			
	Unknown		Record Last Update	ed: 1995-11-14
Main Source:	NOSAL, T. 1993 (OBS)			
Quad Summary:	SACRAMENTO EAST (3812154/512C)			
County Summary:	SACRAMENTO			
Lat/Long:	38.59505° / -121.45680°		Township: 09N	
	Zone-10 N4272969 E634390		Range: 05E	
	47.0 ac	Mapping Precision: SPECIFIC	Section: 68	Qtr: N
Elevation:	20 ft	Symbol Type: POLYGON	Meridian: M	
Location:		AMERICAN RIVER, BETWEEN SOUTHERN PACIF	FIC RR TRACKS AND THE PUM	PING STATION,
	SACRAMENTO.			
Location Detail:		., FROM SPRR TRACKS WEST APPROX. 1 KM (0.	.7 MI).	
	NEXT TO AMERICAN RIVER BIKE TRAIL	SOCIATES INCLUDE PASPALUM, SETARIA, SALIX	•	WING OFFSHORE IN
Ecological:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURF	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN	K, AND TYPHA. MOSTLY GROV	
Ecological: General:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURF 50+ COLONIES OBSERVED IN SEVERAL	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN	K, AND TYPHA. MOSTLY GROV	
Ecological: General: Owner/Manager:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURF 50+ COLONIES OBSERVED IN SEVERAI SHOULD BE MADE AWARE OF THE PLA SAC COUNTY-PARKS & REC	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE.	K, AND TYPHA. MOSTLY GROV	
Ecological: General:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURE 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLASAC COUNTY-PARKS & REC	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN	K, AND TYPHA. MOSTLY GROV	/AY COUNTY PARK, C
Ecological: General: Owner/Manager: Occurrence No. Occ Rank:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURE 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLASAC COUNTY-PARKS & REC	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE.	K, AND TYPHA. MOSTLY GROU THE AMERICAN RIVER PARKW —— Date Eleme	/AY COUNTY PARK, C
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURF 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLA SAC COUNTY-PARKS & REC 27 Map Index: 24521 Poor Natural/Native occurrence Presumed Extant	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE.	K, AND TYPHA. MOSTLY GROV THE AMERICAN RIVER PARKW ———————————————————————————————————	s Last Seen nt: 1993-10-22 te: 1993-10-22
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURE 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLA SAC COUNTY-PARKS & REC 27 Map Index: 24521 Poor Natural/Native occurrence Presumed Extant Unknown	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE.	K, AND TYPHA. MOSTLY GROU THE AMERICAN RIVER PARKW —— Date Eleme	s Last Seen nt: 1993-10-22 te: 1993-10-22
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURE 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLA SAC COUNTY-PARKS & REC 27 Map Index: 24521 Poor Natural/Native occurrence Presumed Extant Unknown NOSAL, T. 1993 (OBS)	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE.	K, AND TYPHA. MOSTLY GROV THE AMERICAN RIVER PARKW ———————————————————————————————————	s Last Seen nt: 1993-10-22 te: 1993-10-22
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURE 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLA SAC COUNTY-PARKS & REC 27 Map Index: 24521 Poor Natural/Native occurrence Presumed Extant Unknown NOSAL, T. 1993 (OBS) SACRAMENTO EAST (3812154/512C)	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE.	K, AND TYPHA. MOSTLY GROV THE AMERICAN RIVER PARKW ———————————————————————————————————	s Last Seen nt: 1993-10-22 te: 1993-10-22
Ecological: General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURE 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLA SAC COUNTY-PARKS & REC 27 Map Index: 24521 Poor Natural/Native occurrence Presumed Extant Unknown NOSAL, T. 1993 (OBS) SACRAMENTO EAST (3812154/512C)	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE.	K, AND TYPHA. MOSTLY GROV THE AMERICAN RIVER PARKW ———————————————————————————————————	s Last Seen nt: 1993-10-22 te: 1993-10-22
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURE 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLA SAC COUNTY-PARKS & REC 27 Map Index: 24521 Poor Natural/Native occurrence Presumed Extant Unknown NOSAL, T. 1993 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.55401° / -121.42282°	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE.	K, AND TYPHA. MOSTLY GROV THE AMERICAN RIVER PARKW ———————————————————————————————————	s Last Seen
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURE 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLA SAC COUNTY-PARKS & REC 27 Map Index: 24521 Poor Natural/Native occurrence Presumed Extant Unknown NOSAL, T. 1993 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.55401° / -121.42282° Zone-10 N4268465 E637427	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE. EO Index: 12983	K, AND TYPHA. MOSTLY GROUTHE AMERICAN RIVER PARKW ———————————————————————————————————	s Last Seen nt: 1993-10-22 te: 1993-10-22 ed: 1995-11-14
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURE 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLA SAC COUNTY-PARKS & REC 27 Map Index: 24521 Poor Natural/Native occurrence Presumed Extant Unknown NOSAL, T. 1993 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.55401° / -121.42282° Zone-10 N4268465 E637427 80 meters	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE. EO Index: 12983 Mapping Precision: SPECIFIC	Township: 08N Range: 05E Section: 15	s Last Seen nt: 1993-10-22 te: 1993-10-22 ed: 1995-11-14
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURE 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLA SAC COUNTY-PARKS & REC 27 Map Index: 24521 Poor Natural/Native occurrence Presumed Extant Unknown NOSAL, T. 1993 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.55401° / -121.42282° Zone-10 N4268465 E637427 80 meters	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE. EO Index: 12983	K, AND TYPHA. MOSTLY GROUTHE AMERICAN RIVER PARKW ———————————————————————————————————	s Last Seen nt: 1993-10-22 te: 1993-10-22 ed: 1995-11-14
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURE 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLA SAC COUNTY-PARKS & REC 27 Map Index: 24521 Poor Natural/Native occurrence Presumed Extant Unknown NOSAL, T. 1993 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.55401° / -121.42282° Zone-10 N4268465 E637427 80 meters	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE. EO Index: 12983 Mapping Precision: SPECIFIC Symbol Type: POINT	Township: 08N Range: 05E Section: 15	s Last Seen nt: 1993-10-22 te: 1993-10-22 ed: 1995-11-14
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURE 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLA SAC COUNTY-PARKS & REC 27 Map Index: 24521 Poor Natural/Native occurrence Presumed Extant Unknown NOSAL, T. 1993 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.55401° / -121.42282° Zone-10 N4268465 E637427 80 meters 35 ft SMALL CHANNEL JUST SOUTH OF CSU	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE. EO Index: 12983 Mapping Precision: SPECIFIC Symbol Type: POINT	C, AND TYPHA. MOSTLY GROUTHE AMERICAN RIVER PARKW — Date Eleme Si Record Last Update Township: 08N Range: 05E Section: 15 Meridian: M	s Last Seen nt: 1993-10-22 te: 1993-10-22 ed: 1995-11-14
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6" OF WATER WITH NO SURE 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLA SAC COUNTY-PARKS & REC 27 Map Index: 24521 Poor Natural/Native occurrence Presumed Extant Unknown NOSAL, T. 1993 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.55401° / -121.42282° Zone-10 N4268465 E637427 80 meters 35 ft SMALL CHANNEL JUST SOUTH OF CSU SOUTH OF STADIUM, BETWEEN ROAD	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE. EO Index: 12983 Mapping Precision: SPECIFIC Symbol Type: POINT J. SACRAMENTO FOOTBALL FIELD.	Township: 08N Range: 05E Section: 15 Meridian: M	s Last Seen nt: 1993-10-22 te: 1993-10-22 ed: 1995-11-14
General: Owner/Manager: Occurrence No. Occ Rank: Origin: Presence: Trend: Main Source: Quad Summary: County Summary: Lat/Long: UTM: Radius: Elevation: Location: Location Detail: Ecological:	NEXT TO AMERICAN RIVER BIKE TRAIL SLOUGHS WITH MUDDY SHORES. ASS APPROX. 6° OF WATER WITH NO SURE 50+ COLONIES OBSERVED IN SEVERAL SHOULD BE MADE AWARE OF THE PLA SAC COUNTY-PARKS & REC 27 Map Index: 24521 Poor Natural/Native occurrence Presumed Extant Unknown NOSAL, T. 1993 (OBS) SACRAMENTO EAST (3812154/512C) SACRAMENTO 38.55401° / -121.42282° Zone-10 N4268465 E637427 80 meters 35 ft SMALL CHANNEL JUST SOUTH OF CSU SOUTH OF STADIUM, BETWEEN ROAD GRASSY DRAINAGE CHANNEL DOMINA	SOCIATES INCLUDE PASPALUM, SETARIA, SALI) ROUNDING VEGETATION. L DISCONTINUOUS SLOUGHS. SITE IS WITHIN ANTS PRESENCE. EO Index: 12983 Mapping Precision: SPECIFIC Symbol Type: POINT J, SACRAMENTO FOOTBALL FIELD. O AND PARKING LOT APPROX. 100' EAST OF CUI	Township: 08N Range: 05E Section: 15 Meridian: M	s Last Seen nt: 1993-10-22 te: 1993-10-22 ed: 1995-11-14

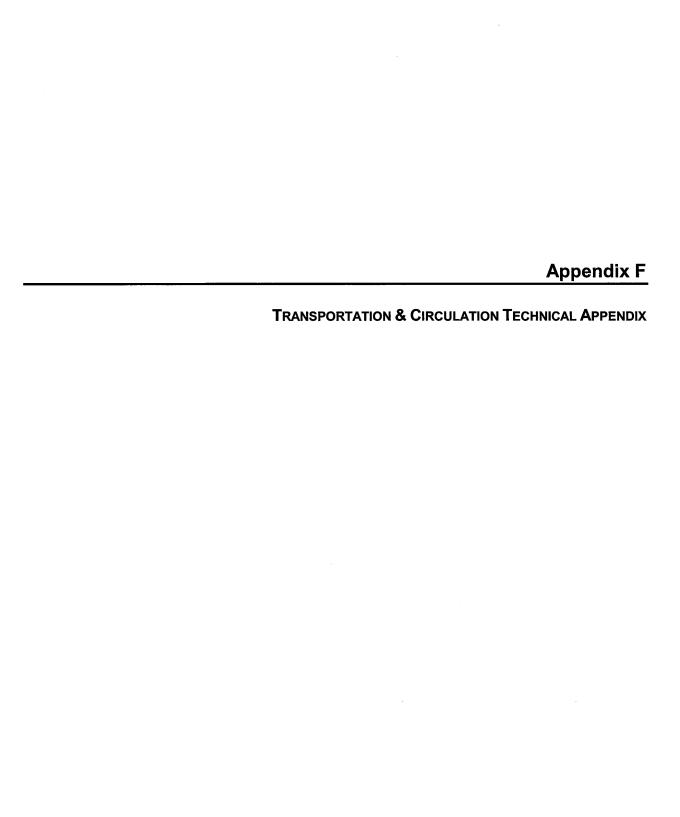
Sanford's arrowhead			Element Code: PMALI040Q0		
Federal: None State: None	us	NDDB Element Ranks Global: G3 State: S3.2		List: 1B ode: 2-2-3	
	sociations	R PONDS, MARSHES, AND DITCHES.	. 0-610M.		
Occurrence No. Occ Rank: Origin:		EO Index: 12962	-	– Dates La Element: Site:	st Seen 1993-10-23 1993-10-23
Trend:	Presumed Extant Unknown NOSAL, T. 1992 (OBS)		Record Last	Updated:	1995-11-14
Quad Summary: County Summary:	SACRAMENTO EAST (3812154/512C) SACRAMENTO				
UTM:	38.55834° / -121.41403° Zone-10 N4268959 E638185 80 meters 20 ft	Mapping Precision: SPE Symbol Type: POI		: 05E : XX	Qtr: XX
Location Detail:	DEPRESSION ALONG THE SOUTH SID BETWEEN THE RIVER AND LEVEE, BE GROWING IN A LOW, PERENNIAL WET	HIND AN APARTMENT COMPLEX AN	D NEAR THE WATER TREATMENT		
General:	SITE IS ADJACENT TO AMERICAN RIVI 1 COLONY OBSERVED IN 1992. SITE I SAC COUNTY-PARKS & REC				
Presence:	Fair Natural/Native occurrence Presumed Extant	EO Index: 12937	Record Las	Dates La Element: Site:	1992-10-23 1992-10-23 1995-11-14
Main Source:	Unknown NOSAL, T. 1992 (OBS) SACRAMENTO EAST (3812154/512C)		Record Las	t Opuateu.	1990-11-14
County Summary:	· · · · · · · · · · · · · · · · · · ·				
		Mapping Precision: SPi Symbol Type: PO		: 06E : 11	Qtr: E
	DRAINAGE INTO THE AMERICAN RIVE ALONG SILTY-CLAYEY BANK OF PERE PERSICARIA, CYPERUS. SAGITTARIA	ENIALLY WET DRAINAGE CHANNEL.	ASSOCIATES INCLUDE LUDWEGIA	PEPLOIDE	S, POLYGONUM
General:	PROXIMITY TO BIKE TRAIL MAY RESU 1 COLONY OBSERVED IN 1992. SITE I SAC COUNTY-PARKS & REC	ILT IN OCCASIONAL TRAMPLING.			
Presence: Trend:	•	EO Index: 2071	3 Record Las	Dates La Element: Site: t Updated:	1993-XX-XX 1993-XX-XX 1995-11-14
	SACRAMENTO EAST (3812154/512C)				
_		Mapping Precision: SPI Symbol Type: PO		: 05E : XX	Qtr: XX
Location	AMERICAN RIVER AT THE GUY WEST		, SACRAMENTO. GICAL AND THREAT INFO NEEDED.		

Sagittaria sanfordii						
Sanford's arrowhead			E	ement Code: PMALI040Q0		
State	us	NDDB Element F	Ranks ————	Other Lists -		
Federal: None		Global: G3		CNPS List:	: 1B	
State: None		State: S3.2		R-E-D Code:	2-2-3	
Habitat As	ssociations					
General: MARSH	ES AND SWAMPS.					
Micro: IN STAN	NDING OR SLOW-MOVING FRE	SHWATER PONDS, MARSHE	S, AND DITCHES. 0-610M	l.		
Occurrence No.	45 Map Index:	30076	EO Index: 14446	— р	Dates Last Seen	
Occ Rank:				Ele	ment: 1994-05-29	
•	Natural/Native occurrence				Site: 1994-05-29	
	Presumed Extant			Record Last Up	dated: 1995-11-14	
	Unknown NOSAL, T. 1994 (OBS)			Record East Op	uateu. 1555-11-14	
				···		
Quad Summary:	CARMICHAEL (3812153/512D)	, SACRAMENTO EAST (3812	154/512C)			
County Summary:	SACRAMENTO					
Lat/Long:	38.56822° / -121.37668°			Township: 0	08 N	
	Zone-10 N4270112 E641420			Range: 0	05E	
	80 meters	• • • • • • • • • • • • • • • • • • • •	ng Precision: SPECIFIC		XX Qtr: XX	
Elevation:	15 ft	S	ymbol Type: POINT	Meridian: 1	M	
Location:	AMERICAN RIVER UPSTREAM	FROM WATT AVE, NORTH	SIDE OF THE RIVER, SAC	RAMENTO.		
Location Detail:	LOCATED ABOUT 0.3 MILE EA (BASIN IS JUST EAST OF THE		R MILE 9.7. SITE IS DOWN	NSTREAM FROM WHERE STOR	RM BASIN DRAINS INTO	RIVER
Ecological:	BARE, SANDY SHORE OF RIV RUBUS, ET AL.	'ER IN LESS THAN 6" OF WA	TER. NO OTHER VEGETA	ATION NEARBY. BANK VEGETA	ATION CONSISTS OF SA	ALIX,
Threat:	PLANTS APPEAR TO HAVE B	EEN GRAZED/BROWSED (MI	JSKRAT/BEAVER/DEER/?	??), MAY BE TRAMPLED BY RE	CREATIONAL USERS.	
General:	10 PLANTS OBSERVED IN 19	94. SITE IS WITHIN THE LOW	VER AMERICAN RIVER PA	ARKWAY COUNTY PARK.		
	SAC COUNTY-PARKS & REC					
Owner/wanager:	SAC COURT T-FARRS & REC					

California Department of Fish and Game Natural Diversity Database Full Condensed Report for Selected Elements - Multiple Records per Page The Towers - Sacramento East and Sacramento West Quads

American badger		E	Element Code: AMAJF04010
Stat	us	NDDB Element Ranks	Other Lists
Federal: None		Global: G5	CDFG Status: SC
State: None		State: S4	
Habitat A	ssociations ————		
General: MOST	ABUNDANT IN DRIER OPEN STA	AGES OF MOST SHRUB, FOREST, AND HERBACEOUS	S HABITATS, WITH FRIABLE SOILS.
Micro: NEED S	SUFFICIENT FOOD, FRIABLE SO	OILS & OPEN, UNCULTIVATED GROUND. PREY ON BI	URROWING RODENTS. DIG BURROWS.
Occurrence No.	304 Map Index:	57545 EO Index: 57561	Dates Last Seen
Occ Rank:	Unknown		Element: XXXX-XX-XX
•	Natural/Native occurrence	•	Site: XXXX-XX-XX
	Presumed Extant		5 11 111 1 1 1 0001 10 01
	Unknown		Record Last Updated: 2004-10-21
Main Source:	CDFG 1986 (LIT)		
Quad Summary:	SACRAMENTO EAST (381215	4/512C)	
County Summary:	SACRAMENTO		
Lat/Long:	38.53222° / -121.40871°		Township: 08N
117744.	Zone-10 N4266069 E638699		Range: 05E
UTW:	1 mile	Mapping Precision: NON-SPEC	IFIC Section: 23 Qtr: XX
Radius:			Merîdian: M
		Symbol Type: POINT	Meridian: W
Radius:	40 ft	Symbol Type: POINT	werdian: w
Radius: Elevation: Location:	40 ft	Symbol Type: POINT	werdian: w

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ttti									ተተቡ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.99									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.98									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		6198									4982	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		6198									4982	
Volume (vph)	0	1982	336	0	0	0	0	0	0	155	218	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1982	336	0	0	0	0	0	0	155	218	0
RTOR Reduction (vph)	0	30	0	0	0	0	0	0	0	0	20	0
Lane Group Flow (vph)	0	2288	0	0	0	0	0	0	0	0	353	0
Confl. Peds. (#/hr)			60							60		
Parking (#/hr)										0		0
Turn Type										Split		
Protected Phases		2								1	1	
Permitted Phases												
Actuated Green, G (s)		71.5									21.5	
Effective Green, g (s)		71.0									21.0	
Actuated g/C Ratio		0.71									0.21	
Clearance Time (s)		3.5	2644-1-10-1-10-1-1-1-1-1-1-1-1-1-1-1-1-1-1								3.5	
Lane Grp Cap (vph)		4401									1046	
v/s Ratio Prot		c0.37									c0.07	
v/s Ratio Perm												
v/c Ratio		0.52									0.34	
Uniform Delay, d1		6.7									33.6	
Progression Factor		1.00									0.87	
Incremental Delay, d2		0.4									0.9	
Delay (s)		7.1									30.1	
Level of Service		Α									С	
Approach Delay (s)		7.1			0.0			0.0			30.1	
Approach LOS		Α			Α			Α			С	
Intersection Summary												
HCM Average Control D			10.3	F	ICM Le	vel of S	ervice		В			
HCM Volume to Capacit			0.48	opini si van san kantha tasah	BODALOVINI DO GRANDA VIDA	enderen benerali Armene (a. a.	elle tigde Goden Skapp (St. 100) och ette S		n Prantonini na u akalami			
Actuated Cycle Length (100.0			lost time			8.0			
Intersection Capacity Ut	ilization	2000-5-00-5-00-5-00-5-00-5-00-5-00-5-00	50.2%	l section and a	CU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2
Movement	SBTL	EBT
Lead/Lag	Lead	Lag
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	25	75
Maximum Split (%)	25.0%	75.0%
Minimum Split (s)	18.5	30.5
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	0
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s) 0	0
Time To Reduce (s)	0	0
Walk Time (s)	7	19
Flash Dont Walk (s)	8	8
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes
Start Time (s)	90.5	15.5
End Time (s)	15.5	90.5
Yield/Force Off (s)	12	87
Yield/Force Off 170(s)	4	79
Local Start Time (s)	3.5	28.5
Local Yield (s)	25	0
Local Yield 170(s)	17	92

Intersection Summary

Cycle Length 100 Control Type Pretimed Natural Cycle 50

Offset: 87 (87%), Referenced to phase 2:EBT, Start of Yellow

Splits and Phases: 1: Q St & 3rd St

№ ø1	→ ø2
25 s	75 s

3/2/2005 Synchro 6 Report Page 2

	۶		*	1	-	*	4	†	<i>></i>	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተጉ						ተ ኈ	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	4.0
Lane Util. Factor					0.91						0.91	0.91
Frpb, ped/bikes					1.00						0.99	0.93
Flpb, ped/bikes					1.00						1.00	1.00
Frt					1.00						0.98	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					4860						3108	1205
FIt Permitted					0.99		•				1.00	1.00
Satd. Flow (perm)					4860						3108	1205
Volume (vph)	0	0	0	132	446	0	0	0	0	0	241	176
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	132	446	0	0	0	0	0	241	176
RTOR Reduction (vph)	0	0	0	0	61	0	0	0	0	0	29	91
Lane Group Flow (vph)	0	0	0	0	517	0	0	0	0	0	258	39
Confl. Peds. (#/hr)				60								60
Parking (#/hr)				0	0						0	0
Turn Type				Split								Perm
Protected Phases				2	2						1	
Permitted Phases												1
Actuated Green, G (s)					27.5						15.5	15.5
Effective Green, g (s)					27.0						15.0	15.0
Actuated g/C Ratio					0.54						0.30	0.30
Clearance Time (s)					3.5						3.5	3.5
Lane Grp Cap (vph)					2624						932	362
v/s Ratio Prot					c0.11						c0.08	
v/s Ratio Perm												0.03
v/c Ratio					0.20						0.28	0.11
Uniform Delay, d1					5.9						13.4	12.7
Progression Factor					1.00						1.00	1.00
Incremental Delay, d2					0.2						0.7	0.6
Delay (s)					6.1						14.1	13.3
Level of Service					Α						В	В
Approach Delay (s)		0.0			6.1			0.0			13.8	
Approach LOS		Α			Α			Α			В	
Intersection Summary												
HCM Average Control D			9.3		HCM Le	vel of S	ervice		Α			
HCM Volume to Capaci			0.23									
Actuated Cycle Length			50.0			lost time			8.0			
Intersection Capacity Ut	tilization		30.5%		ICU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2
Movement	SBT	WBTL
Lead/Lag	Lead	Lag
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	19	31
Maximum Split (%)		62.0%
Minimum Split (s)	18.5	
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	0
Minimum Initial (s)	4	
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s		0
Time To Reduce (s)	0	0
Walk Time (s)	7	19
Flash Dont Walk (s)	8	8
Dual Entry	Yes	Yes
Inhibit Max	Yes	
Start Time (s)	40.5	
End Time (s)	9.5	
Yield/Force Off (s)	6	37
Yield/Force Off 170(s)	48	
Local Start Time (s)	3.5	
Local Yield (s)	19	
Local Yield 170(s)	11	42
Intersection Summary		
Cycle Length		
Control Type		Pr
ALL LO L		

Splits and Phases: 2: P St & 3rd St

Natural Cycle

∜ ø1	▼ ø2	
19 s	31 s	

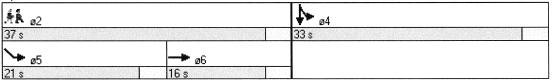
50

Offset: 37 (74%), Referenced to phase 2:WBTL, Start of Yellow

	→	*	>	↓	\	\	
Movement	EBT	EBR	SBL	SBT	SEL	SER	
Lane Configurations	1>			ተተኩ	ካ ካ		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0			4.0	4.0		
Lane Util. Factor	1.00			0.91	0.97		
Frpb, ped/bikes	0.98			1.00	1.00		
Flpb, ped/bikes	1.00			1.00	1.00		
Frt	0.98			1.00	0.96		
FIt Protected	1.00			0.97	0.96		
Satd. Flow (prot)	1798			4949	3350		
FIt Permitted	1.00			0.97	0.96		
Satd. Flow (perm)	1798			4949	3350		
Volume (vph)	78	13	369	303	326	113	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	78	13	369	303	326	113	
RTOR Reduction (vph)	8	0	0	213	0	0	
Lane Group Flow (vph)	83	0	0	459	439	0	
Confl. Peds. (#/hr)		60	60				
Parking (#/hr)			0				
Turn Type			Split				
Protected Phases	6		4	4	5		
Permitted Phases							
Actuated Green, G (s)	12.5			29.5	17.5		
Effective Green, g (s)	12.0			29.0	17.0		
Actuated g/C Ratio	0.17			0.41	0.24		
Clearance Time (s)	3.5			3.5	3.5		
Lane Grp Cap (vph)	308			2050	814		
v/s Ratio Prot	c0.05			c0.09	c0.13		
v/s Ratio Perm							
v/c Ratio	0.27			0.22	0.54		
Uniform Delay, d1	25.2			13.2	23.1		
Progression Factor	1.00			0.08	1.00		
Incremental Delay, d2	2.1			0.2	2.6		
Delay (s)	27.3			1.3	25.6		
Level of Service	С			Α	С		
Approach Delay (s)	27.3			1.3	25.6		
Approach LOS	С			A	С		
Intersection Summary							
HCM Average Control [12.2	1	HCM Le	el of Service	В
HCM Volume to Capaci			0.33				
Actuated Cycle Length			70.0			ost time (s)	12.0
Intersection Capacity U	tilization		53.7%	l	CU Leve	el of Service	Α
Analysis Period (min)			15				
c Critical Lane Group							

	A A	\$>	-	-
Phase Number	2	4	5	6
Movement	Ped	SBTL	SEL	EBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize				· · · · · · · · · · · · · · · · · · ·
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	37	33	21	16
Maximum Split (%)	52.9%	47.1%	30.0%	22.9%
Minimum Split (s)	37	33	7.5	16
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0	0	0	0
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	22.5	20.5		4.5
Flash Dont Walk (s)	11	9		8
Dual Entry	Yes	Yes		Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	20.5	57.5	20.5	41.5
End Time (s)	57.5	20.5	41.5	57.5
Yield/Force Off (s)	54			54
Yield/Force Off 170(s)	43	8	38	46
Local Start Time (s)	3.5			24.5
Local Yield (s)	37	0		37
Local Yield 170(s)	26	61	21	29
Intersection Summary				
Cycle Length			70	
Control Type		Р	retimed	
Natural Cycle			70	
Offset: 17 (24%), Refere	enced t	o phase	4:SBT	L, Start

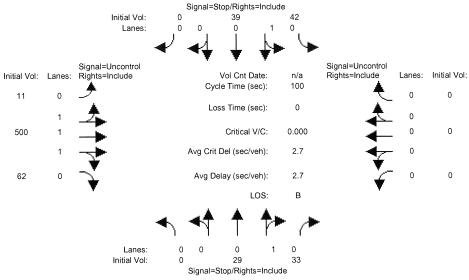
Splits and Phases: 3: N St & 3rd St



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Level Of Service Computation Report 2000 HCM Unsignalized (Future Volume Alternative) Existing AM

Intersection #4: N St./4th St.



			Signal	=Stop/Right	s=Include							
Street Name:				St						St		
Approach:						ound				W∈		
Movement:						- R						
Volume Module	e:											
Base Vol:	0	29	33	42	39	0	11	500	62	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	29	33	42	39	0	11	500	62	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:	0	29	33	42	39	0	11	500	62	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	29	33	42	39	0	11	500	62	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	29	33	42	39	0	11	500	62	0	0	0
Critical Gap	Modu]	le:										
Critical Gp:x	XXXXX	6.5	6.2	7.1	6.5	XXXXX	4.1	XXXX	XXXXX	XXXXX	XXXX	XXXXX
FollowUpTim:x						XXXXX						
Capacity Modu	ıle:											
Cnflict Vol:	XXXX	568	198	218	599	XXXXX	15	XXXX	XXXXX	XXXX	XXXX	XXXXX
Potent Cap.:	XXXX	435				XXXXX						
Move Cap.:					410	XXXXX	1596	XXXX	XXXXX	XXXX	XXXX	XXXXX
Volume/Cap:	XXXX	0.07	0.04	0.06		XXXX				XXXX		
Level Of Serv	vice N	Module	∋:									
Queue:	XXXXX	XXXX	XXXXX	XXXXX	XXXX	XXXXX	0.0	XXXX	XXXXX	XXXXX	XXXX	XXXXX
Stopped Del:							7.3			XXXXX		
LOS by Move:				*		*	A	*	*	*	*	*
Movement:							LT ·	- LTR	- RT	LT ·	- LTR	- RT
Shared Cap.:							XXXX	XXXX	XXXXX	XXXX	XXXX	XXXXX
SharedQueue::								XXXX	XXXXX	XXXXX	XXXX	XXXXX
Shrd StpDel:				13.4			7.3			XXXXX		
Shared LOS:			В	В	*	*	А	*	*	*	*	*
ApproachDel:					13.4		X	XXXXX		X	XXXXX	
ApproachLOS:		В			В			*			*	

	۶		*	•	4	4	4	†	/	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተቡ					***************************************	ተተ _ጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.96				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5058						4844				
FIt Permitted		0.99						1.00				
Satd. Flow (perm)		5058						4844				
Volume (vph)	63	523	0	0	0	0	0	619	193	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	63	523	0	0	0	0	0	619	193	0	0	0
RTOR Reduction (vph)	0	21	0	0	0	0	0	81	0	0	0	0
Lane Group Flow (vph)	0	565	0	0	0	0	0	731	0	0	0	0
Confl. Peds. (#/hr)	60								60			
Parking (#/hr)	0		0						0			
Turn Type	Split	*****************	***************************************									
Protected Phases	1	1						2				
Permitted Phases												
Actuated Green, G (s)		31.5						31.5				
Effective Green, g (s)		31.0						31.0				
Actuated g/C Ratio		0.44						0.44				
Clearance Time (s)		3.5						3.5				
Lane Grp Cap (vph)		2240						2145				
v/s Ratio Prot		c0.11						c0.15				
v/s Ratio Perm												
v/c Ratio		0.25						0.34				
Uniform Delay, d1		12.2						12.8				
Progression Factor		1.27						1.00				
Incremental Delay, d2		0.3						0.4				
Delay (s)		15.8						13.2				
Level of Service		В						В				
Approach Delay (s)		15.8			0.0			13.2			0.0	
Approach LOS		В			Α			В			Α	
Intersection Summary												
HCM Average Control D			14.3		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci	. •		0.30									
Actuated Cycle Length (70.0			lost time			8.0			
Intersection Capacity Ut	ilization		43.9%		CU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												

	4	<u>†</u>
Phase Number	1	2
Movement	EBTL	NBT
Lead/Lag	Lead	Lag
Lead-Lag Optimize		es es es establica es establica e
Recall Mode	Max	Max
Maximum Split (s)	35	35
Maximum Split (%)	50.0%	50.0%
Minimum Split (s)	34.5	34.5
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	0
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s		0
Time To Reduce (s)	0	0
Walk Time (s)	22	22
Flash Dont Walk (s)	9	9
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes
Start Time (s)	65.5	30.5
End Time (s)	30.5	65.5
Yield/Force Off (s)	27	62
Yield/Force Off 170(s)	18	53
Local Start Time (s)	38.5	3.5
Local Yield (s)	0	35
Local Yield 170(s)	61	26
Intersection Summary		
Cycle Length		en Linkston (bessel <u>in</u> besone
Control Type		Pre
Natural Cycle		

Splits and Phases: 5: N St & 5th St

Offset: 27 (39%), Referenced to phase 1:EBTL, Start of Yellow

♣ ø1	↑ ø2
35 s	35 s

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተ ን		ሻ	ተተ						नांक	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.91		1.00	0.95						0.86	
Frpb, ped/bikes		1.00		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.99		1.00	1.00						1.00	
FIt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		5034		1770	3539						6307	
FIt Permitted		1.00		0.95	1.00						0.99	
Satd. Flow (perm)		5034		1770	3539						6307	
Volume (vph)	0	745	35	63	147	0	0	0	0	219	548	10
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	745	35	63	147	0	0	0	0	219	548	10
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	773	0	63	147	0	0	0	0	0	775	O
Confl. Peds. (#/hr)	er saca . Mai		60			Taran Taran		· ·	· ·			
Parking (#/hr)			J							0		
Turn Type				Prot				C (C) 18-2 No. (Page 18-18-20-20-20-20-20-20-20-20-20-20-20-20-20-		Split		
Protected Phases		6		5	2					4	4	
Permitted Phases												
Actuated Green, G (s)		20.0		12.5	36.0						25.5	
Effective Green, g (s)		19.5		12.0	35.5						26.5	
Actuated g/C Ratio		0.28		0.17	0.51						0.38	
Clearance Time (s)		3.5		3.5	3.5						5.0	
Lane Grp Cap (vph)		1402		303	1795						2388	
v/s Ratio Prot		c0.15		c0.04	0.04						c0.12	
v/s Ratio Perm		00.10		00.01	0.0.						00	
v/c Ratio		0.55		0.21	0.08						0.32	
Uniform Delay, d1		21.5		24.9	8.9						15.4	
Progression Factor		1.00		0.75	1.59						0.71	
Incremental Delay, d2		1.6		1.6	0.1						0.3	
Delay (s)		23.1		20.4	14.2						11.3	
Level of Service		20.1 C		20.4 C	В						В	
Approach Delay (s)		23.1		_	16.0			0.0			11.3	
Approach LOS		20.1 C			В			Α.			В	
Intersection Summary												
HCM Average Control D	Delay		17.1		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci	ty ratio		0.38									
Actuated Cycle Length (70.0		Sum of	lost time	(s)		12.0			
Intersection Capacity Ut	POLICIES DE PRESENTATION DE		42.3%			el of Se			Α			
Analysis Period (min)			15									
c Critical Lane Group												

4	1	1	-
2	4	5	6
WBT	SBTL	WBL	EBT
		Lead	Lag
			ACMINISTRATION OF THE PARTY OF
Max	Max	Max	Max
39.5	30.5	16	23.5
6.4%	43.6%	22.9%	33.6%
39.5	30.5	7.5	23.5
3.5	3.5	3.5	3.5
0	1.5	0	0
4	4	4	4
3	3	3	3
3	3	3	3
0	0	0	0
0	0	0	0
26	20.5		10
10	5		10
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
22.5	62	22.5	38.5
62	22.5	38.5	62
58.5	17.5	35	58.5
48.5	12.5	35	48.5
57.5	27	57.5	3.5
23.5	52.5	0	23.5
13.5	47.5	0	13.5
		70	
	P	retimed	
		70	
	Max 39.5 6.4% 39.5 3.5 0 4 3 3 0 0 26 10 Yes 22.5 62 58.5 57.5 23.5	Max Max 39.5 30.5 6.4% 43.6% 39.5 3.5 3.5 0 1.5 4 4 3 3 3 0 0 0 0 26 20.5 10 5 Yes Yes Yes Yes Yes Yes 22.5 62 62 22.5 58.5 17.5 48.5 12.5 57.5 27 23.5 52.5 13.5 47.5	Max Max Max 39.5 30.5 16 6.4% 43.6% 22.9% 39.5 30.5 7.5 3.5 3.5 3.5 0 1.5 0 4 4 4 3 3 3 3 0 0 0 0 0 0 0 26 20.5 10 5 Yes Yes Yes Yes Yes Yes Yes Yes Yes 22.5 62 22.5 62 22.5 38.5 58.5 17.5 35 48.5 12.5 35 57.5 27 57.5 23.5 52.5 0 13.5 47.5 0

Splits and Phases: 6: Capitol Mall & 3rd St

← ø2		№ ø4	
39.5 s		30.5 s	
√ ø5 16 s	→ ø6 23.5 s		

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	۶	-	*	•	-	*	4	†	/	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		414	7		414			4			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.0			4.0	
Lane Util. Factor		0.95	1.00		0.91			1.00			1.00	
Frpb, ped/bikes		1.00	0.87		0.97			0.96			1.00	
Flpb, ped/bikes		1.00	1.00		1.00			0.98			0.98	
Frt		1.00	0.85		0.97			0.95			1.00	
Flt Protected		1.00	1.00		1.00			0.99			0.99	
Satd. Flow (prot)		3539	1380		4813			1489			1613	
Flt Permitted		1.00	1.00		1.00			0.93			0.94	
Satd. Flow (perm)		3539	1380		4813			1405			1532	
	0	795	169	0	194	47	10	12	13	37	119	6
Volume (vph) Peak-hour factor, PHF	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	0.00	1.00	47	1.00	1.00	1.00	37	119	1.00
Adj. Flow (vph)	0	795										
RTOR Reduction (vph)	0	0	78	0	22	0	0	8	0	0	2	0
Lane Group Flow (vph)	0	795	91	0	219	0	0	27	0	0	160	0
Confl. Peds. (#/hr)	60		60	60		60	60		60	60		60
Parking (#/hr)	100						0	0	0	0	0	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)		38.0	38.0		38.0			23.5			23.5	
Effective Green, g (s)		37.5	37.5		37.5			24.5			24.5	
Actuated g/C Ratio		0.54	0.54		0.54			0.35			0.35	
Clearance Time (s)		3.5	3.5		3.5			5.0			5.0	
Lane Grp Cap (vph)		1896	739		2578			492			536	
v/s Ratio Prot		c0.22			0.05							
v/s Ratio Perm			0.07					0.02			c0.10	
v/c Ratio		0.42	0.12		0.09			0.05			0.30	
Uniform Delay, d1		9.7	8.1		7.9			15.1			16.5	
Progression Factor		0.92	3.10		0.47			0.85			0.57	
Incremental Delay, d2		0.6	0.3		0.1			0.2			1.4	
Delay (s)		9.5	25.3		3.8			13.0			10.9	
Level of Service		Α.	20.0 C		Α			В			В	
Approach Delay (s)		12.3	_		3.8			13.0			10.9	
Approach LOS		12.3 B			3.0 A			В			В	
Intersection Summary												
HCM Average Control D	Delay		10.7		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.37									
Actuated Cycle Length			70.0		Sum of	ost time	e (s)		8.0			
Intersection Capacity U		1	54.2%			el of Se			A			
Analysis Period (min)		•	15									
c Critical Lane Group			• ₹									

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Synchro 6 Report

Page 12



Phase Number	2	4	
Movement	EBWB	NBSB	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max		
Maximum Split (s)	41.5		
Maximum Split (%)		40.7%	
Minimum Split (s)	22.5		
Yellow Time (s)	3.5		
All-Red Time (s)	0		
Minimum Initial (s)	4		
Vehicle Extension (s)	3		
Minimum Gap (s)	3		
Time Before Reduce (s			
Time To Reduce (s)	0		
Walk Time (s)	9		
Flash Dont Walk (s)	10		
Dual Entry	Yes	autorio e e con porte de esperante de la composición del composición de la composición del composición de la composición	
Inhibit Max	Yes	사용하다 하게 무리를 하게 되었다.	
Start Time (s)	59		
End Time (s)	30.5		
Yield/Force Off (s)	27		
Yield/Force Off 170(s)	17		
Local Start Time (s)	32		
Local Yield (s)	0		
Local Yield 170(s)	60	17	
Intersection Summary			
Cycle Length			70
Control Type		Preti	
Natural Cycle			45

Splits and Phases: 7: Capitol Mall & 4th St

ø2	₩ 04
41.5 s	28.5 s

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	ተተ			ተተጉ		ሻሻ	<u></u> ተተኩ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	0.97	0.95			0.91		0.97	0.91				
Frpb, ped/bikes	1.00	1.00			0.98		1.00	0.98				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.96		1.00	0.97				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			4799		3433	4861				
FIt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			4799	VII VII VII VII VII VII VIII VIIII VIII VIII VIII VIII VIII VIII VIII	3433	4861	1100000			
Volume (vph)	491	354	0	0	115	37	126	297	60	. 0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	491	354	0	0	115	37	126	297	60	0	0	0
RTOR Reduction (vph)	0	0	0	0	27	0	0	38	0	0	0	O
Lane Group Flow (vph)	491	354	0	0	125	0	126	319	0	0	0	0
Confl. Peds. (#/hr)						60			60			
Turn Type	Prot						Split					
Protected Phases	1	6			2		8	8				
Permitted Phases												
Actuated Green, G (s)	14.5	36.5			18.5		25.0	25.0				
Effective Green, g (s)	14.0	36.0			18.0		26.0	26.0				
Actuated g/C Ratio	0.20	0.51			0.26		0.37	0.37				
Clearance Time (s)	3.5	3.5			3.5		5.0	5.0				
Lane Grp Cap (vph)	687	1820			1234		1275	1806				
v/s Ratio Prot	c0.14	c0.10			0.03		0.04	c0.07				
v/s Ratio Perm												
v/c Ratio	0.71	0.19			0.10		0.10	0.18				
Uniform Delay, d1	26.1	9.2			19.8		14.4	14.8				
Progression Factor	0.75	0.14			1.00		0.51	0.41				
Incremental Delay, d2	5.8	0.2			0.2		0.1	0.2				
Delay (s)	25.5	1.5			20.0		7.5	6.3				
Level of Service	С	Ā			В		Α	Α				
Approach Delay (s)		15.5			20.0			6.6			0.0	
Approach LOS		В			В			Α			Α	
Intersection Summary												
HCM Average Control [13.0		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci	ty ratio		0.32									
Actuated Cycle Length	(s)		70.0	, and the second section of the s	Sum of	lost time	(s)		12.0			
Intersection Capacity U			48.2%			el of Se			Α			
Analysis Period (min)			15									
c Critical Lane Group												

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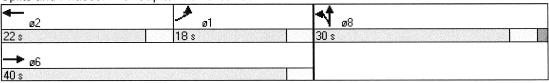
Phase Number	1	2	6	8
Movement	EBL	WBT	EBT	NBTL
Lead/Lag	Lag	Lead		
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	18	22	40	30
Maximum Split (%)	25.7%	31.4%	57.1%	42.9%
Minimum Split (s)	7.5	20.5	20.5	17
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0	0	0	1.5
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)) 0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)		7	7	7
Flash Dont Walk (s)		10	10	5
Dual Entry	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	20.5	68.5	68.5	38.5
End Time (s)	38.5	20.5	38.5	68.5
Yield/Force Off (s)	35	17	35	63.5
Yield/Force Off 170(s)	35	7	25	58.5
Local Start Time (s)	55.5	33.5	33.5	3.5
Local Yield (s)	0	52	0	28.5
Local Yield 170(s)	0	42	60	23.5

Intersection Summary

Cycle Length 70
Control Type Pretimed
Natural Cycle 55

Offset: 35 (50%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow

Splits and Phases: 8: Capitol Mall & 5th St



	•	4-	*_	•	ļ.	4	w
Movement	WBL	WBT	WBR	WBR2	SBT	SBR	SBR2
Lane Configurations	ሻ	44	7	7	<u>ተተተ</u>		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	0.91	0.95	1.00	0.91		
Frt	1.00	0.97	0.85	0.85	0.98		
Flt Protected	0.95	1.00	1.00	1.00	1.00		
Satd. Flow (prot)	1681	1650	1504	1583	4964		
Flt Permitted	0.95	1.00	1.00	1.00	1.00		
Satd. Flow (perm)	1681	1650	1504	1583	4964		
Volume (vph)	119	156	202	67	657	117	7
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	119	156	202	67	657	117	7
RTOR Reduction (vph)		0	0	36	1	0	0
Lane Group Flow (vph)		190	168	31	780	0	. 0
	custom	Prot	(custom	a		
Protected Phases		2			4		
Permitted Phases	2		2	2			
Actuated Green, G (s)	32.5	32.5	32.5	32.5	30.5		
Effective Green, g (s)	32.0	32.0	32.0	32.0	30.0		
Actuated g/C Ratio	0.46	0.46	0.46	0.46	0.43		
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5		
Lane Grp Cap (vph)	768	754	688	724	2127		
v/s Ratio Prot		c0.12			c0.16		
v/s Ratio Perm	0.03		0.11	0.02			
v/c Ratio	0.07	0.25	0.24	0.04	0.37		
Uniform Delay, d1	10.7	11.7	11.6	10.5	13.6		
Progression Factor	0.51	0.78	0.78	0.58	1.00		
Incremental Delay, d2	0.2	0.8	0.8	0.1	0.5		
Delay (s)	5.6	9.9	9.9	6.2	14.0		
Level of Service	Α	Α	Α	Α	В		
Approach Delay (s)		8.5			14.0		
Approach LOS		Α			В		
Intersection Summary							
HCM Average Control	Delay		11.8	H	HCM Le	vel of S	ervice
HCM Volume to Capac	city ratio		0.31				
Actuated Cycle Length	(s)		70.0		Sum of I	ost time	e (s)
Intersection Capacity U	Jtilization		31.6%		CU Lev	el of Se	rvice
Analysis Period (min)			15				
c Critical Lane Group)						



Phase Number	2	4
Movement	WBTL	SBT
Lead/Lag		
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	36	34
Maximum Split (%)	51.4%	48.6%
Minimum Split (s)	7.5	34
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	0
Minimum Initial (s)	4	
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s		0
Time To Reduce (s)	0	0
Walk Time (s)		22.5
Flash Dont Walk (s)		8
Dual Entry	Yes	Yes
Inhibit Max	Yes	
Start Time (s)	2.5	
End Time (s)	38.5	
Yield/Force Off (s)	35	
Yield/Force Off 170(s)	35	
Local Start Time (s)	3.5	
Local Yield (s)	36	
Local Yield 170(s)	36	62
Intersection Summary		
Cycle Length		

Cycle Length Control Type Pretimed Natural Cycle 50

Offset: 69 (99%), Referenced to phase 4:SBT, Start of Yellow

9: L St & 3rd St Splits and Phases:

ø2	₩ 04
36 s	34 s

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Lane Configurations Ideal Flow (vphpl) 19 Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1 Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph)	<u>=BL</u> 900	1900	1900	WBL 1900	WBT 1117> 1900	WBR 1900	NBL 1900	NBT ↑↑↑ 1900	NBR	SBL	SBT	SBR
Ideal Flow (vphpl) Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph)	900	1900	1900	1900	1900	1900			4000	Table And State Control of Contro		77
Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1 Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph)	900	1900	1900	1900		1900	1000	1000	4000			
Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1 Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph)					4.0				1900	1900	1900	1900
Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1 Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph)					4.0		4.0	4.0				4.0
Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph)					0.86		1.00	0.91				0.88
Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1 Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph)					0.99		1.00	1.00				0.95
Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1 Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph)					1.00		1.00	1.00				1.00
Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1 Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph)					0.98		1.00	1.00				0.85
Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1 Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph)					1.00		0.95	1.00				1.00
Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1 Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph)					6202		1770	5085				2656
Volume (vph) Peak-hour factor, PHF 1 Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph)					1.00		0.95	1.00				1.00
Peak-hour factor, PHF 1 Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph)	The Lagran				6202		1770	5085	1	_		2656
Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph)	0	0	0	0	514	93	76	483	0	0	0	98
RTOR Reduction (vph) Lane Group Flow (vph)	00.1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Group Flow (vph)	0	0	0	0	514	93	76	483	0	0	0	98
	0	0	0	0	47	0	37	0	0	0	0	48
	0	0	0	0	560	0	39 60	483	0	0	0	50 60
Confl. Peds. (#/hr)						60						
Turn Type							Split	4			С	custom
Protected Phases					2		1	1				4
Permitted Phases					25.0		2F F	35.5				1 35.5
Actuated Green, G (s)					25.0 26.0		35.5 36.0	36.0				36.0
Effective Green, g (s)					0.37		0.51	0.51				0.51
Actuated g/C Ratio					5.0		4.5	4.5				4.5
Clearance Time (s)					2304		910	2615				1366
Lane Grp Cap (vph)					c0.09		0.02	c0.09				1300
v/s Ratio Prot v/s Ratio Perm					60.09		0.02	00.09				0.02
v/c Ratio					0.24		0.04	0.18				0.02
Uniform Delay, d1					15.2		8.4	9.1				8.4
Progression Factor					1.00		0.43	0.42				1.00
Incremental Delay, d2					0.3		0.43	0.42				0.1
Delay (s)					15.5		3.7	4.0				8.5
Level of Service					15.5 B		Α.	ч.о А				Δ.
Approach Delay (s)		0.0			15.5		, ,	4.0			8.5	
Approach LOS		A			В			A			A	
Intersection Summary												
HCM Average Control Dela			9.8	ł	HCM Le	vel of Se	ervice		Α			
HCM Volume to Capacity r	atio		0.21									
Actuated Cycle Length (s)												
Intersection Capacity Utilization			70.0			ost time			8.0			
Analysis Period (min) c Critical Lane Group	ation	ĺ				ost time el of Sei			8.0 B			

4	4-
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Phase Number	1	2
Movement	NBTL	WBT
Lead/Lag	Lead	Lag
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	40	30
Maximum Split (%)	57.1%	42.9%
Minimum Split (s)	40	30
Yellow Time (s)	3.5	3.5
All-Red Time (s)	1	1.5
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s		0
Time To Reduce (s)	0	0
Walk Time (s)	26.5	16
Flash Dont Walk (s)	9	9
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes
Start Time (s)	37	
End Time (s)	7	37
Yield/Force Off (s)	2.5	32
Yield/Force Off 170(s)	63.5	23
Local Start Time (s)	5	45
Local Yield (s)	40.5	0
Local Yield 170(s)	31.5	61
Intersection Summary		
Cycle Length		
Control Type		Pretin

Control Type
Natural Cycle 70

Offset: 32 (46%), Referenced to phase 2:WBT, Start of Yellow

Splits and Phases: 10: L St & 5th St

♣ ₀1	← ø2
40 s	30 s

	•	-	*	1	-	↓	•	\	7	
Movement	EBL	EBT	EBR	NBR	SBL	SBT	SEL2	SEL	SER	Section 12
ane Configurations		ፈተኩ		77	ሻ	414		አ ነገጒ		
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0	4.0		4.0		
_ane Util. Factor		0.91		0.88	0.91	0.91		0.91		
=rpb, ped/bikes		0.99		1.00	1.00	1.00		0.97		
Flpb, ped/bikes		1.00		1.00	1.00	1.00		1.00		
E rt		0.98		0.85	1.00	1.00		0.96		
FIt Protected		1.00		1.00	0.95	0.99		0.96		
Satd. Flow (prot)		4977		2787	1610	3351		6118		
FIt Permitted		1.00		1.00	0.95	0.99		0.96		
Satd. Flow (perm)		4977		2787	1610	3351		6118		
Volume (vph)	23	1578	185	105	102	110	11	1511	491	7
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	23	1578	185	105	102	110	11	1511	491	
RTOR Reduction (vph)	0	14	0	6	0	0	0	0	0	
Lane Group Flow (vph)	0	1772	0	99	68	144	0	2013	0	
Confl. Peds. (#/hr)			60		T 7		:::::::::::::::::::::::::::::::::::::		60	
Turn Type	Split		TO YOU DAY AND AN AND AN AND AN AND AN	custom	Perm		Split			
Protected Phases	3	3				1	2	2		
Permitted Phases	_			1	1		_	_		
Actuated Green, G (s)		46.0		11.5	11.5	11.5		31.0		
Effective Green, g (s)		46.0		11.0	11.0	11.0		31.0		
Actuated g/C Ratio		0.46		0.11	0.11	0.11		0.31		
Clearance Time (s)		4.0		3.5	3.5	3.5		4.0		
Lane Grp Cap (vph)		2289		307	177	369		1897		
v/s Ratio Prot		c0.36		307		000		c0.33		
v/s Ratio Perm		60.50		0.04	0.04	0.04		60.00		
v/c Ratio		0.77		0.32	0.38	0.39		1.06		
Uniform Delay, d1		22.6		41.1	41.4	41.4		34.5		
Progression Factor		1.00		1.00	1.19	1.19		1.00		
Incremental Delay, d2		2.6		2.8	6.2	3.1		39.1		
Delay (s)		25.3		43.8	55.3	52.2		73.6		
Level of Service		25.5 C		43.6 D	55.5 E	52.2 D		73.0 E		
Approach Delay (s)		25.3		U	E	53.2		73.6		
Approach LOS		25.5 C				55.2 D		73.0 E		
Intersection Summary			50 2		10111					
HCM Average Control D			50.8	1	HCM Le	vel of S	ervice		D	
HCM Volume to Capacit			0.83						10.0	
Actuated Cycle Length (100.0		Sum of I				12.0	
Intersection Capacity Uti	ilization	Ĺ	82.9%	l	CU Lev	el of Se	rvice		E	
Analysis Period (min)			15							

	1 **	4	4	养良
Phase Number	1	2	3	6
Movement	SBTL	SEL	EBTL	Ped
Lead/Lag	Lead	Lag		
Lead-Lag Optimize		•		
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	15	35	50	50
	15.0%	35.0%	50.0%	50.0%
Minimum Split (s)	7.5	35	50	50
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3		3
Minimum Gap (s)	3	3		3
Time Before Reduce (s)) 0	0		0
Time To Reduce (s)	0	0	0	0
Walk Time (s)		20		35
Flash Dont Walk (s)		11	11	11
Dual Entry	Yes	Yes		Yes
Inhibit Max	Yes	Yes		Yes
Start Time (s)	33		83	33
End Time (s)	48	83		83
Yield/Force Off (s)	44.5	79		79
Yield/Force Off 170(s)	44.5	68		68
Local Start Time (s)	54		4	54
Local Yield (s)	65.5	0	·	0
Local Yield 170(s)	65.5			89
Intersection Summary				
Cycle Length			100	
Control Type		Р	retimed	
Natural Cycle			100	
Offset: 79 (79%), Refere	enced t	o phase	2:SEL.	Start of
i kild Pilled kalmann alagmaga kindag i gilda garging nggah ilikahat 💽 🛠 li pillang an inggap Kild		san Papaleon (PAT	nement of the state of the stat	
Splits and Phases: 11	1: J St 8	& 3rd St		
1999 Berthe Changes elemente et est tot bete a selven note tot state € tot a ten vermen Justit ±		o phase 3rd St		Start of

V ø1	≰ ø2	♣ ø3
15 s	35 s	50 s
Åk ø6		

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	۶	-	*	1	◆-	•	4	†	1	-	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	नाा	7		***************************************			朴玲	7			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.81	1.00					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.96					1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.95	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	6032	1514					3234	1441			
FIt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	6032	1514					3234	1441			
Volume (vph)	680	2425	98	0	0	0	0	280	296	0	0	C
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	680	2425	98	0	0	0	0	280	296	0	0	C
RTOR Reduction (vph)	176	1	43	0	0	0	0	1	1	0	0	С
Lane Group Flow (vph)	476	2452	55	0	0	0	0	403	171	0	0	0
Confl. Peds. (#/hr)	60		60									
Parking (#/hr)	0											
Turn Type	Split		Perm						Perm		1000 10	100 S. Pro-12 100 S. Pro-
Protected Phases	1	1						2	-			
Permitted Phases			1						2			
Actuated Green, G (s)	56.0	56.0	56.0					36.0	36.0			
Effective Green, g (s)	56.0	56.0	56.0					36.0	36.0			
Actuated g/C Ratio	0.56	0.56	0.56					0.36	0.36			
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Grp Cap (vph)	722	3378	848					1164	519			
v/s Ratio Prot	0.37	c0.41	.					c0.12	9.9			
v/s Ratio Perm	0.0.	00	0.04					00	0.12			
v/c Ratio	0.66	0.73	0.06					0.35	0.33			
Uniform Delay, d1	15.3	16.3	10.0					23.4	23.2			
Progression Factor	1.15	0.96	1.48					1.00	1.00			
Incremental Delay, d2	2.1	0.6	0.1					0.8	1.7			
Delay (s)	19.8	16.3	15.0					24.2	24.9			
Level of Service	В.	В	В.						_ T.O			
Approach Delay (s)	-	17.0			0.0			24.4	~		0.0	
Approach LOS		В.			Α			C			Α	
Intersection Summary												
HCM Average Control E	elay		18.1	1	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci	ty ratio		0.58									
Actuated Cycle Length (100.0	Sum of lost time (s)				8.0				
Intersection Capacity Ut			67.1%			el of Se			С			
Analysis Period (min) c Critical Lane Group			15									

4	1
95	•

Phase Number	1	2
Movement	EBTL	NBT
Lead/Lag	Lead	Lag
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	60	40
	80.0%	40.0%
Minimum Split (s)	60	40
Yellow Time (s)	4	4
All-Red Time (s)	0	0
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s)	0	0
Time To Reduce (s)	0	0
Walk Time (s)	44	20
Flash Dont Walk (s)	12	16
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes
Start Time (s)	43	
End Time (s)	3	
Yield/Force Off (s)	99	
Yield/Force Off 170(s)	87	23
Local Start Time (s)	44	
Local Yield (s)	0	
Local Yield 170(s)	88	24
Intersection Summary		
Cycle Length		

Control Type Pretimed Natural Cycle 100

Offset: 99 (99%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 12: J St & 5th St

♣ ø1	1 ø2
60 s	40 s

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	en habbada kan di Nahayan kidan				4ttt		ሻሻ	ተተ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		0.97	0.95				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.99		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6117		3433	3362				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6117		3433	3362				
Volume (vph)	0	0	0	0	753	81	148	752	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	753	81	148	752	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	36	0	43	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	798	0	105	752	0	0	0	0
Confl. Peds. (#/hr)	9	J	•	9	, 55	60	100	, 02	9	~	9	~
Parking (#/hr)					0	00		0				
Turn Type							Split					
Protected Phases					1		3piit 2	2				
Permitted Phases					1							
					16.5		26.5	26.5				
Actuated Green, G (s)					16.0		26.0	26.0				
Effective Green, g (s)												
Actuated g/C Ratio					0.32		0.52	0.52				
Clearance Time (s)				0.101203-0120-01305	3.5		3.5	3.5				
Lane Grp Cap (vph)					1957		1785	1748				
v/s Ratio Prot					c0.13		0.03	c0.22				
v/s Ratio Perm												
v/c Ratio					0.41		0.06	0.43				
Uniform Delay, d1					13.3		5.9	7.4				
Progression Factor					1.00		1.82	1.33				
Incremental Delay, d2					0.6		0.0	0.6				
Delay (s)					13.9		10.9	10.5				
Level of Service					В		В	В				
Approach Delay (s)		0.0			13.9			10.5			0.0	
Approach LOS		A			В			В			A	
Intersection Summary												
HCM Average Control D			12.2		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.42						Marakan w <u>a</u> na 1986			
Actuated Cycle Length (50.0			lost time			8.0			
Intersection Capacity Ut	ilization	os ele expelimentos e en en en en	88.4%	olinga ing ip cana.	ICU Lev	el of Se	rvice		E			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2
Movement	WBT	NBTL
Lead/Lag	Lead	Lag
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	20	30
그 사람들은 사람들이 되면 하면 하는데 하면 하는데 하는데 하는데 하는데 하는데 하는데 하는데 되었다.		60.0%
Minimum Split (s)	20	30
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	0
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s)		0
Time To Reduce (s)	0	0
Walk Time (s)	5.5	14.5
Flash Dont Walk (s)	11	12
Dual Entry	Yes	Yes
Inhibit Max	Yes	그리다 그리는 사람들은 그리는 그리는 그리다.
Start Time (s)	15.5	
End Time (s)	35.5	
Yield/Force Off (s)	32	
Yield/Force Off 170(s)	21	0
Local Start Time (s)	33.5	
Local Yield (s)	0	
Local Yield 170(s)	39	18
Intersection Summary		
Cycle Length		
Control Type		Pretir
Natural Cycle		
Offset: 32 (64%), Refere	enced t	o phase 1:\

Splits and Phases: 13: I St & 5th St

← ø1	♦ 02
20 s	30 \$

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Lane Configurations Ideal Flow (vphpl) 1900		۶	-	*	*	-	*	4	†	/	-	↓	1
Ideal Flow (vphpl) 1900 <th>Movement</th> <th>EBL</th> <th>EBT</th> <th>EBR</th> <th>WBL</th> <th>WBT</th> <th>WBR</th> <th>NBL</th> <th>NBT</th> <th>NBR</th> <th>SBL</th> <th>SBT</th> <th>SBR</th>	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost time (s) Lane Uil. Factor O.91 O.86 O.86 O.86 Frpb, ped/bikes O.99 O.97 O.97 O.97 O.97 O.97 O.97 O.97	The second secon		Nacian Nacian 2000				wal become server three						
Lane Util. Factor		1900	1900	1900	1900		1900			1900	1900	1900	1900
Frpb, ped/bikes 0.99 1.00 1.00 1.00 Flpb, ped/bikes 1.00 1.00 1.00 1.00 Flt Frt 0.97 1.00 1.00 1.00 Std. Flow (prot) 4905 1522 4806 Flt Frotected 1.00 0.95 1.00 Satd. Flow (prom) 4905 1522 4806 Flt Fermitted 1.00 0.95 1.00 Satd. Flow (perm) 4905 1522 4806 Flt Flt Fermitted 1.00 0.05 1.00 Satd. Flow (perm) 4905 1522 4806 Flt Fl	Total Lost time (s)												
Fipb, ped/bikes													
Frt	Frpb, ped/bikes					0.99		1.00					
Fit Protected	Flpb, ped/bikes					1.00		1.00	1.00				
Satd. Flow (prot)	Frt					0.97		1.00	1.00				
Fit Permitted 1.00	Flt Protected					1.00		0.95	1.00				
Satd. Flow (perm)	Satd. Flow (prot)					4905		1522	4806				
Volume (vph) 0 0 0 628 128 242 1214 0 0 0 Peak-hour factor, PHF 1.00 <t< td=""><td>FIt Permitted</td><td></td><td></td><td></td><td></td><td>1.00</td><td></td><td>0.95</td><td>1.00</td><td></td><td></td><td></td><td></td></t<>	FIt Permitted					1.00		0.95	1.00				
Volume (vph) 0 0 0 628 128 242 1214 0 0 0 Peak-hour factor, PHF 1.00 <t< td=""><td>Satd. Flow (perm)</td><td></td><td></td><td></td><td></td><td>4905</td><td></td><td>1522</td><td>4806</td><td></td><td></td><td></td><td></td></t<>	Satd. Flow (perm)					4905		1522	4806				
Peak-hour factor, PHF 1.00 0		0	0	0	0	628	128	242	1214	0	0	0	0
Adj. Flow (vph)		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RTOR Reduction (vph) 0 0 0 12 0 89 0						628	128	242	1214	0	0		0
Lane Group Flow (vph) 0 0 0 744 0 153 1214 0 0 0 Confl. Peds. (#/hr) 60 Turn Type Split Protected Phases 4 2 2 Permitted Phases Actuated Green, G (s) 21.5 21.5 21.5 Effective Green, g (s) 21.0 21.0 21.0 Actuated g/C Ratio 0.42 0.42 0.42 Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 2060 639 2019 v/s Ratio Prot 0.15 0.10 0.25 v/s Ratio Perm v/c Ratio 0.36 0.24 0.60 Uniform Delay, d1 9.9 9.4 11.3 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 0.5 0.9 1.3 Delay (s) 10.4 10.2 12.6 Level of Service B B B B Approach Delay (s) 0.0 10.4 12.2 0.0 Approach LOS A B B B A Intersection Summary HCM Average Control Delay 11.6 HCM Level of Service B HCM Volume to Capacity ratio 0.48 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 45.9% ICU Level of Service A		0			0	12	0	89	0	0	0	0	0
Confl. Peds. (#/hr) 60 Turn Type Split Protected Phases 4 2 2 Permitted Phases Actuated Green, G (s) 21.5 21.5 21.5 25.5 Actuated Green, g (s) 21.0 22.0 20.0 22.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0										0	0		0
Turn Type													
Protected Phases								Split					
Permitted Phases						4			2				
Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio Actuated g/C Ratio O.42 O.42 Clearance Time (s) Index a state of the state of	Permitted Phases												
Effective Green, g (s) Actuated g/C Ratio O.42 O.42 O.42 Clearance Time (s) 3.5 S.5 Lane Grp Cap (vph) V/s Ratio Prot V/s Ratio Perm V/c Ratio O.36 O.36 O.24 O.60 Uniform Delay, d1 Progression Factor Incremental Delay, d2 Delay (s) Level of Service B Approach Delay (s) Intersection Summary HCM Average Control Delay Actuated Cycle Length (s) Intersection Capacity Utilization Actuated Cycle Length (s) Intersection Service A Solution O.42 O.40 O.40 O.40 O.41 O.41 O.42 O.42 O.42 O.42 O.42 O.42 O.40 O.						21.5		21.5	21.5				
Actuated g/C Ratio Clearance Time (s) Lane Grp Cap (vph) v/s Ratio Prot v/s Ratio Perm v/c Ratio Uniform Delay, d1 Progression Factor Incremental Delay, d2 Level of Service Approach LOS Approach LOS Actuated Gy/C Ratio 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.42 0.50 0.10 0.025 0.10 0.025 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.06 0.07 0.00													
Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 2060 639 2019 v/s Ratio Prot c0.15 0.10 c0.25 v/s Ratio Perm v/c Ratio 0.36 0.24 0.60 Uniform Delay, d1 9.9 9.4 11.3 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 0.5 0.9 1.3 Delay (s) 10.4 10.2 12.6 Level of Service B B B Approach Delay (s) 0.0 10.4 12.2 0.0 Approach LOS A B B A Intersection Summary HCM Average Control Delay 11.6 HCM Level of Service B HCM Volume to Capacity ratio 0.48 A A B 8.0 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 B Intersection Capacity Utilization 45.9% ICU Level of Service A	 首先公司及及股份的股份的股份的股份的股份的股份的股份的股份的股份的股份的股份的股份。 												
Lane Grp Cap (vph) 2060 639 2019 v/s Ratio Prot c0.15 0.10 c0.25 v/s Ratio Perm c0.15 0.10 c0.25 v/s Ratio Perm c0.15 0.24 0.60 Uniform Delay, d1 9.9 9.4 11.3 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 0.5 0.9 1.3 Delay (s) 10.4 10.2 12.6 Level of Service B B B Approach Delay (s) 0.0 10.4 12.2 0.0 Approach LOS A B B A Intersection Summary HCM Average Control Delay 11.6 HCM Level of Service B HCM Volume to Capacity ratio 0.48 A A B 8.0 Intersection Capacity Utilization 45.9% ICU Level of Service A A	and the second s												
v/s Ratio Prot c0.15 0.10 c0.25 v/s Ratio Perm v/c Ratio 0.36 0.24 0.60 Uniform Delay, d1 9.9 9.4 11.3 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 0.5 0.9 1.3 Delay (s) 10.4 10.2 12.6 Level of Service B B B Approach Delay (s) 0.0 10.4 12.2 0.0 Approach LOS A B B B A Intersection Summary HCM Average Control Delay 11.6 HCM Level of Service B HCM Volume to Capacity ratio 0.48 A A B B Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 B Intersection Capacity Utilization 45.9% ICU Level of Service A						CONTRACTOR DESCRIPTION OF THE PERSON OF THE							
v/s Ratio Perm v/c Ratio 0.36 0.24 0.60 Uniform Delay, d1 9.9 9.4 11.3 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 0.5 0.9 1.3 Delay (s) 10.4 10.2 12.6 Level of Service B B B Approach Delay (s) 0.0 10.4 12.2 0.0 Approach LOS A B B A Intersection Summary B HCM Level of Service B HCM Volume to Capacity ratio 0.48 A Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 45.9% ICU Level of Service A													
v/c Ratio 0.36 0.24 0.60 Uniform Delay, d1 9.9 9.4 11.3 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 0.5 0.9 1.3 Delay (s) 10.4 10.2 12.6 Level of Service B B B Approach Delay (s) 0.0 10.4 12.2 0.0 Approach LOS A B B A Intersection Summary B B A HCM Average Control Delay 11.6 HCM Level of Service B HCM Volume to Capacity ratio 0.48 A A Sum of lost time (s) 8.0 Intersection Capacity Utilization 45.9% ICU Level of Service A A						00.10		0.10	UU.LU				
Uniform Delay, d1 9.9 9.4 11.3 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 0.5 0.9 1.3 Delay (s) 10.4 10.2 12.6 Level of Service B B B Approach Delay (s) 0.0 10.4 12.2 0.0 Approach LOS A B B A Intersection Summary HCM Average Control Delay 11.6 HCM Level of Service B HCM Volume to Capacity ratio 0.48 A Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 45.9% ICU Level of Service A						0.36		0.24	0.60				
Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 0.5 0.9 1.3 Delay (s) 10.4 10.2 12.6 Level of Service B B B Approach Delay (s) 0.0 10.4 12.2 0.0 Approach LOS A B B A Intersection Summary B HCM Level of Service B HCM Volume to Capacity ratio 0.48 A Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 45.9% ICU Level of Service A													
Incremental Delay, d2													
Delay (s) 10.4 10.2 12.6 Level of Service B B B Approach Delay (s) 0.0 10.4 12.2 0.0 Approach LOS A B B A Intersection Summary B HCM Level of Service B HCM Volume to Capacity ratio 0.48 B A Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 45.9% ICU Level of Service A													
Level of Service Approach Delay (s) Approach LOS A B B B Approach LOS A B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) Intersection Capacity Utilization A B B B B A B B B B B B B	The transfer and a property of the court of												
Approach Delay (s) 0.0 10.4 12.2 0.0 Approach LOS A B B A Intersection Summary HCM Average Control Delay 11.6 HCM Level of Service B HCM Volume to Capacity ratio 0.48 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 45.9% ICU Level of Service A	Stream and the Alexandrian Company of the Alexandrian Company of the Alexandrian Company of the												
Approach LOS A B B A Intersection Summary HCM Average Control Delay 11.6 HCM Level of Service B HCM Volume to Capacity ratio 0.48 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 45.9% ICU Level of Service A			0.0					ں				0.0	
Intersection Summary HCM Average Control Delay 11.6 HCM Level of Service B HCM Volume to Capacity ratio 0.48 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 45.9% ICU Level of Service A													
HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) Intersection Capacity Utilization 11.6 HCM Level of Service B Sum of lost time (s) 8.0 ICU Level of Service A			,									,	
HCM Volume to Capacity ratio0.48Actuated Cycle Length (s)50.0Sum of lost time (s)8.0Intersection Capacity Utilization45.9%ICU Level of ServiceA		Delav		11.6		HCM Le	vel of S	ervice		В			
Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 45.9% ICU Level of Service A										_			
Intersection Capacity Utilization 45.9% ICU Level of Service A					anter ethinerist	Sum of	lost time	e (s)		8.0			
Analysis Period (min) 15	Analysis Period (min)			15.076						**************************************			
c Critical Lane Group				, 5									



Phase Number 1997	2	4	
Movement	NBTL	WBT	
Lead/Lag			의 문학 시간 안전시다고 돌팔되는 이 뭐는 이번 말을 보이다고 .
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	the second second		
Minimum Split (s)	21.5	21.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	en de la companya de La companya de la co
Minimum Initial (s)	4	4	
Vehicle Extension (s)		3	An existence of the second and antique the second of th
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	en. Die gewone der Grand von de
Time To Reduce (s)	0	0	
Walk Time (s)	10	10 8	
Flash Dont Walk (s)	8 Yes	Yes	(1882) - 프로마이트 (1987) - 1922 - 1935년 - 1932, 1935년 - 1937 - 1932년 (1932) - 1932년 (1932) -
Dual Entry Inhibit Max	Yes	Yes	
Start Time (s)	48.5	23.5	
End Time (s)	23.5	48.5	The state of the s
Yield/Force Off (s)	20.0	45	
Yield/Force Off 170(s)	12	37	医多种性 医电影 医电影 医性神经 电电影 医乳头 医重新强化 医二氏管
Local Start Time (s)	3.5	28.5	
Local Yield (s)	25	0	kalang pagamenan berselah perselah berselah diberselah
Local Yield 170(s)	17	42	
	• • • • • • • • • • • • • • • • • • • •		

Intersection Summary

Cycle Length 50

Control Type Pretimed

Control Type Pretimed Natural Cycle 45

Offset: 45 (90%), Referenced to phase 4:WBT, Start of Yellow

Splits and Phases: 14: L St & 16th St

N ø2	a 4
25 c	25 · 1 · 1 · 1 · 1 · 1 · 1 · 1 · 1 · 1 ·

1	:	Q	St	&	3rd	St

	۶	-	*	•	4	4	4	†	~	1	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4111									ተተኩ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.99									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.98									1.00	
FIt Protected		1.00									0.98	
Satd. Flow (prot)		6237									5005	
FIt Permitted		1.00									0.98	
Satd. Flow (perm)		6237									5005	
Volume (vph)	0	495	79	0	0	0	0	0	0	206	436	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	495	79	0	0	0	0	0	0	206	436	0
RTOR Reduction (vph)	0	36	0	0	0	0	0	0	0	0	144	0
Lane Group Flow (vph)	0	538	0	0	0	0	0	0	0	0	498	0
Confl. Peds. (#/hr)			60							60		
Parking (#/hr)										0		0
Turn Type										Split		
Protected Phases		2								1	1	
Permitted Phases												
Actuated Green, G (s)		27.5									15.5	
Effective Green, g (s)		27.0									15.0	
Actuated g/C Ratio		0.54									0.30	
Clearance Time (s)		3.5									3.5	
Lane Grp Cap (vph)		3368									1502	
v/s Ratio Prot		c0.09									c0.10	
v/s Ratio Perm												
v/c Ratio		0.16									0.33	
Uniform Delay, d1		5.8									13.6	
Progression Factor		1.00									1.30	
Incremental Delay, d2		0.1									0.2	
Delay (s)		5.9									17.9	
Level of Service		A									В	
Approach Delay (s)		5.9			0.0			0.0			17.9	
Approach LOS		A			Α			Α			В	
Intersection Summary								- 10 J				
HCM Average Control I	Delay		12.2		HCM Le	vel of S	ervice		В			
HCM Volume to Capac			0.22									
Actuated Cycle Length			50.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity U		1	41.8%			el of Se			Α			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	SBTL	EBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	19	31	
Maximum Split (%)	38.0%	62.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4		
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes		
Inhibit Max	Yes		
Start Time (s)	22.5		
End Time (s)	41.5		
Yield/Force Off (s)	38		
Yield/Force Off 170(s)	30		
Local Start Time (s)	3.5		
Local Yield (s)	19		
Local Yield 170(s)	11	42	

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 19 (38%), Referenced to phase 2:EBT, Start of Yellow

Splits and Phases: 1: Q St & 3rd St

№ ø1	→ ø2
19 s	31 s

3/1/2005 Fehr & Peers Associates, Inc.

	۶	-	*	1	4	•	1	†	/	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተኩ						↑ ↑	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	4.0
Lane Util. Factor					0.91						0.91	0.91
Frpb, ped/bikes					1.00						0.97	0.93
Flpb, ped/bikes					1.00						1.00	1.00
Frt					1.00						0.94	0.85
FIt Protected					1.00						1.00	1.00
Satd. Flow (prot)					4899						2942	1205
FIt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					4899						2942	1205
Volume (vph)	0	0	0	137	1867	0	Ö	0	0	0	505	673
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	137	1867	0	0	0	0	0	505	673
RTOR Reduction (vph)	0	0	0	0	17	0	0	0	0	0	6	6
Lane Group Flow (vph)	0	Ö	ő	0	1987	Ö	Ö	Ö	Ö	Ö	835	331
Confl. Peds. (#/hr)				60	1001	•			is valedy s is	******* * **	990	60
Parking (#/hr)				0	0						0	0
Turn Type				Split	<u> </u>							Perm
Protected Phases				3piit 2	2						1	r Cilli
Permitted Phases				4	_							1
Actuated Green, G (s)					27.5						15.5	15.5
Effective Green, g (s)					27.0						15.0	15.0
					0.54						0.30	0.30
Actuated g/C Ratio					3.5						3.5	3.5
Clearance Time (s)	ti kasa ili kata	sur etterretak er	serve te Navel o				and the state of	es in Samely and		Station of the		
Lane Grp Cap (vph)					2645						883	362
v/s Ratio Prot					c0.41						c0.28	
v/s Ratio Perm											2.25	0.27
v/c Ratio					0.75						0.95	0.91
Uniform Delay, d1					8.9						17.1	16.9
Progression Factor					1.00						1.00	1.00
Incremental Delay, d2					2.0						19.6	29.8
Delay (s)					10.9						36.7	46.6
Level of Service					В						D	D
Approach Delay (s)		0.0			10.9			0.0			39.5	
Approach LOS		Α			В			Α			D	
Intersection Summary	400		feet 1									
HCM Valume to Canadi			21.5	I	HCM Le	vel of S	ervice		С			
HCM Volume to Capaci			0.82	Salt as a Sal	o		. /_\					
Actuated Cycle Length			50.0			lost time			8.0			
Intersection Capacity U	uuzatior	<mark>)</mark> Säelisensin	77.8%	ara Balan L	ICU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	SBT	WBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	19	31	
Maximum Split (%)	38.0%	62.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	40.5	9.5	
End Time (s)	9.5	40.5	
Yield/Force Off (s)	6	37	
Yield/Force Off 170(s)	48	29	
Local Start Time (s)	3.5	22.5	
Local Yield (s)	19	0	
Local Yield 170(s)	11	42	
	NATIONAL CONTRACTOR OF THE PROPERTY OF THE PRO		

Cycle Length 50
Control Type Pretimed
Natural Cycle 55

Offset: 37 (74%), Referenced to phase 2:WBTL, Start of Yellow

Splits and Phases: 2: P St & 3rd St

↓ ø1	▼ ø2
19 s	

3/1/2005 Fehr & Peers Associates, Inc.

	→	•	-	↓	\	>		
Movement	EBT	EBR	SBL	SBT	SEL	SER		
Lane Configurations	f _è			ተተኩ	ሻሻ			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0			4.0	4.0			
Lane Util. Factor	1.00			0.91	0.97			
Frpb, ped/bikes	0.98			1.00	1.00			
Flpb, ped/bikes	1.00			1.00	1.00			
Frt	0.97			1.00	0.91			
Flt Protected	1.00			0.99	0.98			
Satd. Flow (prot)	1777			5051	3235			
FIt Permitted	1.00			0.99	0.98			
Satd. Flow (perm)	1777			5051	3235			
Volume (vph)	81	19	148	939	154	204		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00		
Adj. Flow (vph)	81	19	148	939	154	204		
RTOR Reduction (vph)	12	0	0	30	0	0		
Lane Group Flow (vph)	88	0	0	1057	358	0		
Confl. Peds. (#/hr)		60	60					
Parking (#/hr)			0					
Turn Type			Split					
Protected Phases	6		4	4	5			
Permitted Phases								
Actuated Green, G (s)	12.5			32.5	14.5			
Effective Green, g (s)	12.0			32.0	14.0			
Actuated g/C Ratio	0.17			0.46	0.20			
Clearance Time (s)	3.5			3.5	3.5			
Lane Grp Cap (vph)	305			2309	647			
v/s Ratio Prot	c0.05			c0.21	c0.11			
v/s Ratio Perm								
v/c Ratio	0.29			0.46	0.55			
Uniform Delay, d1	25.3			13.0	25.2			
Progression Factor	1.00			0.65	1.00			
Incremental Delay, d2	2.4			0.6	3.4			
Delay (s)	27.6			9.0	28.6			
Level of Service	С			Α	С			
Approach Delay (s)	27.6			9.0	28.6			
Approach LOS	С			Α	С			
Intersection Summary				N.				
HCM Average Control [14.8		HCM Le	vel of Service	В	
HCM Volume to Capaci			0.45		<u>es</u> tropological constant	and the many of the second	erandas eran	
Actuated Cycle Length			70.0			lost time (s)	12.0	
Intersection Capacity U	tilizatior	1	52.4%		ICU Lev	el of Service	Α	
Analysis Period (min)			15					
c Critical Lane Group								

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Phase Number	2	4	5	6	SHEETER
Movement	Ped	SBTL	SEL	EBT	
Lead/Lag			Lead	Lag	
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	34	36	18	16	
Maximum Split (%)	48.6%	51.4%	25.7%	22.9%	
Minimum Split (s)	34	36	7.5	16	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	0	0	
Minimum Initial (s)	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s)	0	0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)	19.5	23.5		4.5	
Flash Dont Walk (s)	11	9		8	
Dual Entry	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	
Start Time (s)	12.5	46.5	12.5	30.5	
End Time (s)	46.5	12.5	30.5	46.5	
Yield/Force Off (s)	43	9	27	43	
Yield/Force Off 170(s)	32	0	27	35	
Local Start Time (s)	3.5	37.5	3.5	21.5	
Local Yield (s)	34	0	18	34	
Local Yield 170(s)	23	61	18	26	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

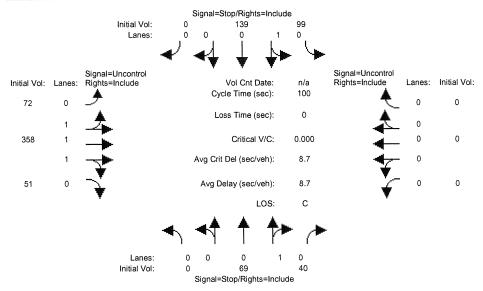
Offset: 9 (13%), Referenced to phase 4:SBTL, Start of Yellow

Splits and Phases: 3: N St & 3rd St

## ø2 34 s		▶ ø4
34 s		36 s
→ ø5	> ø6	
18 s	16 s	

Level Of Service Computation Report 2000 HCM Unsignalized (Future Volume Alternative) Existing PM

Intersection #4: N St./4th St.



Street Name:	: 4th St North Bound South Bound							N St East Bound West Bound					
Movement:		· T				- R		T			- T		
Volume Module								0.50	- 4				
Base Vol:	0	69	40	99	139	0	72	358	51	0	0	0	
_	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Initial Bse:	0	69	40	99	139	0	72	358	51	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:	0	69	40	99	139	0	72	358	51	0	0	0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Volume:	0	69	40	99	139	0	72	358	51	0	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Final Vol.:	0	69	40	99	139	0	72	358	51	0	0	0	
Critical Gap	Modu]	Le:											
Critical Gp:			6.2	7.1	6.5	xxxxx	4.1	XXXX	XXXXX	XXXXX	XXXX	XXXXX	
FollowUpTim::			3.3	3.5	4.0	xxxxx			XXXXX				
Capacity Modu	ıle:					,	,						
Cnflict Vol:		543	145	313	568	xxxxx	15	xxxx	xxxxx	XXXX	xxxx	xxxxx	
Potent Cap.:			908	644	435	xxxxx	1616	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Move Cap.:			908	512		xxxxx							
Volume/Cap:						XXXX			XXXX			XXXX	
Level Of Ser	1			1 1		ı	1			1 1			
Oueue:				xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Stopped Del:									XXXXX				
LOS by Move:				*		*	Α.	*	*	*	*	*	
Movement:			- RT		- LTR				- RT			<u> —</u> рт	
Shared Cap.:						XXXXX			XXXXX			XXXXX	
						XXXXX			XXXXX				
SharedQueue:													
Shrd StpDel:					XXXX *	XXXXX *		XXXX *	*****	*		XXXXX *	
Shared LOS:			В	С		^	A		^			^	
ApproachDel:		13.6			21.9		X	XXXXX *		X.	XXXXX *		
ApproachLOS:		В			С			*			*		

			-	•			,	•	•		¥	-
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተቡ					.,,	ተተ _ጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.98				
Fit Protected		0.99						1.00				
Satd. Flow (prot)		5049						4934				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5049						4934				
Volume (vph)	72	427	0	0	0	0	0	710	124	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	72	427	0	0	0	0	0	710	124	0	0	0
RTOR Reduction (vph)	0	33	0	0	0	0	0	35	0	0	0	0
Lane Group Flow (vph)	0	466	0	Ö	0	0	Ō	799	0	Ō	0	0
Confl. Peds. (#/hr)	60				an and the				60	n editar Ter		i fijika de da y
Parking (#/hr)	0		0						0			
Turn Type	Split										N. S.	
Protected Phases	1	1						2				
Permitted Phases												
Actuated Green, G (s)		31.5						31.5				
Effective Green, g (s)		31.0						31.0				
Actuated g/C Ratio		0.44						0.44				
Clearance Time (s)		3.5						3.5				
Lane Grp Cap (vph)		2236	Marine file					2185				
v/s Ratio Prot		c0.09						c0.16				
v/s Ratio Perm												
v/c Ratio		0.21						0.37				
Uniform Delay, d1		12.0						13.0				
Progression Factor		1.26						1.00				
Incremental Delay, d2		0.2						0.5				
Delay (s)		15.3						13.4				
Level of Service		В						В				
Approach Delay (s)		15.3			0.0			13.4			0.0	
Approach LOS		В			A			В			Α	
Intersection Summary												
HCM Average Control D			14.1		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.29									
Actuated Cycle Length (70.0			lost time			8.0			
Intersection Capacity Ut	tilization	1	42.2%	Ī	CU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									



Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	35	35	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	34.5	34.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	22	22	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	65.5		
End Time (s)	30.5		
Yield/Force Off (s)	27	62	
Yield/Force Off 170(s)	18		
Local Start Time (s)	38.5		
Local Yield (s)	0	35	
Local Yield 170(s)	61	26	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 27 (39%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 5: N St & 5th St

♣ ø1	↑ ø2
35 s	35 s

	۶	-	*	•	4	*	1	†	<i>></i>	-		1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተጐ		آلا	ተተ						नाक	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.91		1.00	0.95						0.86	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.99		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		5016		1770	3539						6352	
Flt Permitted		1.00		0.95	1.00						1.00	
Satd. Flow (perm)		5016		1770	3539						6352	
Volume (vph)	0	512	31	174	445	0	0	0	0	59	902	39
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	512	31	174	445	0	0	0	0	59	902	39
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	8	С
Lane Group Flow (vph)	0	534	0	174	445	0	0	0	0	0	992	C
Confl. Peds. (#/hr)			60									
Parking (#/hr)										0		
Turn Type				Prot				<u> </u>		Split		
Protected Phases		6		5	2					· 4	4	
Permitted Phases												
Actuated Green, G (s)		16.0		16.5	36.0						25.5	
Effective Green, g (s)		15.5		16.0	35.5						26.5	
Actuated g/C Ratio		0.22		0.23	0.51						0.38	
Clearance Time (s)		3.5		3.5	3.5						5.0	
Lane Grp Cap (vph)		1111		405	1795						2405	
v/s Ratio Prot		c0.11		c0.10	0.13						c0.16	
v/s Ratio Perm												
v/c Ratio		0.48		0.43	0.25						0.41	
Uniform Delay, d1		23.7		23.1	9.7						16.0	
Progression Factor		1.00		0.66	1.07						0.64	
Incremental Delay, d2		1.5		3.3	0.3						0.4	
Delay (s)		25.2		18.6	10.7						10.6	
Level of Service		С		В	В						В	
Approach Delay (s)		25.2			12.9			0.0			10.6	
Approach LOS		С			В			Α			В	
Intersection Summary												
HCM Average Control D			15.0		HCM Le	evel of Se	ervice		В			
HCM Volume to Capaci			0.44									
Actuated Cycle Length			70.0			lost time			12.0			
Intersection Capacity Ut	tilization	1	47.6%	1	ICU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	2	4	5	6	
Movement	WBT	SBTL	WBL	EBT	
Lead/Lag			Lead	Lag	
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	39.5	30.5	20	19.5	
Maximum Split (%)	56.4%	43.6%	28.6%	27.9%	
Minimum Split (s)	39.5	30.5	7.5	19.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	1.5	0	0	
Minimum Initial (s)	4	4	4		
Vehicle Extension (s)	3	3	3	3	
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s)	0	0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)	26	20.5		6	
Flash Dont Walk (s)	10	5		10	
Dual Entry	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	
Start Time (s)	18.5	58	18.5	38.5	
End Time (s)	58	18.5	38.5	58	
Yield/Force Off (s)	54.5	13.5	35	54.5	
Yield/Force Off 170(s)	44.5	8.5	35	44.5	
Local Start Time (s)	53.5	23	53.5	3.5	
Local Yield (s)	19.5	48.5	0	19.5	
Local Yield 170(s)	9.5	43.5	0	9.5	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 35 (50%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow

Splits and Phases: 6: Capitol Mall & 3rd St

← ø2		↓ ø4						
39.5 %		30.5 s						
√ ø5	→ ø6							
20 s	19.5 \$							

-	•	-	•	•	4-		4	†	1	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		414	7		414			4			4	
Ideal Flow (vphpl)	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	All and the second of the second
Lane Util. Factor		0.95	1.00		0.91			1.00			1.00	
Frpb, ped/bikes		1.00	0.87		0.99			0.99			0.99	
Flpb, ped/bikes		1.00	1.00		1.00			0.98			0.99	
Frt		1.00	0.85		0.99			0.98			0.99	
Flt Protected		1.00	1.00		1.00			0.98			0.99	
Satd. Flow (prot)		3539	1380		5016			1573			1612	
Flt Permitted		1.00	1.00		1.00			0.86			0.90	
Satd. Flow (perm)		3539	1380		5016			1379			1467	
Volume (vph)	0	546	25	0	545	28	63	110	25	41	120	11
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	546	25	0	545	28	63	110	25	41	120	11
RTOR Reduction (vph)	0	0	12	0	8	0	0	7	0	0	3	0
Lane Group Flow (vph)	0	546	13	Ö	565	Ŏ	Ö	191	ő	Ŏ	169	Õ
Confl. Peds. (#/hr)	60	0.10	60	60		60	60		60	60		60
Parking (#/hr)							Ő	0	0	Ő	0	0
Turn Type	Perm		Perm	Perm			Perm			Perm		WV 40.0. 0000 B
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)		38.0	38.0		38.0			23.5			23.5	
Effective Green, g (s)		37.5	37.5		37.5			24.5			24.5	
Actuated g/C Ratio		0.54	0.54		0.54			0.35			0.35	
Clearance Time (s)		3.5	3.5		3.5			5.0			5.0	
Lane Grp Cap (vph)		1896	739	With the same	2687		1971,000	483			513	Transfer in
v/s Ratio Prot		c0.15			0.11							
v/s Ratio Perm		00.10	0.01		0			c0.14			0.12	
v/c Ratio		0.29	0.02		0.21			0.40			0.33	
Uniform Delay, d1		8.9	7.6		8.5			17.2			16.7	
Progression Factor		1.21	1.75		0.37			0.86			0.97	
Incremental Delay, d2		0.3	0.0		0.2			2.4			1.6	
Delay (s)		11.1	13.4		3.3			17.2			17.8	
Level of Service		В	10.4		0.0 A			<u>-</u>			В	
Approach Delay (s)		11.2			3.3			17.2			17.8	
Approach LOS		11.2 B			Α			В			В	
Intersection Summary												
HCM Average Control [9.8		HCM Le	evel of S	ervice		Α			
HCM Volume to Capaci			0.33									
Actuated Cycle Length			70.0			lost time			8.0			
Intersection Capacity U	tilizatior	1	54.2%	I	CU Lev	el of Se	rvice		Α			
Analysis Period (min) c Critical Lane Group			15									



Phase Number	2	4	
Movement	EBWB	NBSB	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	41.5	28.5	
Maximum Split (%)	59.3%	40.7%	
Minimum Split (s)	22.5	20	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	10	10	
Dual Entry	Yes	Yes	
Inhibit Max	Yes		
Start Time (s)	59		
End Time (s)	30.5	er of high to the Welling to	
Yield/Force Off (s)	27		
Yield/Force Off 170(s)	17		
Local Start Time (s)	32		
Local Yield (s)	0	27	
Local Yield 170(s)	60	17	
Intersection Summary			

Cycle Length 70
Control Type Pretimed
Natural Cycle 45

Offset: 27 (39%), Referenced to phase 2:EBWB, Start of Yellow

Splits and Phases: 7: Capitol Mall & 4th St

⇒ ø2	Ø4
41.5 %	28.5 s

	ᄼ	-	*	•	4	*		1	1	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	14.54	ተተ			<u>ተ</u> ተጉ		77	ተተጐ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	0.97	0.95			0.91		0.97	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.99				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			4916		3433	4999				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			4916		3433	4999				
Volume (vph)	340	272	0	0	329	55	244	626	43	0	0	(
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	340	272	0	0	329	55	244	626	43	0	0	(
RTOR Reduction (vph)	0	0	0	0	33	0	0	11	0	0	0	(
Lane Group Flow (vph)	340	272	0	0	351	0	244	658	ő	ŏ	ő	(
Confl. Peds. (#/hr)	0.0		G		001	60		000	60	•		man in ing
Turn Type	Prot						Split					
Protected Phases	1	6			2		8	8				
Permitted Phases												
Actuated Green, G (s)	14.5	36.5			18.5		25.0	25.0				
Effective Green, g (s)	14.0	36.0			18.0		26.0	26.0				
Actuated g/C Ratio	0.20	0.51			0.26		0.37	0.37				
Clearance Time (s)	3.5	3.5			3.5		5.0	5.0				
Lane Grp Cap (vph)	687	1820			1264		1275	1857				
v/s Ratio Prot	c0.10	0.08			c0.07		0.07	c0.13				
v/s Ratio Perm	CO. 10	0.00			00.07		0.01	00.10				
v/c Ratio	0.49	0.15			0.28		0.19	0.35				
Uniform Delay, d1	24.9	8.9			20.8		14.9	15.9				
Progression Factor	0.89	0.26			1.00		0.52	0.49				
Incremental Delay, d2	2.5	0.20			0.5		0.32	0.45				
Delay (s)	24.5	2.5			21.3		8.0	8.3				
Level of Service	24.3 C	2.5 A			21.3 C		0.0 A	0.5 A				
	J	14.7			21.3		Α.	8.2			0.0	
Approach Delay (s) Approach LOS		14. <i>1</i> B			21.3 C			0.2 A			0.0 A	
Intersection Summary		_										
HCM Average Control [Delav		13.0		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.36				in dila					
Actuated Cycle Length			70.0		Sum of	lost time	e (s)		12.0			
Intersection Capacity U		i Barkania	47.2%			el of Se			Α			
Analysis Period (min)	245EFR F 63	A Marie Marie	15		ा स्थापन स्थापन	n, 96 7 7 7 7	uga a serson a di		100000			
c Critical Lane Group												



Phase Number	1	2	6	8		
Movement	EBL	WBT	EBT	NBTL		
Lead/Lag	Lag	Lead				
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max		
Maximum Split (s)	18	22	40	30		
The contract of the contract o			57.1%			
Minimum Split (s)	7.5	20.5	20.5	17		
Yellow Time (s)	3.5	3.5	3.5	3.5		
All-Red Time (s)	0	0	0	1.5		
Minimum Initial (s)	4	4		4		
Vehicle Extension (s)	3	3	3	3		
Minimum Gap (s)	3	3				
Time Before Reduce (s)		0	0	0		
Time To Reduce (s)	0	0	0	0		
Walk Time (s)		7	7	7		
Flash Dont Walk (s)		10	10	5		
Dual Entry	No	Yes		Yes		
Inhibit Max	Yes	Yes				
Start Time (s)	20.5					
End Time (s)	38.5		병원 경기 기가 가장 없다고 있다.			
Yield/Force Off (s)	35			63.5		
Yield/Force Off 170(s)	35					
Local Start Time (s)	55.5					
Local Yield (s)	0			28.5		
Local Yield 170(s)	0	42	60	23.5		

Cycle Length 70
Control Type Pretimed
Natural Cycle 50

Offset: 35 (50%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow

Splits and Phases: 8: Capitol Mall & 5th St

← ø2	ø1	↑↑ ₀8	
22 s	18 s	30 s	
→ ø6			
40 s			

	•	4	*_	•	Į.	4	w	
Movement	WBL	WBT	WBR 1	WBR2	SBT	SBR	SBR2	
Lane Configurations	ሻ	44	7*	7 7	ተተተ			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.95	0.91	0.95	1.00	0.91			
Frt	1.00	0.93	0.85	0.85	0.95			
Flt Protected	0.95	1.00	1.00	1.00	1.00			
Satd. Flow (prot)	1681	1580	1504	1583	4806			
Flt Permitted	0.95	1.00	1.00	1.00	1.00			
Satd. Flow (perm)	1681	1580	1504	1583	4806			
Volume (vph)	474	408	1000	143	525	257	46	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	474	408	1000	143	525	257	46	
RTOR Reduction (vph)	17	0	0	49	9	0	0	
Lane Group Flow (vph)	457	746	662	94	819	0	0	
Turn Type o	custom	Prot	C	custom				
Protected Phases		2			4			
Permitted Phases	2		2	2				
Actuated Green, G (s)	46.5	46.5	46.5	46.5	16.5			
Effective Green, g (s)	46.0	46.0	46.0	46.0	16.0			
Actuated g/C Ratio	0.66	0.66	0.66	0.66	0.23			
Clearance Time (s)	3.5	3.5	3.5	3.5	3.5			
Lane Grp Cap (vph)	1105	1038	988	1040	1099			
v/s Ratio Prot		c0.47			c0.17			
v/s Ratio Perm	0.27		0.44	0.06				
v/c Ratio	0.41	0.72	0.67	0.09	0.74			
Uniform Delay, d1	5.6	7.8	7.4	4.4	25.1			
Progression Factor	0.65	0.69	0.67	0.45	1.00			
Incremental Delay, d2	1.1	4.0	3.4	0.2	4.6			
Delay (s)	4.7	9.4	8.3	2.1	29.7			
Level of Service	Α	Α	Α	Α	С			
Approach Delay (s)		7.4			29.7			
Approach LOS		Α			С			
Intersection Summary							100	
HCM Average Control [Delay		13.9	1	HCM Le	vel of S	ervice	В
HCM Volume to Capaci	ity ratio		0.73					
Actuated Cycle Length	(s)		70.0		Sum of	ost time	e (s)	8.0
Intersection Capacity U		1	64.9%	l	CU Lev	el of Se	rvice	C
Analysis Period (min)			15					
c Critical Lane Group								



Phase Number	2	4	
Movement	WBTL	SBT	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	50	20	
Maximum Split (%)	71.4%	28.6%	
Minimum Split (s)	7.5	20	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4 3	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)		8.5	
Flash Dont Walk (s)		8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	66.5	46.5	
End Time (s)	46.5	66.5	
Yield/Force Off (s)	43	63	
Yield/Force Off 170(s)	43	55	
Local Start Time (s)	3.5	53.5	
Local Yield (s)	50	0	
Local Yield 170(s)	50	62	

Cycle Length 70
Control Type Pretimed
Natural Cycle 60

Offset: 63 (90%), Referenced to phase 4:SBT, Start of Yellow

Splits and Phases: 9: L St & 3rd St

▼ 0 2	↓ ø4
50 s	20 s

	۶	-	\rightarrow	•	-	•	4	†	<i>></i>	-	ļ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					†††}		ħ	ተተተ				77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		1.00	0.91				0.88
Frpb, ped/bikes					1.00		1.00	1.00				0.93
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6291		1770	5085				2585
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6291		1770	5085				2585
Volume (vph)	0	0	0	0	1484	155	320	701	0	0	0	130
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	1484	155	320	701	0	0	0	130
RTOR Reduction (vph)	0	0	0	0	19	0	25	0	0	0	0	33
Lane Group Flow (vph)	0	0	0	0	1620	0	295	701	0	0	0	97
Confl. Peds. (#/hr)	o a sija os a nn					60	60	and the second		and the control of the second	· · · · · · ·	60
Turn Type							Split				(custom
Protected Phases					2		1	1				7 5 7 7 7 7 7 7 7 7 7 7 7
Permitted Phases												1
Actuated Green, G (s)					40.0		20.5	20.5				20.5
Effective Green, g (s)					41.0		21.0	21.0				21.0
Actuated g/C Ratio					0.59		0.30	0.30				0.30
Clearance Time (s)					5.0		4.5	4.5				4.5
Lane Grp Cap (vph)					3685		531	1526				776
v/s Ratio Prot					c0.26		c0.17	0.14				
v/s Ratio Perm												0.04
v/c Ratio					0.44		0.56	0.46				0.13
Uniform Delay, d1					8.1		20.6	19.9				17.8
Progression Factor					1.00		0.48	0.54				1.00
Incremental Delay, d2					0.4		3.9	0.9				0.3
Delay (s)					8.5		13.8	11.6				18.2
Level of Service					Α		В	В				В
Approach Delay (s)		0.0			8.5			12.3			18.2	
Approach LOS		Α			Α			В			В	
Intersection Summary												
HCM Average Control [10.3	I	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci	1100		0.48									
Actuated Cycle Length			70.0			lost time			8.0			
Intersection Capacity U Analysis Period (min)	tilization)	77.1% 15		CU Lev	el of Se	rvice		D			
c Critical Lane Group			13									



Phase Number	1	2	
Movement	NBTL	WBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	45	
Maximum Split (%)	35.7%	64.3%	
Minimum Split (s)	25	45	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	1	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s)		0	
Time To Reduce (s)	0	0	
Walk Time (s)	11.5	31	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	37	62	
End Time (s)	62	37	
Yield/Force Off (s)	57.5	32	
Yield/Force Off 170(s)	48.5	23	
Local Start Time (s)	5	30	
Local Yield (s)	25.5	0	
Local Yield 170(s)	16.5	61	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 32 (46%), Referenced to phase 2:WBT, Start of Yellow

Splits and Phases: 10: L St & 5th St

44	-
~\ ø1	o2
25 s	45 e

	•	-	*	*	-	↓	•	\	>	
Movement	EBL	EBT	EBR	NBR	SBL	SBT	SEL2	SEL	SER	
Lane Configurations		ፈተጉ		77	ሻ	ተጉ		አ ግነት		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0	4.0		4.0		
Lane Util. Factor		0.91		0.88	0.91	0.91		0.91		
Frpb, ped/bikes		0.99		1.00	1.00	1.00		0.96		
Flpb, ped/bikes		1.00		1.00	1.00	1.00		1.00		
Frt		0.98		0.85	1.00	1.00		0.95		
Flt Protected		1.00		1.00	0.95	0.99		0.97		
Satd. Flow (prot)		4931		2787	1610	3372		5989		
Flt Permitted		1.00		1.00	0.95	0.99		0.97		
Satd. Flow (perm)		4931		2787	1610	3372		5989		
Volume (vph)	1	419	69	161	229	348	7	924	411	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	1	419	69	161	229	348	7	924	411	
RTOR Reduction (vph)	0	23	0	90	0	0	0	0	0	
Lane Group Flow (vph)	0	466	0	71	186	391	0	1342	0	
Confl. Peds. (#/hr)			60						60	
Turn Type	Split		(custom	Perm		Split			
Protected Phases	. 3	3				1	. 2			
Permitted Phases				1	1					
Actuated Green, G (s)		33.0		30.5	30.5	30.5		25.0		
Effective Green, g (s)		33.0		30.0	30.0	30.0		25.0		
Actuated g/C Ratio		0.33		0.30	0.30	0.30		0.25		
Clearance Time (s)		4.0		3.5	3.5	3.5		4.0		
Lane Grp Cap (vph)	ikkeupourugogyyykeenykinyskirikeenskoon	1627	omenagya kuyuku ka addi kuwa s	836	483	1012		1497		
v/s Ratio Prot		c0.09						c0.22		
v/s Ratio Perm				0.03	0.12	0.12				
v/c Ratio		0.29		0.08	0.39	0.39		1.11dr		
Uniform Delay, d1		24.8		25.1	27.7	27.7		36.2		
Progression Factor		1.00		1.00	1.04	1.04		1.00		
Incremental Delay, d2		0.4		0.2	2.2	1.1		8.8		
Delay (s)		25.2		25.3	31.0	29.9		45.0		
Level of Service		С		С	С	С		D		
Approach Delay (s)		25.2				30.3		45.0		
Approach LOS		С				С		D		
Intersection Summary										
HCM Average Control [36.7	ŀ	HCM Le	vel of S	ervice		D	
HCM Volume to Capaci			0.49							
Actuated Cycle Length	·		100.0			lost time			12.0	
Intersection Capacity U	tilizatior	1	69.5%		CU Lev	el of Se	rvice		С	
Analysis Period (min)			15							
dr Defacto Right Lane	e. Reco	de with	1 thoug	h lane a	as a righ	it lane.				

c Critical Lane Group

↓ ★ ★ ¼

Phase Number	1	2	3	6		
Movement	SBTL	SEL	EBTL	Ped		
Lead/Lag	Lead	Lag				
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max		
Maximum Split (s)	34	29	37	63		
Maximum Split (%)	34.0%	29.0%	37.0%	63.0%		
Minimum Split (s)	7.5	29	37	63		
Yellow Time (s)	3.5	3.5	3.5	3.5		
All-Red Time (s)	0	0.5	0.5	0.5		
Minimum Initial (s)	4	4	4	4		
Vehicle Extension (s)	3	3	3	3		
Minimum Gap (s)	3	3	3	3		
Time Before Reduce (s)	0	0	0	0		
Time To Reduce (s)	0	0	0	0		
Walk Time (s)		14	22	48		
Flash Dont Walk (s)		11	11	11		
Dual Entry	Yes	Yes	Yes	Yes		
Inhibit Max	Yes	Yes	Yes	Yes		
Start Time (s)	20	54	83	20		
End Time (s)	54	83	20	83		
Yield/Force Off (s)	50.5	79	16	79		
Yield/Force Off 170(s)	50.5	68	5	68		
Local Start Time (s)	41	75	4	41		
Local Yield (s)	71.5	0	37	0		
Local Yield 170(s)	71.5	89	26	89		

Intersection Summary

Cycle Length 100
Control Type Pretimed
Natural Cycle 100

Offset: 79 (79%), Referenced to phase 2:SEL, Start of Yellow

Splits and Phases: 11: J St & 3rd St

v o1	≰ ø2	♣ ø3
34 s	29 s	37 s
Á Å ø6		
63 s		

	≯	-	*	•	4	•	1	†	~	-	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	Ţ	4111	7					∱ }	7"			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.81	1.00					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.95					1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.96	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	6035	1498					3263	1441			
Flt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	6035	1498					3263	1441			
Volume (vph)	324	1172	130	0	0	0	0	449	407	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	324	1172	130	0	0	0	0	449	407	0	0	0
RTOR Reduction (vph)	158	0	75	0	0	0	0	9	9	0	0	0
Lane Group Flow (vph)	166	1172	55	0	0	0	0	590	248	0	0	0
Confl. Peds. (#/hr)	60		60									
Parking (#/hr)	0											
Turn Type	Split		Perm	nazajagi jirini shi kuji ma Magain	is thinkly a kinduray so air an Robin Salinga ka	usinysis societsissisimente encorreción	inniosevitoarmisperimpai		Perm		essaide a structión de la encountre	
Protected Phases	1	1						2				
Permitted Phases			1						2			
Actuated Green, G (s)	21.0	21.0	21.0					21.0	21.0			
Effective Green, g (s)	21.0	21.0	21.0					21.0	21.0			
Actuated g/C Ratio	0.42	0.42	0.42					0.42	0.42			
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Grp Cap (vph)	542	2535	629		8 - 3 LAS			1370	605			
v/s Ratio Prot	0.13	c0.19						c0.18	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.			
v/s Ratio Perm			0.04						0.17			
v/c Ratio	0.31	0.46	0.09					0.43	0.41			
Uniform Delay, d1	9.7	10.4	8.7					10.3	10.2			
Progression Factor	1.07	0.69	1.05					1.00	1.00			
Incremental Delay, d2	1.2	0.5	0.2					1.0	2.0			
Delay (s)	11.5	7.7	9.3					11.3	12.2			
Level of Service	В	Α	Α					В	В			
Approach Delay (s)	ne en i ne ka n	8.6			0.0			11.5			0.0	
Approach LOS		Α			Α			В			Α	
Intersection Summary												
HCM Average Control [9.6		HCM Le	evel of S	ervice		Α			
HCM Volume to Capac			0.45									
Actuated Cycle Length			50.0			lost time			8.0			
Intersection Capacity U	tilizatior	1	81.5%	1	CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	25	25	
Yellow Time (s)	4	4	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	12	16	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	28	3	
End Time (s)	3	28	
Yield/Force Off (s)	49	24	
Yield/Force Off 170(s)	37	8	
Local Start Time (s)	29	4	
Local Yield (s)	0	25	
Local Yield 170(s)	38	9	

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 49 (98%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 12: J St & 5th St

♣ ø1	r ≥ 2
25 s	25 s

	۶	-	*	•	4	1	1	†	~	1	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					††† †		44	ተተ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		0.97	0.95				
Frpb, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6224		3433	3362				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6224		3433	3362				
Volume (vph)	0	0	0	0	2640	55	419	347	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	2640	55	419	347	0	0	0	0
RTOR Reduction (vph)	0	Ō	0	0	3	0	14	0	0	0	0	0
Lane Group Flow (vph)	0	Ŏ	Ö	Ō	2692	Ö	405	347	Ō	Ō	0	Ŏ
Confl. Peds. (#/hr)	9				2002	60	.00	. · · · · · · · · · · · · · · · · · · ·			Y :	:
Parking (#/hr)					0	- 00		0				
Turn Type					•		Split					
Protected Phases					1		2	2				
Permitted Phases								-				
Actuated Green, G (s)					75.5		17.5	17.5				
Effective Green, g (s)					75.0		17.0	17.0				
Actuated g/C Ratio					0.75		0.17	0.17				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)	ter a com				4668		584	572				
v/s Ratio Prot					c0.43		c0.12	0.10				
v/s Ratio Prot v/s Ratio Perm					60.43		00.12	0.10				
v/c Ratio					0.58		0.69	0.61				
					5.5		39.0	38.4				
Uniform Delay, d1					1.00		0.91	0.91				
Progression Factor												
Incremental Delay, d2					0.5		6.1	4.3				
Delay (s)					6.0		41.5	39.2				
Level of Service					A		D	D			0.0	
Approach Delay (s)		0.0			6.0			40.5			0.0	
Approach LOS		Α			Α			D			Α	
Intersection Summary									_			
HCM Average Control I HCM Volume to Capac	ity ratio		13.7 0.60			evel of S			В			
Actuated Cycle Length			100.0			lost time			8.0			
Intersection Capacity U	tilizatior	າ 1	107.3%		ICU Lev	el of Se	rvice		G			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	WBT	NBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	79	21	
Maximum Split (%)	79.0%	21.0%	
Minimum Split (s)	79	21	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	64.5	5.5	
Flash Dont Walk (s)	11	12	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	44.5	23.5	
End Time (s)	23.5	44.5	
Yield/Force Off (s)	20	41	
Yield/Force Off 170(s)	9	29	
Local Start Time (s)	24.5	3.5	
Local Yield (s)	0	21	
Local Yield 170(s)	89	9	
Intersection Summany			

Cycle Length 100
Control Type Pretimed
Natural Cycle 100

Offset: 20 (20%), Referenced to phase 1:WBT, Start of Yellow

Splits and Phases: 13: I St & 5th St

	4
ø1	~\ @2
79 s	21 s

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተጉ		ኻ	ተተጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.91		0.86	0.86				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4839		1522	4806				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4839		1522	4806				
Volume (vph)	0	0	0	0	645	195	260	1515	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	645	195	260	1515	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	5	0	84	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	835	Ö	176	1515	0	0	0	0
Confl. Peds. (#/hr)	•	U	U	U	000	60	170	1010	U	U		Ų
Turn Type							Split					
Protected Phases					4		2	2				
Permitted Phases												
Actuated Green, G (s)					21.5		21.5	21.5				
Effective Green, g (s)					21.0		21.0	21.0				
Actuated g/C Ratio					0.42		0.42	0.42				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					2032		639	2019			markilla keva	
v/s Ratio Prot					c0.17		0.12	c0.32				
v/s Ratio Perm					CU. 17		0.12	00.32				
v/c Ratio					0.44		0.20	0.75				
					0.41		0.28	0.75				
Uniform Delay, d1					10.2		9.5	12.3				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.6		1.1	2.6				
Delay (s)					10.8		10.6	14.9				
Level of Service					В		В	В				
Approach Delay (s)		0.0			10.8			14.3			0.0	
Approach LOS		Α			В			В			Α	
Intersection Summary												
HCM Average Control E			13.1	la contra sensit	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci Actuated Cycle Length			0.58		Sum of	laat time	· (c)		0 0			
	` '		50.0			lost time el of Se			8.0			
Intersection Capacity Ut Analysis Period (min)	unzauor	phan in	53.7% 15		CO Lev	ei 01 26	vice		Α			
c Critical Lane Group												



Phase Number	2	4	
Movement	NBTL	WBT	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	21.5	21.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	10	10	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	48.5	23.5	
End Time (s)	23.5	48.5	
Yield/Force Off (s)	20	45	
Yield/Force Off 170(s)	12	37	
Local Start Time (s)	3.5	28.5	
Local Yield (s)	25	0	
Local Yield 170(s)	17	42	

Cycle Length 50
Control Type Pretimed
Natural Cycle 45

Offset: 45 (90%), Referenced to phase 4:WBT, Start of Yellow

Splits and Phases: 14: L St & 16th St

↑ _{ø2}	← ø4
25 s	25 s

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		1117>									ተተጉ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.98									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.96									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		6034									4989	
Fit Permitted		1.00 6034									0.98	
Satd. Flow (perm)			700				o e e e e	Carte and Cart		4	4989	
Volume (vph)	1.00	2166	760	1.00	100	1.00	1.00	1.00	1.00	155	248	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2166	760	0	0	0	0	0	0	155	248	0
RTOR Reduction (vph)	0	63	0	0	0	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	2863	0	0	0	0	0	0	0	0	390	0
Confl. Peds. (#/hr)			60							60 0		
Parking (#/hr)									1981, 115, 13			0
Turn Type Protected Phases		2								Split		
Permitted Phases		2									1	
Actuated Green, G (s)		71.5									21.5	
Effective Green, g (s)		71.0									21.0	
Actuated g/C Ratio		0.71									0.21	
Clearance Time (s)		3.5									3.5	
Lane Grp Cap (vph)		4284									1048	January 199
v/s Ratio Prot		c0.47									c0.08	
v/s Ratio Perm		60.47									60.00	
v/c Ratio		0.67									0.37	
Uniform Delay, d1		8.0									33.8	
Progression Factor		1.00									0.85	
Incremental Delay, d2		0.8									1.0	
Delay (s)		8.8									29.7	
Level of Service		Α									C	
Approach Delay (s)		8.8			0.0			0.0			29.7	
Approach LOS		Α			Ä			Α			С	
Intersection Summary												
HCM Average Control [11.4	H	ICM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.60									
Actuated Cycle Length			100.0			lost time			8.0			
Intersection Capacity U	tilization		60.5%	I	CU Lev	el of Se	rvice		В			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	SBTL	EBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	75	
Maximum Split (%)		75.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s)	0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	90.5	15.5	
End Time (s)	15.5	90.5	
Yield/Force Off (s)	12	87	
Yield/Force Off 170(s)	4		
Local Start Time (s)	3.5		
Local Yield (s)	25		
Local Yield 170(s)	17	92	

Cycle Length 100
Control Type Pretimed
Natural Cycle 55

Offset: 87 (87%), Referenced to phase 2:EBT, Start of Yellow

Splits and Phases: 1: Q St & 3rd St

k	
★ Ø1	→ ø2
25 s	75 s

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		22010			ተተጉ						↑ ↑	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	4.0
Lane Util. Factor					0.91						0.91	0.91
Frpb, ped/bikes					1.00						0.99	0.93
Flpb, ped/bikes					1.00						1.00	1.00
Frt					1.00						0.98	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					4870						3122	1205
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					4870						3122	1205
Volume (vph)	0	0	0	132	568	0	0	0	0	0	271	192
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	132	568	0	0	0	0	0	271	192
RTOR Reduction (vph)	0	0	0	0	61	0	0	0	0	0	25	104
Lane Group Flow (vph)	0	0	0	0	639	0	0	0	0	0	291	44
Confl. Peds. (#/hr)				60								60
Parking (#/hr)				0	0						0	0
Turn Type				Split							7	Perm
Protected Phases				2	2						-1	
Permitted Phases				i i i i i i i i i i i i i i i i i i i	-							1
Actuated Green, G (s)					27.5						15.5	15.5
Effective Green, g (s)					27.0						15.0	15.0
Actuated g/C Ratio					0.54						0.30	0.30
Clearance Time (s)					3.5						3.5	3.5
Lane Grp Cap (vph)					2630						937	362
v/s Ratio Prot					c0.13						c0.09	002
v/s Ratio Perm					00.10						00.00	0.04
v/c Ratio					0.24						0.31	0.12
Uniform Delay, d1					6.1						13.5	12.7
Progression Factor					1.00						1.00	1.00
Incremental Delay, d2					0.2						0.9	0.7
Delay (s)					6.3						14.4	13.4
Level of Service					0.5 A						17.7	10.7 B
Approach Delay (s)		0.0			6.3			0.0			14.1	
Approach LOS		Α			Α			Α			' В	
Intersection Summary												
HCM Average Control [9.4		HCM Le	evel of S	ervice		Α			
HCM Volume to Capaci	ity ratio		0.27									
Actuated Cycle Length			50.0			lost time			8.0			
Intersection Capacity U	tilization) ·	32.8%		ICU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	SBT	WBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max		
Maximum Split (s)	19	31	
Maximum Split (%)	38.0%		
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4		
Vehicle Extension (s)	3		
Minimum Gap (s)	3	3	
Time Before Reduce (s			
Time To Reduce (s)	0	0	
Walk Time (s)	7	. •	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	이 가능으로 가면 연구성주의 이	
Start Time (s)	40.5	9.5	
End Time (s)	9.5		
Yield/Force Off (s)	6		
Yield/Force Off 170(s)	48		
Local Start Time (s)	3.5		
Local Yield (s)	19		
Local Yield 170(s)	11	42	
Intersection Summary			

Cycle Length
Control Type
Natural Cycle

50 Pretimed

Offset: 37 (74%), Referenced to phase 2:WBTL, Start of Yellow

Splits and Phases: 2: P St & 3rd St

√ ø1	₹ ø2
19s	31 s

	-	*	-	ļ	\	\
Movement	EBT	EBR	SBL	SBT	SEL	SER
Lane Configurations	1→			ተተኩ	ኻነላ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			0.91	0.97	
Frpb, ped/bikes	0.98			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	0.98			1.00	0.95	
Flt Protected	1.00			0.97	0.97	
Satd. Flow (prot)	1798			4952	3333	
Flt Permitted	1.00			0.97	0.97	
Satd. Flow (perm)	1798			4952	3333	
Volume (vph)	78	13	369	319	326	143
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	78	13	369	319	326	143
RTOR Reduction (vph)	8	0	0	213	0	0
Lane Group Flow (vph)	83	0	0	475	469	0
Confl. Peds. (#/hr)		60	60			
Parking (#/hr)			0			
Turn Type	inggang pagalan da da ka ka ka maka sa da da	ilizioile kai aurai essi il la arra	Split			
Protected Phases	6		. 4	4	5	B. 물문, 강경, 물로 보고 있는 물로, 말로, 물로 보고 있는 것이 되는 말로 말로 보고 있다.
Permitted Phases						
Actuated Green, G (s)	12.5			29.5	17.5	
Effective Green, g (s)	12.0			29.0	17.0	
Actuated g/C Ratio	0.17			0.41	0.24	
Clearance Time (s)	3.5			3.5	3.5	
Lane Grp Cap (vph)	308			2052	809	
v/s Ratio Prot	c0.05			c0.10	c0.14	
v/s Ratio Perm						
v/c Ratio	0.27			0.23	0.58	Titti minga til kritas kraal min minne studdernu sine maker kennskraater stade ekska skriskepsen saskapan.
Uniform Delay, d1	25.2			13.3	23.4	
Progression Factor	1.00			0.24	1.00	
Incremental Delay, d2	2.1			0.2	3.0	
Delay (s)	27.3			3.5	26.4	
Level of Service	С			Α	С	
Approach Delay (s)	27.3			3.5	26.4	
Approach LOS	С			Α	С	
Intersection Summary						
HCM Average Control [13.8		HCM Le	evel of Service B
HCM Volume to Capacity ratio			0.34			
Actuated Cycle Length			70.0 54.7%			flost time (s) 12.0
	Intersection Capacity Utilization				ICU Lev	vel of Service A
Analysis Period (min)			15			
c Critical Lane Group						

3/1/2005 Synchro 6 Report Fehr & Peers Associates, Inc. Page 5

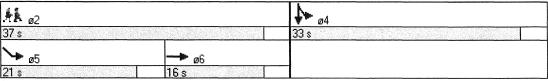
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A.R.	4 p.	-	-

Phase Number	2	4	5	6
Movement	Ped	SBTL	SEL	EBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	37	33		16
			30.0%	
Minimum Split (s)	37	33	7.5	16
Yellow Time (s)	3.5	3.5		3.5
All-Red Time (s)	0	0	0	0
Minimum Initial (s)	4			
Vehicle Extension (s)	3	3		
Minimum Gap (s)	3	3		
Time Before Reduce (s)		0		0
Time To Reduce (s)	0	0		
Walk Time (s)	22.5			4.5
Flash Dont Walk (s)	11	9		8
Dual Entry	Yes	Yes		
Inhibit Max	Yes			
Start Time (s)	20.5			
End Time (s)	57.5	20.5		
Yield/Force Off (s)	54			
Yield/Force Off 170(s)	43			
Local Start Time (s)	3.5			
Local Yield (s)	37			
Local Yield 170(s)	26	61	21	29

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

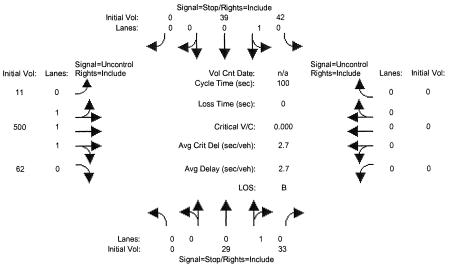
Offset: 17 (24%), Referenced to phase 4:SBTL, Start of Yellow

Splits and Phases: 3: N St & 3rd St



Level Of Service Computation Report 2000 HCM Unsignalized (Future Volume Alternative) Near Term AM

Intersection #4: N St./4th St.



	itiai voi.	Signal	=Stop/Right	s=Include	33						
Street Name:		4th	St					N	St		
	orth B	ound	Sou	ith Bo	und	Εá	ast Bo	und	W∈	st Bo	und
		- R			- R			- R			
Volume Module:											
Base Vol:	0 29	33	42	39	0	11	500	62	0	0	0
Growth Adj: 1.0	0 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 29	33	42	39	0	11	500	62	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:	0 29	33	42	39	0	11	500	62	0	0	0
User Adj: 1.0	0 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj: 1.0	0 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 29	33	42	39	0	11	500	62	0	0	0
Reduct Vol:	0 0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0 29	33	42	39	0	11	500	62	0	0	0
Critical Gap Module:											
Critical Gp:xxxx	x 6.5	6.2	7.1	6.5	XXXXX	4.1		XXXXX			
FollowUpTim:xxxx					XXXXX			XXXXX			
Capacity Module											
Cnflict Vol: xxx			218		XXXXX			XXXXX		XXXX	XXXXX
Potent Cap.: xxx			742		XXXXX			XXXXX		XXXX	XXXXX
Move Cap.: xx:			664		XXXXX			XXXXX		XXXX	XXXXX
Volume/Cap: xx:					XXXX			XXXX			XXXX
Level Of Service	Modul	e:									
Queue: xxx								XXXXX			
Stopped Del:xxx:								XXXXX			
LOS by Move:			*		*	А	*		*	*	*
		- RT				$_{ m LT}$	- LTR	- RT	LT ·	- LTR	- RT
Shared Cap.: xx					XXXXX			XXXXX			XXXXX
SharedQueue:xxx								XXXXX			
Shrd StpDel:xxx								XXXXX			
Shared LOS:			В		*	Α	*	*	*	*	*
ApproachDel:)		13.4		X	XXXXX		X.	XXXXX	
ApproachLOS:	В			В			*			*	

	۶	-	*	•	4	4	4	†	/	1	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተኩ						ተተጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.97				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5058						4899				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5058	h-Massachus and a second				TOWN THE RESERVE TO T	4899				***************************************
Volume (vph)	63	523	0	0	0	0	0	865	194	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	63	523	0	0	0	0	0	865	194	0	0	0
RTOR Reduction (vph)	0	21	0	0	0	0	0	51	0	0	0	0
Lane Group Flow (vph)	0	565	0	0	0	0	0	1008	0	0	0	0
Confl. Peds. (#/hr)	60								60			
Parking (#/hr)	0		0				katalah,		0			
Turn Type	Split											
Protected Phases	1	1						2				
Permitted Phases												
Actuated Green, G (s)		31.5						31.5				
Effective Green, g (s)		31.0						31.0				
Actuated g/C Ratio		0.44						0.44				
Clearance Time (s)		3.5						3.5				
Lane Grp Cap (vph)		2240						2170				
v/s Ratio Prot		c0.11						c0.21				
v/s Ratio Perm												
v/c Ratio		0.25						0.46				
Uniform Delay, d1		12.2						13.7				
Progression Factor		1.41						1.00				
Incremental Delay, d2		0.3						0.7				
Delay (s)		17.6						14.4				
Level of Service		В						В				
Approach Delay (s)		17.6			0.0			14.4			0.0	
Approach LOS		В			Α			В			Α	
Intersection Summary												
HCM Average Control [15.5		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci	,		0.36		E conservation o		trans entre					
Actuated Cycle Length			70.0			lost time			8.0			
Intersection Capacity U	tilization	1	43.9%		CU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	EBTL	NBT	}
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	35	35	
Maximum Split (%)	50.0%		
Minimum Split (s)	34.5	34.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	22	22	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	65.5	30.5	
End Time (s)	30.5	65.5	
Yield/Force Off (s)	27	62	
Yield/Force Off 170(s)	18	53	
Local Start Time (s)	38.5	3.5	
Local Yield (s)	0	35	
Local Yield 170(s)	61	26	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 27 (39%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 5: N St & 5th St

♣ ø1	↑ ø2
35 s	35 s

	≯	-	*	*	-	*	4	†	<i>*</i>	-	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተጉ		ሻ	ተተ						नाक	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.91		1.00	0.95						0.86	
Frpb, ped/bikes		1.00		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.99		1.00	1.00						0.96	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		5040		1770	3539						6088	
Flt Permitted		1.00		0.95	1.00						0.99	
Satd. Flow (perm)		5040		1770	3539						6088	
Volume (vph)	0	849	35	79	186	0	0	0	0	325	554	284
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	849	35	79	186	0	0	0	0	325	554	284
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	83	(
Lane Group Flow (vph)	0	878	0	79	186	0	0	0	0	0	1080	(
Confl. Peds. (#/hr)	o positiv y t	0,0	60	, ,	100		U		•	U	1000	
Parking (#/hr)			00							0		
Turn Type				Prot				400 pm (\$150) 430 (\$2	Legisland State Activ	Split		
Protected Phases		6		5	2					3piit 4	4	
Permitted Phases		U		3	2					4	4	
		20.0		12.5	36.0						OF E	
Actuated Green, G (s) Effective Green, g (s)											25.5	
		19.5		12.0	35.5						26.5	
Actuated g/C Ratio		0.28		0.17	0.51						0.38	
Clearance Time (s)	satis is an indexe	3.5	san Siring San	3.5	3.5				200 (18 (20 pp. 18)		5.0	
Lane Grp Cap (vph)		1404		303	1795						2305	
v/s Ratio Prot		c0.17		c0.04	0.05						c0.18	
v/s Ratio Perm		0.00		0.00							1	
v/c Ratio		0.63		0.26	0.10						0.47	
Uniform Delay, d1		22.1		25.2	9.0						16.4	
Progression Factor		1.00		0.69	1.50						0.68	
Incremental Delay, d2		2.1		2.1	0.1						0.7	
Delay (s)		24.2		19.4	13.6						11.9	
Level of Service		C		В	В						В	
Approach Delay (s)		24.2			15.3			0.0			11.9	
Approach LOS		С			В			Α			В	
Intersection Summary												
HCM Average Control D			17.0		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.48		±3 sees a comme	Later was a second of the second	. Grande		or never s			
Actuated Cycle Length			70.0			lost time			12.0			
Intersection Capacity U	tilizatior	1	49.7%		ICU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group			i O									



Phase Number	2	4	5	6			
Movement	WBT	SBTL	WBL	EBT			
Lead/Lag		JD, L	Lead	Lag			
Lead-Lag Optimize			A.A. FENDRARIA				
Recall Mode	Max	Max	Max	Max			
Maximum Split (s)	39.5	30.5	16	23.5			
Maximum Split (%)	56.4%	43.6%	22.9%	33.6%			
Minimum Split (s)	39.5	30.5	7.5	23.5			
Yellow Time (s)	3.5	3.5		3.5			
All-Red Time (s)	0	1.5	0	0			
Minimum Initial (s)	4	4					
Vehicle Extension (s)	3	3					
Minimum Gap (s)	3	3					
Time Before Reduce (s		0	Ţ.				
Time To Reduce (s)	0	0					
Walk Time (s)	26			10			
Flash Dont Walk (s)	10			10			
Dual Entry	Yes	Yes	the second second				
Inhibit Max	Yes						
Start Time (s)	22.5						
End Time (s)	62						
Yield/Force Off (s)	58.5	17.5					
Yield/Force Off 170(s)	48.5						
Local Start Time (s)	57.5						
Local Yield (s)	23.5		엄마 보다 그리다다.				
Local Yield 170(s)	13.5	47.5	0	13.5	ı		

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 35 (50%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow

Splits and Phases: 6: Capitol Mall & 3rd St

← ø2		↓ ø4							
39.5 s		30.5 s							
√ ø5	→ ø6								
16 s	23.5 s								

	≯	-	*	•	-	*	4	†	/	-	+	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		414	7		444			4			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.0			4.0	
Lane Util. Factor		0.95	1.00		0.91			1.00			1.00	
Frpb, ped/bikes		1.00	0.87		0.98			0.96			1.00	
Flpb, ped/bikes		1.00	1.00		1.00			0.98			0.98	
Frt		1.00	0.85		0.98			0.95			1.00	
Flt Protected		1.00	1.00		1.00			0.99			0.99	
Satd. Flow (prot)		3539	1380		4863			1489			1613	
FIt Permitted		1.00	1.00		1.00			0.93			0.94	
Satd. Flow (perm)		3539	1380		4863			1405			1532	
Volume (vph)	0	1005	169	. 0	249	47	10	12	13	37	119	6
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1005	169	0	249	47	10	12	13	37	119	6
RTOR Reduction (vph)	0	0	78	0	22	0	0	8	0	0	2	Ō
Lane Group Flow (vph)	0	1005	91	0	274	Ō	Ö	27	0	Ō	160	0
Confl. Peds. (#/hr)	60		60	60	e gere tal i de i	60	60		60	60		60
Parking (#/hr)							0	. 0	0	0	0	0
Turn Type	Perm		Perm	Perm			Perm		200000000000000000000000000000000000000	Perm	9 (1,100,4)	
Protected Phases		2			2			4			4	
Permitted Phases	2	to the second transfer	2	2	11.1 21.184.4 22. 1		4	ur drugger er		4		
Actuated Green, G (s)		38.0	38.0		38.0			23.5			23.5	
Effective Green, g (s)		37.5	37.5		37.5			24.5			24.5	
Actuated g/C Ratio		0.54	0.54		0.54			0.35			0.35	
Clearance Time (s)		3.5	3.5		3.5			5.0			5.0	
Lane Grp Cap (vph)		1896	739		2605			492			536	
v/s Ratio Prot		c0.28	1일 (경기 등 전)		0.06							
v/s Ratio Perm			0.07					0.02			c0.10	
v/c Ratio		0.53	0.12		0.11			0.05			0.30	
Uniform Delay, d1		10.5	8.1		8.0			15.1			16.5	
Progression Factor		0.89	2.54		0.33			0.85			0.90	
Incremental Delay, d2		0.9	0.3		0.1			0.2			1.4	
Delay (s)		10.2	20.8		2.7			13.1			16.2	
Level of Service		В	C		 A			В			В	
Approach Delay (s)		11.8	****		2.7			13.1			16.2	
Approach LOS		В			 A			В			В	
Intersection Summary												413 km (550)
HCM Average Control [10.6		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci	ty ratio		0.44									
Actuated Cycle Length	(s)		70.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity U		1	54.2%			el of Se			Α			
Analysis Period (min)			15									
c Critical Lane Group												

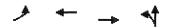


Phase Number	2	4	
Movement	EBWB	NBSB	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	41.5	28.5	
Maximum Split (%)		40.7%	
Minimum Split (s)	22.5	20	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0 9	0	
Walk Time (s)		5	
Flash Dont Walk (s)	10	10	
Dual Entry	Yes		
Inhibit Max	Yes		
Start Time (s)	59		
End Time (s)	30.5		
Yield/Force Off (s)	27		
Yield/Force Off 170(s)			
Local Start Time (s)	32		
Local Yield (s)	0		
Local Yield 170(s)	60	17	
Intersection Summary			
Cycle Length			70
Control Type		Pre	timed
Natural Cycle			45

Offset: 27 (39%), Referenced to phase 2:EBWB, Start of Yellow

Splits and Phases:	7: Capitol Mall & 4th St		
\$ @2		1 04	
41.5 s		28.5 s	

	≯	-	*	*	-	*	4	†	1	1	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7575	ተተ			ተተጐ		ሻሻ	<u>ተ</u> ቀተ	***************************************			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	0.97	0.95			0.91		0.97	0.91				
Frpb, ped/bikes	1.00	1.00			0.98		1.00	0.94				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.97		1.00	0.93				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			4861		3433	4458				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			4861		3433	4458				
Volume (vph)	492	563	0	0	158	37	138	309	286	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	492	563	0	0	158	37	138	309	286	0	0	0
RTOR Reduction (vph)	0	0	0	0	27	0	0	165	0	Ö	0	0
Lane Group Flow (vph)	492	563	Ö	ő	168	Ö	138	430	Ö	ŏ	Ŏ	0
Confl. Peds. (#/hr)	.02	000		· · · · · · · · · · · · · · · · · · ·	,00	60	,00		60	•	Y .	· , · · · · · ·
Turn Type	Prot	7.6					Split					
Protected Phases	1	6			2		8	8				
Permitted Phases	Valle six full											
Actuated Green, G (s)	14.5	36.5			18.5		25.0	25.0				
Effective Green, g (s)	14.0	36.0			18.0		26.0	26.0				
Actuated g/C Ratio	0.20	0.51			0.26		0.37	0.37				
Clearance Time (s)	3.5	3.5			3.5		5.0	5.0				
Lane Grp Cap (vph)	687	1820			1250	erange of Carlot Carlot	1275	1656				
v/s Ratio Prot	c0.14	c0.16			0.03		0.04	c0.10				
v/s Ratio Perm	CO. 1-	CO. 10			0.00		0.04	60.10				
v/c Ratio	0.72	0.31			0.13		0.11	0.26				
Uniform Delay, d1	26.1	9.8			20.0		14.4	15.3				
Progression Factor	0.68	0.11			1.00		0.43	0.12				
Incremental Delay, d2	5.5	0.11			0.2		0.43	0.12				
Delay (s)	23.2	1.5			20.2		6.4	2.2				
Level of Service	23.2 C	1.5 A			20.2 C		0.4 A	2.2 A				
Approach Delay (s)	C	11.6			20.2			3.0			0.0	
Approach LOS		В			20.2 C			3.0 A			Α	
Intersection Summary												
HCM Average Control I HCM Volume to Capaci			9.3 0.39	Warania Sa	HCM Le	vel of S	ervice		Α			
Actuated Cycle Length			70.0		Sum of	lost time	e (s)		12.0			
Intersection Capacity U	` '		52.7%		ICU Lev				12.0 A			
Analysis Period (min) c Critical Lane Group			15									



Phase Number	1	2	6	8		
Movement	EBL	WBT	EBT	NBTL		
Lead/Lag	Lag	Lead				
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max		
Maximum Split (s)	18	22	40	30		
그는 일이 일어 바이를 살아가 모든 이용이 가장하면 바다를 하고 하는 것은 그리고 모든 것이다.			57.1%	42.9%		
Minimum Split (s)	7.5	20.5	20.5	17		
Yellow Time (s)	3.5	3.5	3.5			
All-Red Time (s)	0	0	0	1.5		
Minimum Initial (s)	4	4	4	4		
Vehicle Extension (s)	3	3	3	3		
Minimum Gap (s)	3	3	3	3		
Time Before Reduce (s)	0	0	0	0		
Time To Reduce (s)	0	0	0	0		
Walk Time (s)		7	7	7		
Flash Dont Walk (s)		10	10	5		
Dual Entry	No	Yes	Yes	Yes		
Inhibit Max	Yes	Yes	Yes			
Start Time (s)	20.5					
End Time (s)	38.5	20.5	38.5			
Yield/Force Off (s)	35			63.5		
Yield/Force Off 170(s)	35					
Local Start Time (s)	55.5			3.5		
Local Yield (s)	0	100				
Local Yield 170(s)	0	42	60	23.5		

Cycle Length 70
Control Type Pretimed
Natural Cycle 55

Offset: 35 (50%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow

Splits and Phases: 8: Capitol Mall & 5th St

4 ø2	→ ø1	↑ ø8
22 \$	18 s	30 s
→ ø6		
40 s		

	•		*	•	4	4	1	†	~	1	Į.	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				P.	44	7					ተተኈ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0					4.0	
Lane Util. Factor				0.91	0.91	1.00					0.91	
Frt				1.00	1.00	0.85					1.00	
Flt Protected				0.95	0.99	1.00					1.00	
Satd. Flow (prot)				1610	3340	1583					5079	
FIt Permitted				0.95	0.99	1.00					1.00	
Satd. Flow (perm)				1610	3340	1583					5079	
Volume (vph)	0	0	0	276	245	107	0	0	0	0	886	7
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	276	245	107	0	0	0	0	886	7
RTOR Reduction (vph)	0	0	0	37	37	58	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	134	313	49	0	0	0	0	892	0
Turn Type		<u> </u>	(ustom	(ustom						
Protected Phases											4	
Permitted Phases				2	2	2						
Actuated Green, G (s)				32.5	32.5	32.5					30.5	
Effective Green, g (s)				32.0	32.0	32.0					30.0	
Actuated g/C Ratio				0.46	0.46	0.46					0.43	
Clearance Time (s)				3.5	3.5	3.5					3.5	
Lane Grp Cap (vph)				736	1527	724					2177	
v/s Ratio Prot					1021	· · · · · · · · · · · · · · · · · · ·					c0.18	
v/s Ratio Perm				0.08	c0.09	0.03					00.10	
v/c Ratio				0.18	0.20	0.07					0.41	
Uniform Delay, d1				11.2	11.4	10.6					13.9	
Progression Factor				0.78	0.82	0.69					1.00	
Incremental Delay, d2				0.75	0.3	0.03					0.6	
Delay (s)				9.3	9.6	7.5					14.4	
Level of Service				3.5 A	3.0 A	7.5 A					В	
Approach Delay (s)		0.0		,	9.2			0.0			14.4	
Approach LOS		0.0 A			9.2 A			Ο.0			В	
	esian Arabagan etteknatura		With a transport and a second a second a second	*********************		uudoodaa oo aa a						*******************
Intersection Summary												
HCM Average Control D			12.3	ŀ	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.30									
Actuated Cycle Length			70.0			ost time			8.0			
Intersection Capacity Ut	tilization		33.8%	I	CU Lev	el of Sei	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	2	4
Movement	WBTL	SBT
Lead/Lag		
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	36	34
	51.4%	
Minimum Split (s)	7.5	34
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	0
Minimum Initial (s)	4 3	4 3
Vehicle Extension (s) Minimum Gap (s)	ა 3	3 3
Time Before Reduce (s)		0
Time To Reduce (s)	, 0	0
Walk Time (s)	18.1 Feb. (1915 - 19 .6)	22.5
Flash Dont Walk (s)		8
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes
Start Time (s)	2.5	38.5
End Time (s)	38.5	
Yield/Force Off (s)	35	
Yield/Force Off 170(s)	35	
Local Start Time (s)	3.5	
Local Yield (s)	36	
Local Yield 170(s)	36	62

Cycle Length 70
Control Type Pretimed
Natural Cycle 45

Offset: 69 (99%), Referenced to phase 4:SBT, Start of Yellow

Splits and Phases: 9: L St & 3rd St

ø2	₩ ø4
36 s	34 s

	▶		*	•	4	•	1	†	1	1	+	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					1117>		1	ተተተ				77
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Γotal Lost time (s)					4.0		4.0	4.0				4.0
_ane Util. Factor					0.86		1.00	0.91				0.88
Frpb, ped/bikes					0.99		1.00	1.00				0.95
Flpb, ped/bikes					1.00		1.00	1.00				1.00
=rt					0.98		1.00	1.00				0.85
FIt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6236		1770	5085				2656
FIt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6236		1770	5085				2656
Volume (vph)	0	0	0	0	568	83	106	465	0	0	0	335
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	568	83	106	465	0	0	0	335
RTOR Reduction (vph)	0	0	0	0	38	0	51	0	0	0	0	78
Lane Group Flow (vph)	Ö	0	Ö	ő	613	Ö	55	465	Ő	Ö	0	257
Confl. Peds. (#/hr)	•	a nam a y a		•	0.0	60	60		₩		•	60
Turn Type						- 00	Split				,	uston
Protected Phases					2		Opiit 1	1				Juston
Permitted Phases					yeta pytje			addarii siye				1
Actuated Green, G (s)					25.0		35.5	35.5				35.5
Effective Green, g (s)					26.0		36.0	36.0				36.0
Actuated g/C Ratio					0.37		0.51	0.51				0.51
Clearance Time (s)					5.0		4.5	4.5				4.5
Lane Grp Cap (vph)			likatija Aktive rojas		2316		910	2615				1366
v/s Ratio Prot					c0.10		0.03	0.09				1300
					CO. 10		0.03	0.09				c0.10
v/s Ratio Perm					0.00		0.06	0.40				
v/c Ratio					0.26		0.06	0.18				0.19
Uniform Delay, d1					15.3		8.5	9.1				9.
Progression Factor					1.00		0.53	0.51				1.00
Incremental Delay, d2					0.3		0.1	0.1				0.0
Delay (s)					15.6		4.6	4.8				9.4
Level of Service					В		Α	Α			and suescribed	1
Approach Delay (s)		0.0			15.6			4.7			9.4	
Approach LOS		Α			В			Α			Α	
Intersection Summary												
HCM Average Control D			10.3		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.22									
Actuated Cycle Length (70.0		Sum of				8.0			
Intersection Capacity Ut	tilizatior).	64.5%		ICU Lev	el of Se	rvice		С			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	NBTL	WBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	40	30	
Maximum Split (%)	57.1%	42.9%	
Minimum Split (s)	40	30	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	1	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	26.5	16	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	37	7	
End Time (s)	7	37	
Yield/Force Off (s)	2.5		
Yield/Force Off 170(s)	63.5		
Local Start Time (s)	5	45	
Local Yield (s)	40.5	0	
Local Yield 170(s)	31.5	61	
Intersection Summary			

70 Cycle Length Control Type Pretimed Natural Cycle 70

Offset: 32 (46%), Referenced to phase 2:WBT, Start of Yellow

Splits and Phases: 10: L St & 5th St

			٦
45	4	←	1
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An o		130 *	

	≯	-	*	†	/	1	1	•	\	>	
Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	SEL2	SEL	SER	
Lane Configurations		414		}	7	1/2	44		<u> አ</u> ነገጒ		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0		4.0		
Lane Util. Factor		0.91		0.95	0.95	0.91	0.91		0.91		
Frpb, ped/bikes		0.99		1.00	1.00	1.00	1.00		0.97		
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00		1.00		
Frt		0.98		0.93	0.85	1.00	1.00		0.96		
Fit Protected		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (prot)		4955		1640	1504	1610	3354		6136		
FIt Permitted		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (perm)		4955		1640	1504	1610	3354		6136		
Volume (vph)	23	1702	235	40	105	102	116	11	1697	547	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	23	1702	235	40	105	102	116	11	1697	547	
RTOR Reduction (vph)	0	18	0	9	9	0	0	0	0	0	
Lane Group Flow (vph)	0	1942	0	69	58	70	148	0	2255	0	
Confl. Peds. (#/hr)			60							60	
Turn Type	Split				Perm	Split		Split			
Protected Phases	. 3	3		5		. 1	1	. 2	2		
Permitted Phases					5						
Actuated Green, G (s)		37.0		6.5	6.5	6.5	6.5		35.0		
Effective Green, g (s)		37.0		6.0	6.0	6.0	6.0		35.0		
Actuated g/C Ratio		0.37		0.06	0.06	0.06	0.06		0.35		
Clearance Time (s)		4.0		3.5	3.5	3.5	3.5		4.0		
Lane Grp Cap (vph)		1833		98	90	97	201		2148		
v/s Ratio Prot		c0.39		c0.04		0.04	c0.04		c0.37		
v/s Ratio Perm					0.04						
v/c Ratio		1.06		0.70	0.64	0.72	0.74		1.05		
Uniform Delay, d1		31.5		46.1	45.9	46.2	46.2		32.5		
Progression Factor		1.00		1.00	1.00	1.15	1.15		1.00		
Incremental Delay, d2		38.9		34.2	30.0	36.9	21.1		34.0		
Delay (s)		70.4		80.3	75.9	90.1	74.3		66.5		
Level of Service		Е		F	Е	F	E		Е		
Approach Delay (s)		70.4		78.3			79.4		66.5		
Approach LOS		Е		Е			Е		E		
Intersection Summary											
HCM Average Control D			69.2	١	HCM Le	vel of S	ervice		Ε		
HCM Volume to Capaci			1.01								
Actuated Cycle Length			100.0			lost time	` '		16.0		
Intersection Capacity Union Analysis Period (min)	tilizatior	1	92.7% 15		CU Lev	el of Se	rvice		F		
c Critical Lane Group			10								

	\	4	4	1	ÁÂ	
Phase Number	1	2	3	5	6	
Movement	SBTL	SEL	EBTL	NBT	Ped	
Lead/Lag	Lead	Lag				
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max	Max	
Maximum Split (s)	10	39	41	10	59	
Maximum Split (%)	10.0%	39.0%	41.0%	10.0%	59.0%	
Minimum Split (s)	10	39	41	10	59	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0.5	0.5	0	0.5	
Minimum Initial (s)	4	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	· 3	
Minimum Gap (s)	3	3	3	3	3	
Time Before Reduce (s		0	0	0	0	
Time To Reduce (s)	0	0	0	0	0	
Walk Time (s)		24	26		44	
Flash Dont Walk (s)		11	11		11	
Dual Entry	Yes	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes		
Start Time (s)	35	45	94	84	35	
End Time (s)	45	84	35	94	94	
Yield/Force Off (s)	41.5	80	31	90.5	90	
Yield/Force Off 170(s)	41.5	69	20	90.5		
Local Start Time (s)	55	65	14	4	55	
Local Yield (s)	61.5	0	51	10.5	10	
Local Yield 170(s)	61.5	89	40	10.5	99	
Intersection Summary						

Cycle Length 100 Control Type Pretimed Natural Cycle 120

Offset: 80 (80%), Referenced to phase 2:SEL, Start of Yellow

Splits and Phases: 11: J St & 3rd St

№ ø1	★ ø2	1 ø5	♣ ø3
10 s	39 s	10 s	41 s
ÁÅ ø6			
59 s			

Lane Configurations Ideal Flow (vphpl) 1 Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) 1 Flt Permitted Satd. Flow (perm) 1 Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	1900 4.0 0.81 1.00 1.00	### EBT 1900 4.0 0.81 1.00	1900 4.0	WBL 1900	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Ideal Flow (vphpl) Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	1900 4.0 0.81 1.00 1.00	1900 4.0 0.81 1.00	1900 4.0	1900				4.4		-		
Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	4.0 0.81 1.00 1.00 1.00	1900 4.0 0.81 1.00	4.0	1900	😅			ት ኈ	7			
Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	0.81 1.00 1.00 1.00	0.81 1.00			1900	1900	1900	1900	1900	1900	1900	1900
Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	1.00 1.00 1.00	1.00	4 00					4.0	4.0			
Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	1.00 1.00		1.00					0.91	0.91			
Frt Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	1.00		0.96					1.00	1.00			
Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type		1.00	1.00					1.00	1.00			
Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	420 4214	1.00	0.85					0.95	0.85			
Fit Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	1290	6035	1514					3215	1441			
Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	0.95	1.00	1.00					1.00	1.00			
Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	1290	6035	1514					3215	1441			
Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	680	2558	335	0	0	0	0	252	297	0	0	0
Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	680	2558	335	0	0	0	0	252	297	0	0	0
Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr) Turn Type	195	0	147	0	0	0	0	1	1	0	0	0
Confl. Peds. (#/hr) Parking (#/hr) Turn Type	485	2558	188	0	0	0	0	384	163	0	0	0
Parking (#/hr) Turn Type	60		60						, i o o o o o o o o o o o o o o o o o o	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	ne an ang an ang T elan	. 1 Maria =
Turn Type	0											
and the second s	Split		Perm			Water Control of the Assessment			Perm			
	1	9. 18. 18. 18. 18. 18. 18. 18. 18. 18. 18						2				
Permitted Phases	1.20	ti i ta a a sa s	1					* ************************************	2			
	56.0	56.0	56.0					36.0	36.0			
	56.0	56.0	56.0					36.0	36.0			
, 0 ()	0.56	0.56	0.56					0.36	0.36			
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Grp Cap (vph)	722	3380	848					1157	519			
	0.38	c0.42	0.0					c0.12	9.0			
v/s Ratio Perm	0.00		0.12					00.12	0.11			
	0.67	0.76	0.22					0.33	0.31			
	15.5	16.8	11.0					23.3	23.1			
	0.92	0.71	1.39					1.00	1.00			
Incremental Delay, d2	0.5	0.1	0.1					0.8	1.6			
Delay (s)	14.8	12.1	15.4					24.0	24.7			
Level of Service	В	В	В					C				
Approach Delay (s)		13.0	A ISAN FIRE		0.0			24.2			0.0	
Approach LOS		В			A			C			A	
Intersection Summary												
HCM Average Control De			14.5	1	HCM Le	vel of S	ervice		В			
HCM Volume to Capacity			0.59									
Actuated Cycle Length (s)			100.0			ost time			8.0			
Intersection Capacity Utiliz	zation		67.2%	I	CU Lev	el of Se	rvice		С			
Analysis Period (min)			40.000.000.000									
c Critical Lane Group			15									



Phase Number	1	2		
Movement	EBTL	NBT		
Lead/Lag	Lead	Lag		
Lead-Lag Optimize				
Recall Mode	Max	Max		
Maximum Split (s)	60	40		
그는 사람이 되었다. 항상 경기 가장이 되는 것만 되는 사람들이 가장 사람들이 되었다. 그 사람들이 되었다.		40.0%		
Minimum Split (s)	60	40		
Yellow Time (s)	4	4		
All-Red Time (s)	0	0		
Minimum Initial (s)	4	4		
Vehicle Extension (s)	3	3		
Minimum Gap (s)	3	3		
Time Before Reduce (s)		0		
Time To Reduce (s)	.0	0		
Walk Time (s)	44	20		
Flash Dont Walk (s)	12	16		
Dual Entry	Yes	Yes		
Inhibit Max	Yes	Yes		
Start Time (s)	43			
End Time (s)	3	43		
Yield/Force Off (s)	99	39		
Yield/Force Off 170(s)	87	23		
Local Start Time (s)	44			
Local Yield (s) Local Yield 170(s)	0 88	40 24		
Local field 170(S)	00	24		

Cycle Length 100 Control Type Pretimed Natural Cycle 100

Offset: 99 (99%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 12: J St & 5th St

♣ ø1	† ø2
60 s	40 s

	۶	-	*	•	4-	*	4	†	*	-	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations Ideal Flow (vphpl) Total Lost time (s)	1900	1900	1900	1900	††† 1900 4.0	1900	1900 4.0	↑↑ 1900 4.0	1900	1900	1900	1900
Lane Util. Factor					0.86		0.97	0.95				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.99		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6117		3433	3362				
FIt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6117		3433	3362	mannagi ing Miling Dani Halilan Tana			
Volume (vph)	0	0	0	0	753	81	108	764	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	753	81	108	764	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	36	0	43	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	798	0	65	764	0	0	0	0
Confl. Peds. (#/hr)						60		0.080.05 6 0				
Parking (#/hr)					0			0				
Turn Type					S.21 S.		Split					
Protected Phases					1		2	2				
Permitted Phases					16.5		26.5	26.5				
Actuated Green, G (s) Effective Green, g (s)					16.0		26.0	26.0				
Actuated g/C Ratio					0.32		0.52	0.52				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					1957		1785	1748				
v/s Ratio Prot					c0.13		0.02	c0.23				
v/s Ratio Perm					00.10		0.02	00.20				
v/c Ratio					0.41		0.04	0.44				
Uniform Delay, d1					13.3		5.9	7.5				
Progression Factor					1.00		1.99	1.26				
Incremental Delay, d2					0.6		0.0	0.6				
Delay (s)					13.9		11.7	10.0				
Level of Service					В		В	Α				
Approach Delay (s)		0.0			13.9			10.2			0.0	
Approach LOS		Α			В			В			Α	
Intersection Summary												
HCM Average Control E HCM Volume to Capaci			12.0 0.43		HCM Le	evel of S	ervice		В			
Actuated Cycle Length			50.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity U) 1	88.8%		ICU Lev				E			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	WBT	NBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	20	30	
Maximum Split (%)	40.0%	60.0%	
Minimum Split (s)	20	30	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	5.5	14.5	
Flash Dont Walk (s)	11	12	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	15.5	35.5	
End Time (s)	35.5	15.5	
Yield/Force Off (s)	32		
Yield/Force Off 170(s)	21	0	
Local Start Time (s)	33.5		
Local Yield (s)	0	30	
Local Yield 170(s)	39	18	

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 32 (64%), Referenced to phase 1:WBT, Start of Yellow

Splits and Phases: 13: I St & 5th St

← ø1	♦ ø2
20 s	30 s

	۶		*	•	4	*	1	†	1	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተ _ጉ		7	ተተጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.91		0.86	0.86				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.98		1.00	1.00				
FIt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4913		1522	4806				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4913		1522	4806				
Volume (vph)	0	0	0	0	678	131	242	1247	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	678	131	242	1247	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	75	0	0	0	0	0
Lane Group Flow (vph)	0	0	Ō	0	798	0	167	1247	0	0	0	0
Confl. Peds. (#/hr)	i i nemer d in		ruges s a ne			60						
Turn Type							Split					
Protected Phases					4		2	2				
Permitted Phases												
Actuated Green, G (s)					21.5		21.5	21.5				
Effective Green, g (s)					21.0		21.0	21.0				
Actuated g/C Ratio					0.42		0.42	0.42				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					2063		639	2019				
v/s Ratio Prot					c0.16		0.11	c0.26				
v/s Ratio Perm												
v/c Ratio					0.39		0.26	0.62				
Uniform Delay, d1					10.0		9.4	11.4				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.5		1.0	1.4				
Delay (s)					10.6		10.4	12.8				
Level of Service					В		В	В				
Approach Delay (s)		0.0			10.6			12.4			0.0	
Approach LOS		Α			В			В			Α	
Intersection Summary												
HCM Volume to Consol	•		11.8		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci Actuated Cycle Length			0.50 50.0		Sum of	lost time) (c)		8.0			
Intersection Capacity U		1 000000000000000000000000000000000000	47.5%			el of Se			6.0 A			
Analysis Period (min)	unzauoi	Mga Perint (Pari) No.	15		IOO LEV	U U UC	1 4100		^			
c Critical Lane Group												



Phase Number	2	4	
Movement	NBTL	WBT	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%		
Minimum Split (s)	21.5	21.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	10	10	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	48.5	23.5	
End Time (s)	23.5	48.5	
Yield/Force Off (s)	20	45	
Yield/Force Off 170(s)	12		
Local Start Time (s)	3.5	28.5	
Local Yield (s)	25	0	
Local Yield 170(s)	17	42	
Intersection Summary			

Cycle Length 50
Control Type Pretimed
Natural Cycle 45

Offset: 45 (90%), Referenced to phase 4:WBT, Start of Yellow

Splits and Phases: 14: L St & 16th St

4	-
~~\ @2	ø4
25 s	25.s



Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected	EBL 1900	EBT 1900 4.0 0.86 0.99	1900	WBL 1900	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Ideal Flow (vphpl) Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected	1900	1900 4.0 0.86 0.99	1900	1900								
Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected	1900	1900 4.0 0.86 0.99	1900	1900							ተተቡ	
Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected		0.86 0.99			1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected		0.99									4.0	
Flpb, ped/bikes Frt Flt Protected											0.91	
Flpb, ped/bikes Frt Flt Protected											1.00	
Frt Flt Protected		1.00									1.00	
		0.97									1.00	
Pro-programme and the second s		1.00									0.98	
Satd. Flow (prot)		6139									5006	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		6139									5006	
Volume (vph)	0	677	188	0	0	0	0	0	0	206	444	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	677	188	0	0	0	0	0	0	206	444	0
RTOR Reduction (vph)	0	72	0	0	0	0	0	0	0	0	144	0
Lane Group Flow (vph)	0	793	0	0	0	0	0	Ö	0	0	506	0
Confl. Peds. (#/hr)	V	130	60	9	Ū	s.:: y	U	•	U	60	500	p rejetik u
Parking (#/hr)			- 00							00		0
Turn Type									<u> 18. 19. 19. 19. 19. 19. 19. 19. 19. 19. 19</u>	Split		U
Protected Phases										3piit 1	1	
Permitted Phases		2										
		07 E									15.5	
Actuated Green, G (s)		27.5										
Effective Green, g (s)		27.0									15.0	
Actuated g/C Ratio		0.54									0.30	
Clearance Time (s)	Service (1980)	3.5	24. USA 28. PARA USA 28.		50 J-505 - 55 - 6	Section 1	n Swassitte				3.5	4 10 mg (n. 15 mg/h)
Lane Grp Cap (vph)		3315									1502	
v/s Ratio Prot		c0.13									c0.10	
v/s Ratio Perm												
v/c Ratio		0.24									0.34	
Uniform Delay, d1		6.1									13.6	
Progression Factor		1.00									1.30	
Incremental Delay, d2		0.2									0.1	
Delay (s)		6.2									17.7	
Level of Service		Α									В	
Approach Delay (s)		6.2			0.0			0.0			17.7	
Approach LOS		Α			Α			Α			В	
Intersection Summary												
HCM Average Control De			11.2	1	HCM Le	vel of S	ervice		В			
HCM Volume to Capacity			0.27	en ar en	40.000	and the second second	. nariu de l'		s			
Actuated Cycle Length (s			50.0			ost time			8.0			
Intersection Capacity Util	ization	1	41.9%	1	CU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	SBTL	EBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	19	31	
Maximum Split (%)	38.0%	62.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s)) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	22.5	41.5	
End Time (s)	41.5	22.5	
Yield/Force Off (s)	38	19	
Yield/Force Off 170(s)	30	11	
Local Start Time (s)	3.5	22.5	
Local Yield (s)	19	0	
Local Yield 170(s)	11	42	

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 19 (38%), Referenced to phase 2:EBT, Start of Yellow

Splits and Phases: 1: Q St & 3rd St

№ ø1	→ ø2
19 s	31 s

	۶	-	7	•	-	*	1	†	*	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተጉ						<u>ተ</u> ጉ	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	4.0
Lane Util. Factor					0.91						0.91	0.91
Frpb, ped/bikes					1.00						0.97	0.93
Flpb, ped/bikes					1.00						1.00	1.00
Frt					1.00						0.94	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					4903						2922	1205
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					4903						2922	1205
Volume (vph)	0	0	0	137	2521	0	0	0	0	0	513	773
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	137	2521	0	0	0	0	0	513	773
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	1	1
Lane Group Flow (vph)	0	0	0	0	2646	0	0	Ō	0	Ō	898	386
Confl. Peds. (#/hr)		en ummer a ti	n newarn	60	er and the			u naka is <u>a</u> vi	i en			60
Parking (#/hr)				0	0						0	0
Turn Type				Split								Perm
Protected Phases				2	2						1	
Permitted Phases											The Selling Confession	1
Actuated Green, G (s)					27.5						15.5	15.5
Effective Green, g (s)					27.0						15.0	15.0
Actuated g/C Ratio					0.54						0.30	0.30
Clearance Time (s)					3.5						3.5	3.5
Lane Grp Cap (vph)		Asya Bollay		A Marie Sa	2648		y design	vonstanna)V	s e obya	and the second	877	362
v/s Ratio Prot					c0.54						0.31	002
v/s Ratio Perm					00.04						0.01	c0.32
v/c Ratio					1.00						1.02	1.07
Uniform Delay, d1					11.5						17.5	17.5
Progression Factor					1.00						1.00	1.00
Incremental Delay, d2					17.3						36.5	65.6
Delay (s)					28.8						54.0	83.1
Level of Service					20.0 C						04.0 D	55.1 F
Approach Delay (s)		0.0			28.8			0.0			62.8	North St.
Approach LOS		Ο.0			20.0 C			Α			02.0 E	
		•									_	
Intersection Summary HCM Average Control D)elav		39.9		HCM Le	val of S	envice		D			
HCM Volume to Capaci			1.02		I IOWI LE	vei 01 3	ei vice		ט			
Actuated Cycle Length (50.0	er green of disco	Sum of	act time	\ (c)		8.0			
Intersection Capacity Ut			94.5%		Sum or ICU Lev				6.0 F			
Analysis Period (min)	.iii∠aliUII		15		ICO LEV	ei 0i 36	IVICE		r Systemici			
c Critical Lane Group			10									
o Ontical Lane Group							~					



Phase Number	1	2	
Movement	SBT	WBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max		
Maximum Split (s)	19	31	
Maximum Split (%)		62.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4		
Vehicle Extension (s)	3		
Minimum Gap (s)	3		
Time Before Reduce (s		_	
Time To Reduce (s)	0		
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes		
Inhibit Max	Yes		
Start Time (s)	40.5		
End Time (s)	9.5		
Yield/Force Off (s)	6	-	
Yield/Force Off 170(s)	48		
Local Start Time (s)	3.5		
Local Yield (s)	19		
Local Yield 170(s)	11	42	
		al to a kustisti on faction fille	

Cycle Length 50
Control Type Pretimed
Natural Cycle 75

Offset: 37 (74%), Referenced to phase 2:WBTL, Start of Yellow

Splits and Phases: 2: P St & 3rd St

₩ ø1	₹ ø2
19 s	31 s

	-	*	-	↓	\	\			
Movement	EBT	EBR	SBL	SBT	SEL	SER			
Lane Configurations	ĵ >			444	ኻ፞፞፞ጞ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Total Lost time (s)	4.0			4.0	4.0				
Lane Util. Factor	1.00			0.91	0.97				
Frpb, ped/bikes	0.98			1.00	1.00				
Flpb, ped/bikes	1.00			1.00	1.00				
Frt	0.97			1.00	0.91				
Flt Protected	1.00			0.99	0.98				
Satd. Flow (prot)	1777			5054	3224				
Flt Permitted	1.00			0.99	0.98				
Satd. Flow (perm)	1777			5054	3224				
Volume (vph)	81	19	148	1059	154	232			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00			
Adj. Flow (vph)	81	19	148	1059	154	232			
RTOR Reduction (vph)	12	0	0	26	0	0			
Lane Group Flow (vph)	88	ő	Ő	1181	386	ŏ			
Confl. Peds. (#/hr)	J	60	60		000				
Parking (#/hr)		- 00	0						
Turn Type		<u> </u>	Split						
Protected Phases	6		4	4	5				
Permitted Phases	U		reggion (TO)	erie – Ali g e	•				
Actuated Green, G (s)	12.5			32.5	14.5				
Effective Green, g (s)	12.0			32.0	14.0				
Actuated g/C Ratio	0.17			0.46	0.20				
Clearance Time (s)	3.5			3.5	3.5				
Lane Grp Cap (vph)	305			2310	645				
v/s Ratio Prot	c0.05			c0.23	c0.12				
v/s Ratio Perm	60.00			00.20	60.12				
v/c Ratio	0.29			0.51	0.60				
Uniform Delay, d1	25.3			13.5	25.4				
Progression Factor	1.00			1.10	1.00				
Incremental Delay, d2	2.4			0.6	4.1				
Delay (s)	27.6			15.4	29.5				
Level of Service	27.0 C			15.4 B	29.5 C				
Approach Delay (s)	27.6			15.4	29.5				
Approach LOS	27.0 C			15.4 B	29.5 C				
		100 - 1 T 100 -	National Association (Association Control of	U	U		14.6 B. 1		
Intersection Summary									
HCM Average Control [19.3		HCM Le	vel of Service		В	
HCM Volume to Capaci			0.49		A Linder of the second	10 - 25 m C 12 m		. 3	
Actuated Cycle Length			70.0			ost time (s)		12.0	
Intersection Capacity U	tilization	١	55.6%		CU Lev	el of Service		В	
Analysis Period (min)			15						
c Critical Lane Group									

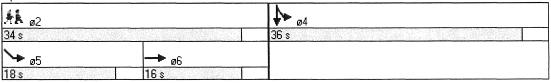
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Phase Number	2	4	5	6
Movement	Ped	SBTL	SEL	EBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	34	36	18	16
Maximum Split (%)	48.6%	51.4%	25.7%	22.9%
Minimum Split (s)	34	36	7.5	16
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0	0	0	0
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	19.5	23.5		4.5
Flash Dont Walk (s)	11	9		8
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	
Start Time (s)	12.5	46.5	12.5	30.5
End Time (s)	46.5	12.5	30.5	46.5
Yield/Force Off (s)	43	9	27	43
Yield/Force Off 170(s)	32			
Local Start Time (s)	3.5	37.5	3.5	21.5
Local Yield (s)	34	0	18	34
Local Yield 170(s)	23	61	18	26

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

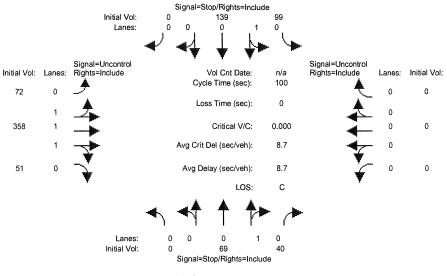
Offset: 9 (13%), Referenced to phase 4:SBTL, Start of Yellow

Splits and Phases: 3: N St & 3rd St



Level Of Service Computation Report 2000 HCM Unsignalized (Future Volume Alternative) Near Term PM

Intersection #4: N St./4th St.



Street Name:		4th	ı St			N St					
Approach:	North B	ound	Sou	ith Bo	ound	Εá	ast Bo	ound	W∈	st Bo	ound
Movement: L	- T	- R	L -	- T	- R	L -	- T	- R	L -	· T	- R
Volume Module:											
Base Vol:	0 69	40	99	139	0	72	358	51	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 69	40	99	139	0	72	358	51	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:	0 69	40	99	139	0	72	358	51	0	0	0
User Adj: 1.	00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj: 1.	00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0 69	40	99	139	0	72	358	51	0	0	0
Reduct Vol:	O C	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0 69	40	99	139	0	72	358	51	0	0	0
Critical Gap Mc											
Critical Gp:xxx	xx 6.5	6.2	7.1	6.5	XXXXX	4.1	XXXX	XXXXX	XXXXX	XXXX	XXXXX
FollowUpTim:xxx											
Capacity Module	:										
Cnflict Vol: xx	xx 543	145	313	568	XXXXX	15	XXXX	XXXXX	XXXX	XXXX	XXXXX
Potent Cap.: xx	xx 450	908	644	435	XXXXX	1616	XXXX	XXXXX	XXXX	XXXX	XXXXX
Move Cap.: xx	xx 423	908	512	409	XXXXX	1596	XXXX	XXXXX	XXXX	XXXX	XXXXX
Volume/Cap: xx					XXXX			XXXX			XXXX
Level Of Service	e Modul	.e:									
Queue: xxx	XX XXXX	XXXXX	XXXXX	XXXX	XXXXX	0.1	XXXX	XXXXX	XXXXX	XXXX	XXXXX
Stopped Del:xxx						7.4			XXXXX		
LOS by Move:			*	*	*	Α	*	*	*	*	*
Movement: I	T - LTF					LT	- LTR	- RT	LT ·	- LTR	- RT
Shared Cap.: xx					XXXXX				XXXX		
SharedQueue:xxx									XXXXX		
Shrd StpDel:xxx									XXXXX		
Shared LOS:			С		*	A	*	*	*	*	*
ApproachDel:	13.6	5		21.9		X	XXXXX		X.		
ApproachLOS:	В			С			*			*	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		444		·				ተተጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.98				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5049						4953				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5049	8 (1 (4 () 4 () 1 () 2 () 1	o tatuarena a			The Sagner of Table Non-Sec.	4953		Start Serial Laborator		
Volume (vph)	72	427	0	0	0	0	0	843	125	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	72	427	0	0	0	0	0	843	125	0	0	0
RTOR Reduction (vph)	0	33	0	0	0	0	0	28	0	0	0	0
Lane Group Flow (vph)	0	466	0	0	0	0	0	940	0	0	0	0
Confl. Peds. (#/hr)	60		an other and						60			
Parking (#/hr)	0		0						0			
Turn Type	Split											
Protected Phases	1	1						2				
Permitted Phases												
Actuated Green, G (s)		31.5						31.5				
Effective Green, g (s)		31.0						31.0				
Actuated g/C Ratio		0.44						0.44				
Clearance Time (s)		3.5	and the second of the	1 10 10 10 10 10 10 10 10 10 10 10 10 10			a 536. Vo. 75-a.	3.5	78 - B. S. D. S. B. (0.16.8)		Year and the second	5. 12 887 84 88 12
Lane Grp Cap (vph)		2236						2193				
v/s Ratio Prot		c0.09						c0.19				
v/s Ratio Perm												
v/c Ratio		0.21						0.43				
Uniform Delay, d1		12.0						13.4				
Progression Factor		1.25						1.00				
Incremental Delay, d2		0.2						0.6				
Delay (s)		15.2						14.0				
Level of Service		B						B			0.0	
Approach Delay (s)		15.2			0.0			14.0			0.0	
Approach LOS		В			Α			В			Α	
Intersection Summary											÷	
HCM Average Control [14.4		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.32									
Actuated Cycle Length			70.0			lost time			8.0			
Intersection Capacity U	tilization	1	42.2%		CU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	35	35	
Maximum Split (%)	50.0%		
Minimum Split (s)	34.5	34.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3		
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	22	22	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	65.5	30.5	
End Time (s)	30.5	65.5	
Yield/Force Off (s)	27	62	
Yield/Force Off 170(s)	18	53	
Local Start Time (s)	38.5	3.5	
Local Yield (s)	0	35	
Local Yield 170(s)	61	26	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 27 (39%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 5: N St & 5th St

♣ ø1	† ø2
35 s	35 s

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
ane Configurations		ተ ተጉ		ኻ	十 十						नाक	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
ane Util. Factor		0.91		1.00	0.95						0.86	
rpb, ped/bikes		1.00		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
-rt		0.99		1.00	1.00						0.94	
FIt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		5025		1770	3539						5997	
Flt Permitted		1.00		0.95	1.00						1.00	
		5025		1770	3539						5997	
Satd. Flow (perm)			0.4				^		•	70		70/
Volume (vph)	0	594	31	274	632	0	0	0	0	79	924	706
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	594	31	274	632	0	0	0	0	79	924	706
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	133	(
Lane Group Flow (vph)	0	617	0	274	632	0	0	0	0	0	1576	(
Confl. Peds. (#/hr)			60									
Parking (#/hr)										0		
Turn Type				Prot						Split		
Protected Phases		6		5	2					4	4	
Permitted Phases												
Actuated Green, G (s)		16.0		16.5	36.0						25.5	
Effective Green, g (s)		15.5		16.0	35.5						26.5	
Actuated g/C Ratio		0.22		0.23	0.51						0.38	
Clearance Time (s)		3.5		3.5	3.5						5.0	
Lane Grp Cap (vph)		1113		405	1795						2270	
v/s Ratio Prot		c0.12		c0.15	0.18						c0.26	
v/s Ratio Perm		CO. 12		60.15	0.10						00.20	
		0.55		0.68	0.35						0.95dr	
v/c Ratio											18.3	
Uniform Delay, d1		24.2		24.6	10.3							
Progression Factor		1.00		0.51	0.87						0.82	
Incremental Delay, d2		2.0		8.5	0.5						1.3	
Delay (s)		26.2		21.1	9.6						16.3	
Level of Service		С		С	Α						В	
Approach Delay (s)		26.2			13.1			0.0			16.3	
Approach LOS		С			В			Α			В	
Intersection Summary											1	
HCM Average Control D			17.3	1	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.65									
Actuated Cycle Length ((s)		70.0		Sum of	ost time	e (s)		12.0			
Intersection Capacity Ut		1	65.0%	1	CU Lev	el of Se	rvice		С			
Analysis Period (min)			15									

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Phase Number	2	4	5	6	
Movement	WBT	SBTL	WBL	EBT	
Lead/Lag			Lead	Lag	
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	39.5	30.5	20	19.5	
Maximum Split (%)	56.4%	43.6%	28.6%	27.9%	
Minimum Split (s)	39.5	30.5	7.5	19.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	1.5	0	0	
Minimum Initial (s)	4	4	4	4	
Vehicle Extension (s)	3	3		3	
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s) 0	0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)	26	20.5		6	
Flash Dont Walk (s)	10	5		10	
Dual Entry	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	
Start Time (s)	18.5	58	18.5	38.5	
End Time (s)	58	18.5	38.5	58	
Yield/Force Off (s)	54.5	13.5	35	54.5	
Yield/Force Off 170(s)	44.5	8.5	35	44.5	
Local Start Time (s)	53.5	23	53.5	3.5	
Local Yield (s)	19.5	48.5	0	19.5	
Local Yield 170(s)	9.5	43.5	0	9.5	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 35 (50%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow

Splits and Phases: 6: Capitol Mall & 3rd St

← ø2		₩ 04
39.5 s		30.5 s
√ ø5	→ ø6	
20 s	19.5 s	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		44	7"		€1 ↑₽			4			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.0			4.0	
Lane Util. Factor		0.95	1.00		0.91			1.00			1.00	
Frpb, ped/bikes		1.00	0.87		1.00			0.99			0.99	
Flpb, ped/bikes		1.00	1.00		1.00			0.98			0.99	
Frt		1.00	0.85		1.00			0.98			0.99	
Flt Protected		1.00	1.00		1.00			0.98			0.99	
Satd. Flow (prot)		3539	1380		5039			1573			1612	
Flt Permitted		1.00	1.00		1.00			0.86			0.90	
Satd. Flow (perm)		3539	1380		5039			1379			1467	
Volume (vph)	0	648	25	0	832	28	63	110	25	41	120	11
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	648	25	0	832	28	63	110	25	41	120	11
RTOR Reduction (vph)	0	0	12	0	5	0	0	7	0	0	3	0
Lane Group Flow (vph)	0	648	13	0	855	0	0	191	0	0	169	0
Confl. Peds. (#/hr)	60		60	60		60	60		60	60		60
Parking (#/hr)							0	0	0	0	0	0
Turn Type	Perm	auroaco, univirsa o esta e quincia de	Perm	Perm			Perm			Perm		***************************************
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)		38.0	38.0		38.0			23.5			23.5	
Effective Green, g (s)		37.5	37.5		37.5			24.5			24.5	
Actuated g/C Ratio		0.54	0.54		0.54			0.35			0.35	
Clearance Time (s)		3.5	3.5		3.5			5.0			5.0	
Lane Grp Cap (vph)		1896	739		2699		A Company	483			513	
v/s Ratio Prot		c0.18			0.17							
v/s Ratio Perm			0.01					c0.14			0.12	
v/c Ratio		0.34	0.02		0.32			0.40			0.33	
Uniform Delay, d1		9.2	7.6		9.1			17.2			16.7	
Progression Factor		1.21	1.59		0.23			0.89			1.00	
Incremental Delay, d2		0.4	0.0		0.3			2.4			1.5	
Delay (s)		11.5	12.1		2.3			17.7			18.1	
Level of Service		В	В		Α			В			В	
Approach Delay (s)		11.6			2.3			17.7			18.1	
Approach LOS		В			Α			В			В	
Intersection Summary												
HCM Average Control D			8.6		HCM Le	vel of S	ervice		Α			
HCM Volume to Capaci			0.36									
Actuated Cycle Length (70.0			lost time			8.0			
Intersection Capacity Ut		l	55.2%									
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	2	4	
Movement	EBWB	NBSB	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	41.5	28.5	
Maximum Split (%)	59.3%	40.7%	
Minimum Split (s)	22.5	20	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0 5	
Walk Time (s)	9		
Flash Dont Walk (s)	10	10	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	59	30.5	
End Time (s)	30.5		
Yield/Force Off (s)	27	54	
Yield/Force Off 170(s)		44	
Local Start Time (s)	32		
Local Yield (s)	0	27	
Local Yield 170(s)	60	17	
Intersection Summary			
Cycle Length			70

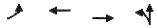
Cycle Length 70
Control Type Pretimed
Natural Cycle 45

Offset: 27 (39%), Referenced to phase 2:EBWB, Start of Yellow

Splits and Phases: 7: Capitol Mall & 4th St

φ2	11 04
41.5 s	28.5 s

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	个个			ተተ _ጉ		77	ተተ ጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	0.97	0.95			0.91		0.97	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			4983		3433	4922				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			4983		3433	4922				
Volume (vph)	341	373	0	0	582	55	278	675	94	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	341	373	0	0	582	55	278	675	94	0	0	0
RTOR Reduction (vph)	0	0	0	0	16	0	0	26	0	0	0	0
Lane Group Flow (vph)	341	373	0	0	621	0	278	743	0	0	0	0
Confl. Peds. (#/hr)						60			60			
Turn Type	Prot						Split					
Protected Phases	1	6			2		8	8				
Permitted Phases												
Actuated Green, G (s)	14.5	36.5			18.5		25.0	25.0				
Effective Green, g (s)	14.0	36.0			18.0		26.0	26.0				
Actuated g/C Ratio	0.20	0.51			0.26		0.37	0.37				
Clearance Time (s)	3.5	3.5			3.5		5.0	5.0				
Lane Grp Cap (vph)	687	1820			1281		1275	1828				
v/s Ratio Prot	c0.10	0.11			c0.12		0.08	c0.15				
v/s Ratio Perm												
v/c Ratio	0.50	0.20			0.49		0.22	0.41				
Uniform Delay, d1	24.9	9.2			22.1		15.0	16.3				
Progression Factor	0.83	0.22			1.00		0.48	0.43				
Incremental Delay, d2	2.4	0.2			1.3		0.4	0.6				
Delay (s)	23.0	2.3			23.4		7.6	7.7				
Level of Service	С	Α			С		Α	Α				
Approach Delay (s)		12.2			23.4			7.7			0.0	
Approach LOS		В			С			Α			Α	
Intersection Summary												
HCM Average Control [13.2		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.45									
Actuated Cycle Length			70.0			lost time			12.0			
Intersection Capacity U	tilizatior	1	49.6%		ICU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	6	8	
Movement	EBL	WBT	EBT	NBTL	
Lead/Lag	Lag	Lead			
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	18	22	40	30	
	25.7%	31.4%	57.1%	42.9%	
Minimum Split (s)	7.5	20.5	20.5	17	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	0	1.5	
Minimum Initial (s)	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s)	0	0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)		7	7	7	
Flash Dont Walk (s)		10	10	5	
Dual Entry	No	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	
Start Time (s)	20.5	68.5	68.5	38.5	
End Time (s)	38.5				
Yield/Force Off (s)	35		35		
Yield/Force Off 170(s)	35			58.5	
Local Start Time (s)	55.5				
Local Yield (s)	0		e' - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- 5275	
Local Yield 170(s)	0	42	60	23.5	

Cycle Length 70
Control Type Pretimed
Natural Cycle 50

Offset: 35 (50%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow

Splits and Phases: 8: Capitol Mall & 5th St

← ø2	→ ø1	★ №
22 s	18 s	30 s
→ ø6		
40 s		

	>	-	*	•	-	•	1	†	<i>></i>	-	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				4	ተጉ	7"					ተተጐ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0					4.0	
Lane Util. Factor				0.91	0.91	1.00					0.91	
Frt				1.00	1.00	0.85					0.99	
Flt Protected				0.95	0.99	1.00					1.00	
Satd. Flow (prot)				1610	3366	1583					5044	
Flt Permitted				0.95	0.99	1.00					1.00	
Satd. Flow (perm)			***	1610	3366	1583			overiorite article in the state of the state		5044	
Volume (vph)	0	0	0	904	1260	263	0	0	0	0	804	46
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	904	1260	263	0	0	0	0	804	46
RTOR Reduction (vph)	0	0	0	3	3	90	0	0	0	0	9	0
Lane Group Flow (vph)	0	0	0	694	1464	173	0	0	0	0	841	0
Turn Type			(custom	(custom						
Protected Phases											4	
Permitted Phases				2	2	2						
Actuated Green, G (s)				46.5	46.5	46.5					16.5	
Effective Green, g (s)				46.0	46.0	46.0					16.0	
Actuated g/C Ratio				0.66	0.66	0.66					0.23	
Clearance Time (s)				3.5	3.5	3.5					3.5	
Lane Grp Cap (vph)				1058	2212	1040					1153	
v/s Ratio Prot											c0.17	
v/s Ratio Perm				0.43	c0.43	0.11						
v/c Ratio				0.66	0.66	0.17					0.73	
Uniform Delay, d1				7.2	7.3	4.6					25.0	
Progression Factor				0.69	0.68	0.46					1.00	
Incremental Delay, d2				3.0	1.5	0.3					4.1	
Delay (s)				8.0	6.4	2.4					29.1	
Level of Service				Α	Α	Α					С	
Approach Delay (s)		0.0			6.4			0.0			29.1	
Approach LOS		Α			Α			Α			С	
Intersection Summary												
HCM Average Control D	elay		12.3		HCM Le	vel of S	ervice		В			
HCM Volume to Capacit	ty ratio		0.68									
Actuated Cycle Length (70.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity Ut		1	64.0%	l	ICU Lev	el of Se	rvice		В			
Analysis Period (min) c Critical Lane Group			15									



Phase Number	2	4	
Movement	WBTL	SBT	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	50	20	
Maximum Split (%)	71.4%	28.6%	
Minimum Split (s)	7.5	20	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s)) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)		8.5	
Flash Dont Walk (s)		8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	66.5	46.5	
End Time (s)	46.5	66.5	
Yield/Force Off (s)	43	63	
Yield/Force Off 170(s)	43	55	
Local Start Time (s)	3.5	53.5	
Local Yield (s)	50	0	
Local Yield 170(s)	50	62	

Cycle Length 70
Control Type Pretimed
Natural Cycle 60

Offset: 63 (90%), Referenced to phase 4:SBT, Start of Yellow

Splits and Phases: 9: L St & 3rd St

15 mg 2	₩ ø4
50 s	20 s

	۶	-	*	•	4	*	4	†	<i>></i>	1	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					####	-	ħ	ተተተ				77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		1.00	0.91				0.88
Frpb, ped/bikes					1.00		1.00	1.00				0.93
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6340		1770	5085				2585
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6340		1770	5085				2585
Volume (vph)	0	0	0	. 0	1816	105	390	680	0	0	0	188
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	1816	105	390	680	0	0	0	188
RTOR Reduction (vph)	0	0	0	0	12	0	11	0	0	0	0	14
Lane Group Flow (vph)	0	0	0	0	1909	0	379	680	0	0	0	174
Confl. Peds. (#/hr)						60	60		governing the second second second			60
Turn Type							Split				(custom
Protected Phases					2		1	1				
Permitted Phases												1
Actuated Green, G (s)					40.0		20.5	20.5				20.5
Effective Green, g (s)					41.0		21.0	21.0				21.0
Actuated g/C Ratio					0.59		0.30	0.30				0.30
Clearance Time (s)					5.0		4.5	4.5				4.5
Lane Grp Cap (vph)					3713		531	1526				776
v/s Ratio Prot					c0.30		c0.21	0.13				
v/s Ratio Perm												0.07
v/c Ratio					0.51		0.71	0.45				0.22
Uniform Delay, d1					8.6		21.8	19.8				18.4
Progression Factor					1.00		0.61	0.63				1.00
Incremental Delay, d2					0.5		7.3	0.9				0.7
Delay (s)					9.1		20.6	13.4				19.1
Level of Service		. On all said			Α		С	В				В
Approach Delay (s)		0.0			9.1			16.0			19.1	
Approach LOS		Α			Α			В			В	
Intersection Summary												
HCM Average Control [12.0	١	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.58						Tarija.			
Actuated Cycle Length	. ,		70.0			lost time			8.0			
Intersection Capacity Union Analysis Period (min) C Critical Lane Group	tilizatior		81.2% 15		CU Lev	el of Se	rvice		D			



Phase Number	1	2	
Movement	NBTL	WBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	45	
Maximum Split (%)	35.7%	64.3%	
Minimum Split (s)	25	45	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	1	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	1.	0	
Time To Reduce (s)	0	0	
Walk Time (s)	11.5	31	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	37	62	
End Time (s)	62	37	
Yield/Force Off (s)	57.5	32	
Yield/Force Off 170(s)	48.5	23	
Local Start Time (s)	5	30	
Local Yield (s)	25.5	0	
Local Yield 170(s)	16.5	61	
	o Consider Partition and House	to supremental and supre	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 32 (46%), Referenced to phase 2:WBT, Start of Yellow

Splits and Phases: 10: L St & 5th St

♦	← ø2
25 s	45 s

	≯	-	*	†	*	-	↓	•	\	-	
Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	SEL2	SEL	SER	
Lane Configurations		414		†	7	ሻ	ተጉ		ት ነነት		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0		4.0		
Lane Util. Factor		0.91		0.95	0.95	0.91	0.91		0.91		
Frpb, ped/bikes		0.99		1.00	1.00	1.00	1.00		0.97		
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00		1.00		
Frt		0.98		0.98	0.85	1.00	1.00		0.96		
Flt Protected		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (prot)		4955		1733	1504	1610	3372		6094		
Flt Permitted		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (perm)		4955		1733	1504	1610	3372		6094		
Volume (vph)	1	653	79	120	161	229	350	7	1159	421	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	1	653	79	120	161	229	350	7	1159	421	
RTOR Reduction (vph)	0	15	0	5	44	0	0	0	0	0	
Lane Group Flow (vph)	0	718	0	134	98	187	392	0	1587	0	
Confl. Peds. (#/hr)	· . · · · · · · · · · · · · · · · · · ·	or or a second	60	e Carása.						60	
Turn Type	Split				Perm	Split		Split			
Protected Phases	3	3		5		1	1	2	2		
Permitted Phases	the S				5						
Actuated Green, G (s)		23.0		12.0	12.0	17.5	17.5		32.0		
Effective Green, g (s)		23.0		12.0	12.0	17.0	17.0		32.0		
Actuated g/C Ratio		0.23		0.12	0.12	0.17	0.17		0.32		
Clearance Time (s)		4.0		4.0	4.0	3.5	3.5		4.0		
Lane Grp Cap (vph)		1140		208	180	274	573		1950		
v/s Ratio Prot		c0.14		c0.08		0.12	c0.12		c0.26		
v/s Ratio Perm					0.07	. ,	7:5:5:0:0				
v/c Ratio		0.63		0.64	0.54	0.68	0.68		0.88dr		
Uniform Delay, d1		34.7		42.0	41.4	39.0	39.0		31.3		
Progression Factor		1.00		1.00	1.00	0.92	0.92		1.00		
Incremental Delay, d2		2.6		14.3	11.3	12.5	6.3		3.9		
Delay (s)		37.3		56.3	52.8	48.5	42.3		35.1		
Level of Service		D		E	D	D	D		D		
Approach Delay (s)		37.3		54.5			44.3		35.1		
Approach LOS		D		D			D		D		
Intersection Summary											
HCM Average Control I			39.0		HCM Le	evel of S	ervice		D		
HCM Volume to Capac			0.71								
Actuated Cycle Length			100.0			lost time			16.0		
Intersection Capacity U	Itilizatio	i	79.6%		ICU Lev	el of Se	rvice		D		
Analysis Period (min)			15								
dr Defacto Right Lane	e. Reco	de with		jh lane a	as a rigl	nt lane.					

c Critical Lane Group

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Phase Number	1	2	3	5	6	
Movement	SBTL	SEL	EBTL	NBT	Ped	
Lead/Lag	Lead	Lag				
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max	Max	
Maximum Split (s)	21	36	27	16	73	
Maximum Split (%)	21.0%	36.0%	27.0%	16.0%	73.0%	
Minimum Split (s)	7.5	36	27	8	73	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0.5	0.5	0.5	0.5	
Minimum Initial (s)	4	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	3	
Minimum Gap (s)	3	3	3	3	3	
Time Before Reduce (s) 0	0	0	0	0	
Time To Reduce (s)	0	0	0	0	0	
Walk Time (s)		21	12		58	
Flash Dont Walk (s)		11	11		11	
Dual Entry	Yes	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	Yes	
Start Time (s)	85	6	58	42	85	
End Time (s)	6	42	85	58	58	
Yield/Force Off (s)	2.5	38	81	54	54	
Yield/Force Off 170(s)	2.5	27	70	54	43	
Local Start Time (s)	47	68	20	4	47	
Local Yield (s)	64.5	0	43	16	16	
Local Yield 170(s)	64.5	89	32	16	5	

Intersection Summary

Cycle Length 100
Control Type Pretimed
Natural Cycle 100

Offset: 38 (38%), Referenced to phase 2:SEL, Start of Yellow

Splits and Phases: 11: J St & 3rd St

№ ø1	★ ø2	† ø5	♣ _{ø3}
21 s	36.8	16.8	27 s
Ák ø6			
73 s			

	۶	→	*	1	4	4	4	1	~	1	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	4111	7			***************************************		↑ ↑	7"			***************************************
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.81	1.00					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.95					1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.95	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	6035	1498					3231	1441			
Flt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	6035	1498					3231	1441			
Volume (vph)	324	1583	188	0	0	0	0	378	408	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	324	1583	188	0	0	0	0	378	408	0	0	0
RTOR Reduction (vph)	188	0	109	0	0	Ö	Ō	2	2	0	0	0
Lane Group Flow (vph)	136	1583	79	ő	ő	Ŏ	ŏ	549	233	ő	Ö	ŏ
Confl. Peds. (#/hr)	60	1000	60	Υ.							· · · · · · · · · · · · · · · · · · ·	•
Parking (#/hr)	0		- 00									
Turn Type	Split		Perm			94 B 84 8 B			Perm			
Protected Phases	3piit	14.001	1 61111					2	i Giiii			
Permitted Phases			1					_	2			
Actuated Green, G (s)	21.0	21.0	21.0					21.0	21.0			
Effective Green, g (s)	21.0	21.0	21.0					21.0	21.0			
	0.42	0.42	0.42					0.42	0.42			
Actuated g/C Ratio	4.0	4.0	4.0					4.0	4.0			
Clearance Time (s)				6.4.16.4.15		decyclogic New		1357			Sugar utim Sugar te	
Lane Grp Cap (vph)	542	2535	629						605			
v/s Ratio Prot	0.11	c0.26	0.05					c0.17	0.40			
v/s Ratio Perm	0.05	0.00	0.05					0.40	0.16			
v/c Ratio	0.25	0.62	0.13					0.40	0.38			
Uniform Delay, d1	9.4	11.4	8.9					10.1	10.0			
Progression Factor	0.31	0.54	0.30					1.00	1.00			
Incremental Delay, d2	0.7	0.8	0.3					0.9	1.8			
Delay (s)	3.7	6.9	2.9					11.0	11.9			
Level of Service	Α	Α	Α					В	В			
Approach Delay (s)		6.1			0.0			11.3			0.0	
Approach LOS		Α			Α			В			Α	
Intersection Summary												
HCM Average Control I			7.5		HCM Le	vel of S	ervice		Α			
HCM Volume to Capac			0.51			1.00 m . 1.00 m . 1.00 m			17 Salah (= 3 m)			
Actuated Cycle Length			50.0			lost time			8.0			
Intersection Capacity U	tilizatior	1	80.5%		ICU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												

4	†
Sep. 1	•

Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	25	25	
Yellow Time (s)	4	4	
All-Red Time (s)	0	0	
Minimum Initial (s)	4		
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	12	16	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	28	3	
End Time (s)	3	28	
Yield/Force Off (s)	49	24	
Yield/Force Off 170(s)	37	8	
Local Start Time (s)	29	4	
Local Yield (s)	0	25	
Local Yield 170(s)	38	9	

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 49 (98%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 12: J St & 5th St

	₱ ø2
25 (25 s

	۶	→	*	•	4-		1	†	<i>></i>	1	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					†††₽		44	ተተ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		0.97	0.95				
Frpb, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6224		3433	3362				
FIt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)	agus ann ann an air air an air air an air				6224		3433	3362	~		AND THE RESERVE OF THE PERSON	
Volume (vph)	0	0	0	0	2640	55	299	396	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	2640	55	299	396	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	0	14	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2692	0	285	396	0	0	0	0
Confl. Peds. (#/hr)						60						
Parking (#/hr)					0			0				
Turn Type		,					Split					
Protected Phases					1		2	2				
Permitted Phases												
Actuated Green, G (s)					75.5		17.5	17.5				
Effective Green, g (s)					75.0		17.0	17.0				
Actuated g/C Ratio					0.75		0.17	0.17				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					4668		584	572			144 AT 15	
v/s Ratio Prot					c0.43		0.08	c0.12				
v/s Ratio Perm												
v/c Ratio					0.58		0.49	0.69				
Uniform Delay, d1					5.5		37.6	39.0				
Progression Factor					1.00		1.03	1.03				
Incremental Delay, d2					0.5		2.7	6.2				
Delay (s)					6.0		41.5	46.5				
Level of Service					Α		D	D				
Approach Delay (s)		0.0			6.0			44.4			0.0	
Approach LOS		Α			Α			D			Α	
Intersection Summary												
HCM Average Control E HCM Volume to Capaci			13.9 0.60		HCM Le	vel of S	ervice		В			
Actuated Cycle Length ((s)		100.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity Ut Analysis Period (min)		լ 1	12.1% 15			el of Se			Н			
c Critical Lane Group												



Phase Number	1	2	
Movement	WBT	NBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	79	21	
Maximum Split (%)	79.0%	21.0%	
Minimum Split (s)	79	21	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4		
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s)		0	
Time To Reduce (s)	0		
Walk Time (s)	64.5		
Flash Dont Walk (s)	11	12	
Dual Entry	Yes	Yes	
Inhibit Max	Yes		
Start Time (s)	44.5		
End Time (s)	23.5		
Yield/Force Off (s)	20		
Yield/Force Off 170(s)	9	 * * * * * * * * * * * * * * * * * * *	
Local Start Time (s)	24.5	3.5	
Local Yield (s)	0	21	
Local Yield 170(s)	89	9	

Cycle Length 100
Control Type Pretimed
Natural Cycle 100

Offset: 20 (20%), Referenced to phase 1:WBT, Start of Yellow

Splits and Phases: 13: I St & 5th St

4-	4
[0	1 Ø2
79 s	21 s

	﴾	-	*	1	4		1	†	~	1	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተ _ጉ		ኻ	ተተኩ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.91		0.86	0.86				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4842		1522	4806				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4842		1522	4806				
Volume (vph)	0	0	0	0	668	198	260	1538	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	.0	0	668	198	260	1538	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	78	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	862	0	182	1538	0	0	0	0
Confl. Peds. (#/hr)						60						
Turn Type							Split					
Protected Phases					4		2	2				
Permitted Phases												
Actuated Green, G (s)					21.5		21.5	21.5				
Effective Green, g (s)					21.0		21.0	21.0				
Actuated g/C Ratio					0.42		0.42	0.42				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					2034		639	2019				
v/s Ratio Prot					c0.18		0.12	c0.32				
v/s Ratio Perm												
v/c Ratio					0.42		0.29	0.76				
Uniform Delay, d1					10.2		9.6	12.4				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.6		1.1	2.8				
Delay (s)					10.9		10.7	15.1				
Level of Service					В		В	В				
Approach Delay (s)		0.0			10.9			14.5			0.0	
Approach LOS		Α			В			В			Α	
Intersection Summary												
HCM Average Control D			13.3		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.59									
Actuated Cycle Length			50.0			lost time			8.0			
Intersection Capacity Ut Analysis Period (min)	uuzatior	MATERIAL PROPERTY.	54.6% 15		ICU Lev	el of Se	rvice		Α			
c Critical Lane Group												



Phase Number	2	4	
Movement	NBTL	WBT	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	21.5	21.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	10	10	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	48.5	23.5	
End Time (s)	23.5	48.5	
Yield/Force Off (s)	20	45	
Yield/Force Off 170(s)	12	37	
Local Start Time (s)	3.5	28.5	
Local Yield (s)	25	0	
Local Yield 170(s)	17	42	

Cycle Length 50
Control Type Pretimed
Natural Cycle 45

Offset: 45 (90%), Referenced to phase 4:WBT, Start of Yellow

Splits and Phases: 14: L St & 16th St

◀	4
25 s	25 s

1: Q St & 3rd St

	۶		*	•	4	4	1	†	1	-	ļ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		111 1 3									ተተቡ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.98									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.96									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		6036									4988	
FIt Permitted		1.00									0.98	
Satd. Flow (perm)		6036									4988	
Volume (vph)	0	2176	760	0	0	0	0	0	0	159	248	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2176	760	0	0	0	0	0	0	159	248	0
RTOR Reduction (vph)	0	63	0	0	0	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	2873	0	0	0	0	0	0	0	0	394	0
Confl. Peds. (#/hr)			60							60		
Parking (#/hr)										0		0
Turn Type										Split		
Protected Phases		2								1	1	
Permitted Phases											e e a ar a maio	
Actuated Green, G (s)		71.5									21.5	
Effective Green, g (s)		71.0									21.0	
Actuated g/C Ratio		0.71									0.21	
Clearance Time (s)		3.5	and American		State of State St		ever plant in the				3.5	eria i progresi i
Lane Grp Cap (vph)		4286									1047	
v/s Ratio Prot		c0.48									c0.08	
v/s Ratio Perm												
v/c Ratio		0.67									0.38	
Uniform Delay, d1		8.0									33.9	
Progression Factor		1.00									0.87	
Incremental Delay, d2		0.8									1.0	
Delay (s)		8.9									30.5	
Level of Service		A									C	
Approach Delay (s)		8.9			0.0			0.0			30.5	
Approach LOS		Α			Α			Α			С	
Intersection Summary												
HCM Average Control I			11.5		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci	•		0.60		2000.000.000							
Actuated Cycle Length			100.0			lost time			8.0			
Intersection Capacity U	tilization		60.9%		CU Lev	el of Se	rvice		В			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	SBTL	EBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	75	
	25.0%	75.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s)		0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	90.5	15.5	
End Time (s)	15.5	90.5	
Yield/Force Off (s)	12	87	
Yield/Force Off 170(s)	4	79	
Local Start Time (s)	3.5	28.5	
Local Yield (s)	25		
Local Yield 170(s)	17	92	
Intersection Summary			

Cycle Length 100 Control Type Pretimed Natural Cycle

Offset: 87 (87%), Referenced to phase 2:EBT, Start of Yellow

Splits and Phases: 1: Q St & 3rd St

№ ø1	→ ø2
25 s	75 s

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•	→	*	•	-	4	1	†	/	-	+	1
Movement EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				ተተኩ					ACCOUNTED TO A STATE OF THE STA	ት ጮ	7
Ideal Flow (vphpl) 1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0						4.0	4.0
Lane Util. Factor				0.91						0.91	0.91
Frpb, ped/bikes				1.00						0.98	0.93
Flpb, ped/bikes				1.00						1.00	1.00
Frt				1.00						0.97	0.85
Fit Protected				0.99						1.00	1.00
Satd. Flow (prot)				4870 0.99						3058 1.00	1205 1.00
Fit Permitted				4870						3058	1205
Satd. Flow (perm) Volume (vph) 0	0	0	132	568	0	0	0	0	0	275	251
Volume (vph) 0 Peak-hour factor, PHF 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph) 0	0.00	0.00	132	568	1.00	1.00	0.00	0.00	1.00	275	251
RTOR Reduction (vph) 0	0	0	0	61	0	0	0	0	0	53	118
Lane Group Flow (vph) 0	0	0	0	639	0	0	Ö	0	0	306	50
Confl. Peds. (#/hr)		•	60	000	•	yes in the Section	100000		, kaya 19 9 .	999	60
Parking (#/hr)			0	0						0	0
Turn Type			Split							<u> </u>	Perm
Protected Phases			2	2						1	
Permitted Phases											1
Actuated Green, G (s)				27.5						15.5	15.5
Effective Green, g (s)				27.0						15.0	15.0
Actuated g/C Ratio				0.54						0.30	0.30
Clearance Time (s)				3.5						3.5	3.5
Lane Grp Cap (vph)				2630						917	362
v/s Ratio Prot				c0.13						c0.10	
v/s Ratio Perm											0.04
v/c Ratio				0.24						0.33	0.14
Uniform Delay, d1				6.1						13.6	12.8
Progression Factor				1.00						1.00	1.00
Incremental Delay, d2				0.2						1.0	0.8
Delay (s)				6.3						14.6	13.6
Level of Service	0.0			A 6.3			0.0			B 14.3	В
Approach Delay (s) Approach LOS	0.0 A			6.3 A			0.0 A			14.3 B	
										J	
Intersection Summary HCM Average Control Delay		9.7		J CM1 o	vel of S	ondoo		A			
HCM Volume to Capacity ratio		0.28	elgen in di	ICIVI LE	vei oi Si	SI VICE					
Actuated Cycle Length (s)		50.0		Sum of I	lost time	(s)		8.0			
Intersection Capacity Utilization		35.2%			el of Se			Α			
Analysis Period (min)				area de carea la	4	and the second					
c Critical Lane Group		15									



Phase Number	1	2	
Movement	SBT	WBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	19	31	
Maximum Split (%)	38.0%	62.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4		
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	40.5	9.5	
End Time (s)	9.5	40.5	
Yield/Force Off (s)	6	37	
Yield/Force Off 170(s)	48	29	
Local Start Time (s)	3.5	22.5	
Local Yield (s)	19	0	
Local Yield 170(s)	11	42	

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 37 (74%), Referenced to phase 2:WBTL, Start of Yellow

Splits and Phases: 2: P St & 3rd St

₩ ø1	₹ ø2
19s	31 s

	eranan <mark>i</mark> ja	7	-	\	*	\		
Movement	EBT	EBR	SBL	SBT	SEL	SER		
Lane Configurations	\$			414	ሻ ሻ			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0			4.0	4.0			
Lane Util. Factor	1.00			0.91	0.97			
Frpb, ped/bikes	0.98			1.00	1.00			
Flpb, ped/bikes	1.00			1.00	1.00			
Frt	0.98			1.00	0.95			
Flt Protected	1.00			0.98	0.97			
Satd. Flow (prot)	1798			4962	3333			
Flt Permitted	1.00			0.98	0.97			
Satd. Flow (perm)	1798			4962	3333			
Volume (vph)	78	13	374	381	326	143		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00		
Adj. Flow (vph)	78	13	374	381	326	143		
RTOR Reduction (vph)	8	0	0	213	0	0		
Lane Group Flow (vph)	83	0	0	542	469	0		
Confl. Peds. (#/hr)		60	60					
Parking (#/hr)			0					
Turn Type			Split					Anna anna anna anna anna anna anna anna
Protected Phases	6		. 4	4	5			
Permitted Phases								
Actuated Green, G (s)	12.5			29.5	17.5			
Effective Green, g (s)	12.0			29.0	17.0			
Actuated g/C Ratio	0.17			0.41	0.24			
Clearance Time (s)	3.5		-	3.5	3.5			
Lane Grp Cap (vph)	308			2056	809			
v/s Ratio Prot	c0.05			c0.11	c0.14			
v/s Ratio Perm								
v/c Ratio	0.27			0.26	0.58			
Uniform Delay, d1	25.2			13.5	23.4			
Progression Factor	1.00			1.26	1.00			
Incremental Delay, d2	2.1			0.3	3.0			
Delay (s)	27.3			17.3	26.4			
Level of Service	C			B	C			
Approach Delay (s) Approach LOS	27.3 C			17.3 B	26.4 C			
Intersection Summary	J			U	9			
HCM Average Control D	Delay		21.2	1	-ICM Le	vel of Service	С	
HCM Volume to Capaci			0.36		IOIVI LE	VOLOT OCTVICE	그 경기 출시 및 10명 💙 10명 전체를 5일 등인 명인 -	
Actuated Cycle Length			70.0	:: (1.00 to 1.00 to 1.	Sum of I	ost time (s)	12.0	
Intersection Capacity U		.81,81771363 I	54.9%			el of Service	A	
Analysis Period (min)	unzauor	Janes en e	15		OU LEV	OI OI OOI VIGE		
c Critical Lane Group			10					
5 Shada Lanc Group								

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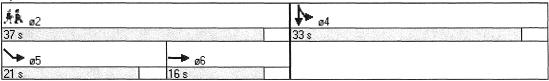
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	-	-	-

Phase Number	2	4	5	6	
Movement	Ped	SBTL	SEL	EBT	
Lead/Lag			Lead	Lag	
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	37	33	21	16	
Maximum Split (%)	52.9%	47.1%	30.0%	22.9%	
Minimum Split (s)	37	33	7.5	16	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	0	0	
Minimum Initial (s)	4				
Vehicle Extension (s)	3	3	3		
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s) 0	0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)	22.5	20.5		4.5	
Flash Dont Walk (s)	11	9		8	
Dual Entry	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	
Start Time (s)	20.5	57.5	20.5	41.5	
End Time (s)	57.5	20.5	41.5	57.5	
Yield/Force Off (s)	54	17	38	54	
Yield/Force Off 170(s)	43	8	38	46	
Local Start Time (s)	3.5	40.5	3.5	24.5	
Local Yield (s)	37	0	21	37	
Local Yield 170(s)	26	61	21	29	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

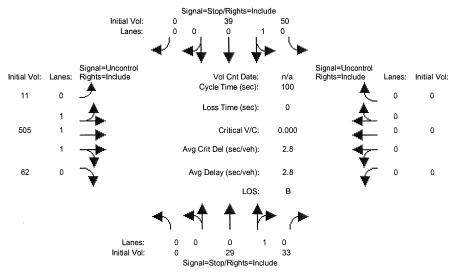
Offset: 17 (24%), Referenced to phase 4:SBTL, Start of Yellow

Splits and Phases: 3: N St & 3rd St



Level Of Service Computation Report 2000 HCM Unsignalized (Future Volume Alternative) Near Term+Project AM

Intersection #4: N St./4th St.



Street Name: Approach:	Nor	rth Bo		st	ıth Bo	und	N St East Bound West Bound					
Movement:	L -	. T	- R	L -	- T	– R	L -	- T	- R		- T	
Volume Module												
Base Vol:	0	29	33	50	39	0	11		62	0	0	0
Growth Adj:			1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00
Initial Bse:		29	33	50	39	0	11	505	62	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:		29	33	50	39	0	11	505	62	0	0	0
	1.00		1.00		1.00	1.00		1.00	1.00	1.00		1.00
_	1.00		1.00		1.00	1.00		1.00	1.00		1.00	1.00
PHF Volume:	0	29	33	50	39	0	11	505	62	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	29	33	50	39	0	11	505	62	0	0	0
Critical Gap												
Critical Gp:						XXXXX			XXXXX			
FollowUpTim:						XXXXX			XXXXX			
	,											
Capacity Mod												
Cnflict Vol:			199	220		XXXXX			XXXXX		XXXX	XXXXX
Potent Cap.:		432	847	741		XXXXX			XXXXX			XXXXX
Move Cap.:		424	847	662		XXXXX			XXXXX			XXXXX
Volume/Cap:						XXXX		XXXX			XXXX	XXXX
	•											
Level Of Ser												
			XXXXX						XXXXX			
Stopped Del:									XXXXX			
LOS by Move:		*	*	*	*	*	A	*	*	*	*	*
Movement:			- RT		- LTR			- LTR			- LTR	
Shared Cap.:						XXXXX			XXXXX			XXXXX
SharedQueue:						XXXXX			XXXXX			
Shrd StpDel:						XXXXX			XXXXX			
onaroa noo.	*		В	В	*	*	A	*	*	*	*	*
ApproachDel:		12.0			13.4		X	XXXXX		X	XXXXX	
ApproachLOS:		В			В			*			*	

	﴾	-	*	*	4	*	4	†	-	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተኩ						ተተጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.97				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5059						4902				
FIt Permitted		0.99						1.00				
Satd. Flow (perm)		5059						4902				
Volume (vph)	63	536	0	0	0	0	0	884	194	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	63	536	0	0	0	0	0	884	194	0	0	0
RTOR Reduction (vph)	0	21	0	0	0	0	0	50	0	0	0	0
Lane Group Flow (vph)	Ő	578	Ö	Ö	Ö	0	0	1028	0	Ö	Ö	Ö
Confl. Peds. (#/hr)	60	9,9			•	•		.020	60	v		
Parking (#/hr)	0		0						0			
Turn Type	Split		. <u> </u>									
Protected Phases	3piit 1							2				
Permitted Phases		1						_				
		31.5						31.5				
Actuated Green, G (s)		31.0						31.0				
Effective Green, g (s)												
Actuated g/C Ratio		0.44						0.44				
Clearance Time (s)	e i esta paga per esta	3.5			· * 13.5,	erica tiaran	santa da Maria da	3.5	Park Carry Carry	Turk propries		1255/95 1 W. J. V.
Lane Grp Cap (vph)		2240						2171				
v/s Ratio Prot		c0.11						c0.21				
v/s Ratio Perm												
v/c Ratio		0.26						0.47				
Uniform Delay, d1		12.3						13.7				
Progression Factor		1.02						1.00				
Incremental Delay, d2		0.3						0.7				
Delay (s)		12.8						14.5				
Level of Service		В						В				
Approach Delay (s)		12.8			0.0			14.5			0.0	
Approach LOS		В			Α			В			Α	
Intersection Summary									_			
HCM Average Control E			13.9		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.37	a ne ne dan sa			o sasa errak o oro - di					
Actuated Cycle Length			70.0			lost time			8.0			
Intersection Capacity Ut	tilization	1	44.1%		ICU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												

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Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	35	35	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	34.5	34.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	22	22	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	65.5	30.5	
End Time (s)	30.5	65.5	
Yield/Force Off (s)	27	62	
Yield/Force Off 170(s)	18	53	
Local Start Time (s)	38.5	3.5	
Local Yield (s)	0	35	
Local Yield 170(s)	61	26	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 27 (39%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 5: N St & 5th St

♣ ø1	† ø2
35 s	35 s

	≯		*	*	-	•	1	†	-	-	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	ተተጉ		ሻ	↑ β					ሻ	1	
Ideal Flow (vphpl)	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	5-2-2-7-4-2-2-1-2-7-1-2-
Lane Util. Factor	1.00	0.91		1.00	0.95					1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00					1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00					1.00	1.00	
Frt	1.00	0.99		1.00	0.99					1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)	1770	5041		1770	3518					1593	3342	
Flt Permitted	0.95	1.00		0.95	1.00					0.95	1.00	
Satd. Flow (perm)	1770	5041		1770	3518					1593	3342	
Volume (vph)	49	838	35	109	221	9	0	0	0	366	591	349
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	49	838	35	109	221	9	0	0	0	366	591	349
RTOR Reduction (vph)	0	6	0	0	4	0	0	0	0	0	123	0-10
Lane Group Flow (vph)	49	867	0	109	226	0	0	0	0	366	817	C
Confl. Peds. (#/hr)	49	001	60	109	220	U	U	U	60	300	017	Yan in a sa 🎔
The state of the s			00						00	0		
Parking (#/hr)	Dest			Dest					<u> </u>			
Turn Type	Prot			Prot						Split	ta, dat en A ta	
Protected Phases	1	6		5	2					4	4	
Permitted Phases	0.5	00.0		0.0	00 5					00.0	000	
Actuated Green, G (s)	6.5	22.0		8.0	23.5					28.0	28.0	
Effective Green, g (s)	6.0	21.5		7.5	23.0					29.0	29.0	
Actuated g/C Ratio	0.09	0.31		0.11	0.33					0.41	0.41	
Clearance Time (s)	3.5	3.5		3.5	3.5			usahum ii ili gasaayaa saasa		5.0	5.0	
Lane Grp Cap (vph)	152	1548		190	1156					660	1385	
v/s Ratio Prot	0.03	c0.17		c0.06	0.06					0.23	c0.24	
v/s Ratio Perm												
v/c Ratio	0.32	0.56		0.57	0.20					0.55	0.59	
Uniform Delay, d1	30.1	20.3		29.7	16.9					15.6	15.9	
Progression Factor	1.00	1.00		1.35	0.54					0.75	0.71	
Incremental Delay, d2	5.5	1.5		11.9	0.4					2.9	1.6	
Delay (s)	35.6	21.8		52.1	9.5					14.7	12.9	
Level of Service	D	С		D	Α					В	В	
Approach Delay (s)		22.5			23.2			0.0			13.4	
Approach LOS		С			С			Α			В	
Intersection Summary												
HCM Average Control [18.0		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.58									
Actuated Cycle Length	(s)		70.0		Sum of	lost time	e (s)		12.0			
Intersection Capacity U		1	61.9%		ICU Lev	el of Se	rvice		В			
Analysis Period (min)			15									
c Critical Lane Group			· · · · · · · · · ·									

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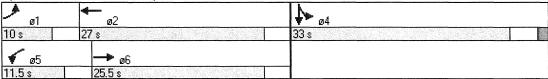
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1	2	4	5	6

Phase Number	1	2	4	5	6	
Movement	EBL	WBT	SBTL	WBL	EBT	
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max	Max	
Maximum Split (s)	10	27	33	11.5	25.5	
Maximum Split (%)	14.3%	38.6%	47.1%	16.4%	36.4%	
Minimum Split (s)	8	27	33	7.5	25.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	1.5	0	0	
Minimum Initial (s)	4	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	3	
Minimum Gap (s)	3	3	3	3	3	
Time Before Reduce (s)	0	0	0	0	0	
Time To Reduce (s)	0	0	0	0	0	
Walk Time (s)		11.5	10		10	*
Flash Dont Walk (s)		12	18		12	
Dual Entry	No	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	Yes	
Start Time (s)	58	68	25	58	69.5	
End Time (s)	68	25	58	69.5	25	
Yield/Force Off (s)	64.5	21.5	53	66	21.5	
Yield/Force Off 170(s)	64.5	9.5	35	66	9.5	
Local Start Time (s)	62	2	29	62	3.5	
Local Yield (s)	68.5	25.5	57	0	25.5	
Local Yield 170(s)	68.5		39	0		

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 66 (94%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow

Splits and Phases: 6: Capitol Mall & 3rd St



	≯	-	*	*	-		4	†	-	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	个 个	7		414			4			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95	1.00		0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.87		0.98			0.96			0.97	
Flpb, ped/bikes	0.93	1.00	1.00		1.00			0.99			0.98	
Frt	1.00	1.00	0.85		0.97			0.95			0.96	
Flt Protected	0.95	1.00	1.00		1.00			0.99			0.99	
Satd. Flow (prot)	1643	3539	1380		4836			1495			1527	
Flt Permitted	0.55	1.00	1.00		1.00			0.92			0.94	
Satd. Flow (perm)	958	3539	1380		4836			1389			1447	
	45	990	169	0	258	56	10	12	13	52	127	71
Volume (vph)												
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	45	990	169	0	258	56	10	12	13	52	127	71
RTOR Reduction (vph)	0	0	78	0	26	0	0	8	0	0	20	C
Lane Group Flow (vph)	45	990	91	0	288	0	0	27	0	_0	230	C
Confl. Peds. (#/hr)	60		60	60		60	60	and the second	60	60		60
Parking (#/hr)							0	0	0	0	0	C
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)	38.0	38.0	38.0		38.0			23.5			23.5	
Effective Green, g (s)	37.5	37.5	37.5		37.5			24.5			24.5	
Actuated g/C Ratio	0.54	0.54	0.54		0.54			0.35			0.35	
Clearance Time (s)	3.5	3.5	3.5		3.5			5.0			5.0	
Lane Grp Cap (vph)	513	1896	739		2591			486			506	
v/s Ratio Prot		c0.28			0.06							
v/s Ratio Perm	0.05		0.07					0.02			c0.16	
v/c Ratio	0.09	0.52	0.12		0.11			0.05			0.45	
Uniform Delay, d1	7.9	10.5	8.1		8.0			15.1			17.6	
Progression Factor	0.71	0.69	0.55		0.35			0.95			0.90	
Incremental Delay, d2	0.3	0.9	0.3		0.00			0.2			2.9	
Delay (s)	5.9	8.1	4.7		2.9			14.5			18.6	
Level of Service	J.3	0.1 A	4.7 A		2.3 A			14.5 B			10.0	
Approach Delay (s)	A	7.5			2.9			14.5			18.6	
Approach LOS		7.5 A			2.9 A			14.3 B			10.0	
Intersection Summary												
HCM Average Control D	Delay		8.4		HCM Le	vel of S	ervice		Α			
HCM Volume to Capaci			0.50		a , o, ong taga a	1 - 14 1 1 E TWO TO	40 A. A. J. T.					
Actuated Cycle Length			70.0	Jankarya V	Sum of	lost time	e (s)		8.0			
Intersection Capacity U		n de nyîde yî. N	62.1%		ICU Lev				В			
Analysis Period (min)		· Alakhi a	15		. 30 LGV	5, 5, 56	. 7.00					
,aryoro i oriou (iiiiii)			10									



Phase Number	2	4	
Movement	EBWB	NBSB	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	41.5	28.5	
Maximum Split (%)	59.3%	40.7%	
Minimum Split (s)	22.5	20	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	10	10	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	59		
End Time (s)	30.5	59	
Yield/Force Off (s)	27	54	
Yield/Force Off 170(s)		44	
Local Start Time (s)	32		
Local Yield (s)	0	27	
Local Yield 170(s)	60	17	
Intersection Summary			

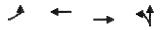
Cycle Length Control Type Pretimed Natural Cycle

Offset: 27 (39%), Referenced to phase 2:EBWB, Start of Yellow

Splits and Phases: 7: Capitol Mall & 4th St

	1
** 02	₩1 Ø4
41.5 s	28.5 s

	ᄼ		*	•	4	*		†	1	-	+	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	ተተ			ተተጉ		7575	<u>ተ</u> ተጉ				
Ideal Flow (vphpl)	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				
_ane Util. Factor	0.97	0.95			0.91		0.97	0.91				
Frpb, ped/bikes	1.00	1.00			0.98		1.00	0.94				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
-rt	1.00	1.00			0.97		1.00	0.93				
FIt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			4861		3433	4458				
FIt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			4861		3433	4458				
Volume (vph)	464	591	0	0	158	37	157	309	286	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	464	591	0	0	158	37	157	309	286	0	0	0
RTOR Reduction (vph)	0	0	0	0	27	0	0	153	0	0	0	0
Lane Group Flow (vph)	464	591	Ö	ő	168	Ö	157	442	Ö	Ö	Ö	0
Confl. Peds. (#/hr)						60	• • • • • •	ng parameter a	60			·
Turn Type	Prot						Split					
Protected Phases	1	6			2		8	8				
Permitted Phases												
Actuated Green, G (s)	14.5	36.5			18.5		25.0	25.0				
Effective Green, g (s)	14.0	36.0			18.0		26.0	26.0				
Actuated g/C Ratio	0.20	0.51			0.26		0.37	0.37				
Clearance Time (s)	3.5	3.5			3.5		5.0	5.0				
Lane Grp Cap (vph)	687	1820			1250		1275	1656				
v/s Ratio Prot	c0.14	c0.17			0.03		0.05	c0.10				
v/s Ratio Pfot v/s Ratio Perm	CU. 14	CO. 17			0.00		0.00	60.10				
v/c Ratio	0.68	0.32			0.13		0.12	0.27				
Uniform Delay, d1	25.9	9.9			20.0		14.5	15.3				
Progression Factor	0.45	0.17			1.00		0.43	0.13				
	4.6	0.17			0.2		0.43	0.13				
Incremental Delay, d2	16.2	2.1			20.2		6.4	2.3				
Delay (s) Level of Service	10.2 B	2.1 A			20.2 C		0.4 A	2.5 A				
	D	8.3			20.2		A	3.2			0.0	
Approach Delay (s)		o.s A			20.2 C			3.Z			Α	
Approach LOS	NGT 8/5325 2/5 (673) 6/10	A			C			A			^	
Intersection Summary HCM Average Control I	Nolov.		7.5		HCM La	vel of S	onvioo		A			
			0.39		I ICIVI LE	vei 0i 3	ei vice		A Comment			
			70.0					12.0				
		ere de la companya d La companya de la co	51.9%	Sum of lost time (s) ICU Level of Service				12.0 A				
Intersection Capacity U	unzauor	Bar Shir			ICO Lev	ei 0i 36	ivice		Α			
Analysis Period (min)			15									



Phase Number	1	2	6	8	
Movement	EBL	WBT	EBT	NBTL	
Lead/Lag	Lag	Lead			
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	18	22	40	30	
Maximum Split (%)	25.7%	31.4%	57.1%	42.9%	
Minimum Split (s)	7.5	20.5	20.5	17	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	0	1.5	
Minimum Initial (s)	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s)	0	0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)		7	7	7	
Flash Dont Walk (s)		10	10	5	
Dual Entry	No	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	
Start Time (s)	20.5	68.5	68.5	38.5	
End Time (s)	38.5	20.5	38.5	68.5	
Yield/Force Off (s)	35	17	35	63.5	
Yield/Force Off 170(s)	35	7	25	58.5	
Local Start Time (s)	55.5	33.5	33.5	3.5	
Local Yield (s)	0	52	0	28.5	
Local Yield 170(s)	0	42	60	23.5	

Cycle Length 70
Control Type Pretimed
Natural Cycle 50

Offset: 35 (50%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow

Splits and Phases: 8: Capitol Mall & 5th St

4 − ø2	اه 📤	★ @8
22 s	18 s	30 s
→ ø6		
40 s		

	۶	→	*	•	4	*	1	†	-	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				*	ተቡ	7	ď	₳			ት ኈ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor				0.91	0.91	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			1.00	
Flt Protected				0.95	0.98	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1610	3331	1583	1770	1863			3535	
Flt Permitted				0.95	0.98	1.00	0.19	1.00			1.00	
Satd. Flow (perm)				1610	3331	1583	352	1863			3535	
Volume (vph)	0	0	0	314	245	77	29	30	0	0	938	7
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	314	245	77	29	30	0	0	938	7
RTOR Reduction (vph)	0	0	0	0	0	42	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	180	379	35	29	30	0	0	944	0
Turn Type		<u>taria di binda anticolo ancio anticolo di pago</u>	C	ustom	C	ustom c	ustom		agaji ingkat panatilikat pankinana di Pantina pipa	in the second	en e	is incretic played a provincia increasion.
Protected Phases											4	
Permitted Phases				2	2	2	8	8				
Actuated Green, G (s)				32.5	32.5	32.5	30.5	30.5			30.5	
Effective Green, g (s)				32.0	32.0	32.0	30.0	30.0			30.0	
Actuated g/C Ratio				0.46	0.46	0.46	0.43	0.43			0.43	
Clearance Time (s)				3.5	3.5	3.5	3.5	3.5			3.5	
Lane Grp Cap (vph)				736	1523	724	151	798			1515	
v/s Ratio Prot											c0.27	
v/s Ratio Perm				0.11	c0.11	0.02	0.08	0.02				
v/c Ratio				0.24	0.25	0.05	0.19	0.04			0.62	
Uniform Delay, d1				11.6	11.6	10.5	12.5	11.6			15.6	
Progression Factor				0.74	0.74	0.48	0.30	0.09			1.00	
Incremental Delay, d2				0.8	0.4	0.1	2.7	0.1			1.9	
Delay (s)				9.4	9.0	5.2	6.5	1.2			17.5	
Level of Service				Α	Α	Α	Α	Α			В	
Approach Delay (s)		0.0			8.7	P - 100		3.8			17.5	
Approach LOS		A			A			A			В	
A COMPANY OF CONTROL O							22070453055500					actioners of the
Intersection Summary			4		10111				_			
HCM Average Control D			13.6		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.43	15 1561 2	4 .00.00.00.4.4.4	en in a rt aa nsi Ad						
Actuated Cycle Length (70.0		Sum of I				8.0			
Intersection Capacity Ut	ilization	1	43.4%		CU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												

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Phase Number	2	4	8		
	VBTL	SBT	NBTL	naire and the	
Lead/Lag					
Lead-Lag Optimize					
Recall Mode	Max	Max	Max		
Maximum Split (s)	36	34	34		
		48.6%			
Minimum Split (s)	7.5	7.5	34		
Yellow Time (s)	3.5	3.5	3.5		
All-Red Time (s)	0	0	0		
Minimum Initial (s)	4	4	4		
Vehicle Extension (s)	3	3	3		
Minimum Gap (s)	3	3	3		
Time Before Reduce (s)	0	0	0		
Time To Reduce (s)	0	0	0		
Walk Time (s)			18.5		
Flash Dont Walk (s)	Voo	Voo	12 Yes		
Dual Entry Inhibit Max	Yes Yes	Yes Yes			
Start Time (s)	32.5	68.5	68.5		
End Time (s)	68.5	32.5			
Yield/Force Off (s)	65	29	29		
Yield/Force Off 170(s)	65	29	17		
Local Start Time (s)	3.5	39.5	39.5		
Local Yield (s)	36		0		
Local Yield 170(s)	36	0	58		

Cycle Length 70
Control Type Pretimed
Natural Cycle 50

Offset: 29 (41%), Referenced to phase 4:SBT, Start of Yellow

Splits and Phases: 9: L St & 3rd St

ø2	↓ ø4
36 s	34 s
	4 ø 8
	34 s

	•	-	*	•	4	4	•	†	/	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					tttp-		J.	ተተተ				77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		1.00	0.91				0.88
Frpb, ped/bikes					0.99		1.00	1.00				0.95
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.98		1.00	1.00				0.85
Fit Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6220		1770	5085				2656
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6220		1770	5085				2656
Volume (vph)	0	0	0	0	574	93	76	467	0	0	0	335
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1.00	0.00	1.00	0.00	574	93	76	467	0	0.00	0.00	335
		0	0	0	42	0	37	0	0	0	0	77
RTOR Reduction (vph)	0	0	0	0	625	0	39	467	0	0	0	258
Lane Group Flow (vph)	U	U	U	U	023		60	407	U	U	U.	60
Confl. Peds. (#/hr)			era e paganga kes		S48 84 C NOV. 100	60					44, 5,6036,25	
Turn Type							Split					custom
Protected Phases					2		1 - 10 - 44-07	1				. Na 100 ki Garaga
Permitted Phases							A					1
Actuated Green, G (s)					25.0		35.5	35.5				35.5
Effective Green, g (s)					26.0		36.0	36.0				36.0
Actuated g/C Ratio					0.37		0.51	0.51				0.51
Clearance Time (s)					5.0		4.5	4.5				4.5
Lane Grp Cap (vph)					2310		910	2615				1366
v/s Ratio Prot					c0.10		0.02	0.09				
v/s Ratio Perm												c0.10
v/c Ratio					0.27		0.04	0.18				0.19
Uniform Delay, d1					15.4		8.4	9.1				9.1
Progression Factor					1.00		0.45	0.52				1.00
Incremental Delay, d2					0.3		0.1	0.1				0.3
Delay (s)					15.7		3.9	4.9				9.5
Level of Service					В		Α	Α				А
Approach Delay (s)		0.0			15.7			4.7			9.5	
Approach LOS		Α			В			Α			Α	
Intersection Summary												
HCM Average Control [10.5		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.22									
Actuated Cycle Length			70.0		Sum of				8.0			
Intersection Capacity U	tilizatior	1	62.8%		ICU Lev	el of Se	rvice		В			
Analysis Period (min)			15									
c Critical Lane Group												

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Phase Number	1	2	
Movement	NBTL	WBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	40	30	
Maximum Split (%)	57.1%	42.9%	
Minimum Split (s)	40	30	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	1	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	26.5	16	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	37	7	
End Time (s)	7	37	
Yield/Force Off (s)	2.5	32	
Yield/Force Off 170(s)	63.5	23	
Local Start Time (s)	5	45	
Local Yield (s)	40.5	0	
Local Yield 170(s)	31.5	61	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 32 (46%), Referenced to phase 2:WBT, Start of Yellow

Splits and Phases: 10: L St & 5th St

4	_1	ŀ	-2	
40 s	0)			

	۶	-	*	†	<i>></i>	-	↓	•	\	>	
Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	SEL2	SEL	SER	
Lane Configurations		ብተኩ		1>	7	٦	1		አ ነነነዣ		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0		4.0		
Lane Util. Factor		0.91		0.95	0.95	0.91	0.91		0.91		
Frpb, ped/bikes		0.99		1.00	1.00	1.00	1.00		0.97		
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00		1.00		
Frt		0.98		0.91	0.85	1.00	1.00		0.96		
Flt Protected		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (prot)		4955		1613	1504	1610	3354		6136		
Flt Permitted		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (perm)		4955		1613	1504	1610	3354		6136		
Volume (vph)	23	1724	238	30	105	102	116	11	1718	554	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	23	1724	238	30	105	102	116	11	1718	554	
RTOR Reduction (vph)	0	18	0	9	9	0	0	0	0	0	
Lane Group Flow (vph)	0	1967	0	64	53	70	148	0	2283	0	
Confl. Peds. (#/hr)			60							60	
Turn Type	Split				Perm	Split		Split			
Protected Phases	3	3		5		1	1	2	2		
Permitted Phases					5						
Actuated Green, G (s)		37.0		6.5	6.5	6.5	6.5		35.0		
Effective Green, g (s)		37.0		6.0	6.0	6.0	6.0		35.0		
Actuated g/C Ratio		0.37		0.06	0.06	0.06	0.06		0.35		
Clearance Time (s)		4.0		3.5	3.5	3.5	3.5		4.0		
Lane Grp Cap (vph)		1833		97	90	97	201		2148		
v/s Ratio Prot		c0.40		c0.04		0.04	c0.04		c0.37		
v/s Ratio Perm					0.03						
v/c Ratio		1.07		0.66	0.58	0.72	0.74		1.06		
Uniform Delay, d1		31.5		46.0	45.8	46.2	46.2		32.5		
Progression Factor		1.00		1.00	1.00	1.15	1.15		1.00		
Incremental Delay, d2		43.8		29.7	24.8	36.9	21.1		38.7		
Delay (s)		75.3		75.6	70.6	90.1	74.4		71.2		
Level of Service		E		E	E	F	E		E		
Approach Delay (s)		75.3		73.3			79.4		71.2		
Approach LOS		Е		Е			E		Е		
Intersection Summary											
HCM Average Control I			73.4		HCM Le	vel of S	ervice		Е		
HCM Volume to Capaci			1.02				/- \		400		
Actuated Cycle Length	• •		100.0		Sum of				16.0		
Intersection Capacity U	tilizatior	100055	93.6%		ICU Lev	el of Se	rvice		F		
Analysis Period (min)			15								
c Critical Lane Group											

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Phase Number	1	2	3	5	6	
Movement	SBTL	SEL	EBTL	NBT	Ped	
Lead/Lag	Lead	Lag				
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max	Max	
Maximum Split (s)	10	39	41	10	59	
FOR SERVICE SERVICE PROPERTY AND ADMINISTRATION OF THE PROPERTY OF THE PROPERT	10.0%		41.0%	10.0%	59.0%	
Minimum Split (s)	7.5	39	41	7.5		
Yellow Time (s)	3.5	3.5	3.5	3.5		
All-Red Time (s)	0	0.5	0.5	0	0.5	
Minimum Initial (s)	4	4	4	4		
Vehicle Extension (s)	3	3	3	3		
Minimum Gap (s)	3	3		3		
Time Before Reduce (s)		0	0	0		
Time To Reduce (s)	0	0	0	0		
Walk Time (s)		24	26		44	
Flash Dont Walk (s)		11	11		11	
Dual Entry	Yes	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	5,45,272	Yes	Yes	이 보다 하는 하는 자꾸 유리를	
Start Time (s)	35		94			
End Time (s)	45				. P. P. P. P.	
Yield/Force Off (s)	41.5			90.5		
Yield/Force Off 170(s)	41.5			90.5		
Local Start Time (s)	55	65	14	4		
Local Yield (s)	61.5	0	51	10.5	10	
Local Yield 170(s)	61.5	89	40	10.5	99	

Cycle Length 100
Control Type Pretimed
Natural Cycle 120

Offset: 80 (80%), Referenced to phase 2:SEL, Start of Yellow

Splits and Phases: 11: J St & 3rd St

↓ ø1	₲2	↑ ø5	♣ ø3
10 s	39 s	10 s	41 s
Á k ø6			
59 s			

	۶		*	•	-		1	†	~	1	ļ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	नाा	7					↑ ↑	7			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.81	1.00					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.96					1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.96	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	6035	1514					3242	1441			
Flt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	6035	1514					3242	1441			
Volume (vph)	680	2558	335	0	0	0	0	294	297	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	680	2558	335	0	0	0	0	294	297	0	0	0
RTOR Reduction (vph)	167	0	147	0	0	0	0	1	1	0	0	0
Lane Group Flow (vph)	513	2558	188	0	0	0	0	414	175	0	0	0
Confl. Peds. (#/hr)	60		60									
Parking (#/hr)	0											
Turn Type	Split	elementido de militar por la compositar con la	Perm		erangiya arabatta ayang arabata		**************************************		Perm			
Protected Phases	· 1	1						2				
Permitted Phases			1						2			
Actuated Green, G (s)	56.0	56.0	56.0					36.0	36.0			
Effective Green, g (s)	56.0	56.0	56.0					36.0	36.0			
Actuated g/C Ratio	0.56	0.56	0.56					0.36	0.36			
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Grp Cap (vph)	722	3380	848					1167	519			
v/s Ratio Prot	0.40	c0.42						c0.13				
v/s Ratio Perm			0.12						0.12			
v/c Ratio	0.71	0.76	0.22					0.36	0.34			
Uniform Delay, d1	16.1	16.8	11.0					23.5	23.3			
Progression Factor	0.84	0.71	1.39					1.00	1.00			
Incremental Delay, d2	0.5	0.1	0.1					0.8	1.8			
Delay (s)	14.0	12.1	15.4					24.3	25.1			
Level of Service	В	В	В					С	С			
Approach Delay (s)		12.8			0.0			24.6			0.0	
Approach LOS		В			Α			C			Α	
Intersection Summary												
HCM Average Control [14.4		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.60			20 00 00 00 00 00						
Actuated Cycle Length			100.0			lost time			8.0			
Intersection Capacity U	tilizatior	1	67.2%		ICU Lev	el of Se	rvice		С			
Analysis Period (min)			15									
c Critical Lane Group												

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Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	60	40	
Maximum Split (%)	60.0%	40.0%	
Minimum Split (s)	60	40	
Yellow Time (s)	4	4	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	44	20	
Flash Dont Walk (s)	12	16	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	43	3	
End Time (s)	3	43	
Yield/Force Off (s)	99	39	
Yield/Force Off 170(s)	87	23	
Local Start Time (s)	44	4	
Local Yield (s)	0	40	
Local Yield 170(s)	88	24	
	14735350566 5 0 5 14753251	tooksiva-user-avusetiestyriissi	

Cycle Length 100
Control Type Pretimed
Natural Cycle 100

Offset: 99 (99%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 12: J St & 5th St

♣ ø1	↑ ø2
60 s	40 s

	ၨ	-	-	*	4-	*	4	†	1	-	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					tttt-		ሻሻ	ተተ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		0.97	0.95				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.99		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6117		3433	3362				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6117		3433	3362				
Volume (vph)	0	0	0	0	753	81	118	766	0	0	0	. 0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	753	81	118	766	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	36	0	43	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	798	0	75	766	Ö	0	0	0
Confl. Peds. (#/hr)	· ·	U	U	U	730	60	, ,	700	0	U	0	900 V
Parking (#/hr)					0	00		0				
Turn Type			Talker Park No.				Split					
Protected Phases					1		2	2				
Permitted Phases												
Actuated Green, G (s)					16.5		26.5	26.5				
Effective Green, g (s)					16.0		26.0	26.0				
Actuated g/C Ratio					0.32		0.52	0.52				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)				18 18 1 TA	1957		1785	1748				
v/s Ratio Prot					c0.13		0.02	c0.23				
v/s Ratio Perm					00.13		0.02	60.23				
v/c Ratio					0.41		0.04	0.44				
Uniform Delay, d1					13.3		5.9	7.5				
Progression Factor					1.00		2.08	1.33				
Incremental Delay, d2					0.6		0.0	0.6				
					13.9		12.3	10.5				
Delay (s) Level of Service					13.9 B		12.3 B	10.5 B				
		Λ Λ			13.9		D	10.7			0.0	
Approach Delay (s) Approach LOS		0.0 A			13.9 B			10.7 B			0.0 A	
Intersection Summary					-			-				
HCM Average Control I HCM Volume to Capaci			12.3 0.43		HCM Le	vel of S	ervice		В	X TO STATE		
Actuated Cycle Length			50.0	SANTA I P	Sum of	lost time	2 (e)		8.0			
Intersection Capacity U		7 - 7 ± 3€. Y	88.9%		ICU Lev				0.0 E			
Analysis Period (min)	unzauoi	왕의 기계(19)	15	ing Mari	CO Lev	01 01 06	1 VIOC					
c Critical Lane Group			10									
o Oniicai Lane Group												



Phase Number	1	2	
Movement	WBT	NBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	20	30	
Maximum Split (%)	40.0%	60.0%	
Minimum Split (s)	20	30	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	5.5	14.5	
Flash Dont Walk (s)	11	12	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	15.5	35.5	
End Time (s)	35.5	15.5	
Yield/Force Off (s)	32	12	
Yield/Force Off 170(s)	21	0	
Local Start Time (s)	33.5	3.5	
Local Yield (s)	0	30	
Local Yield 170(s)	39	18	
Intersection Summary			

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 32 (64%), Referenced to phase 1:WBT, Start of Yellow

Splits and Phases: 13: I St & 5th St

← _ อ1	♦ ø2
20 s	30 s

	ၨ		*	•	4	•	1	†	~	-	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተ _ጉ		Ţ	ተተኩ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.91		0.86	0.86				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.98		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4914		1522	4806				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4914		1522	4806				
Volume (vph)	0	0	0	0	683	131	242	1247	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	683	131	242	1247	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	74	0	0	0	0	C
Lane Group Flow (vph)	Ŏ	0	Ō	Ö	803	Ō	168	1247	0	0	Ō	C
Confl. Peds. (#/hr)		ali, o e saj a se	· · · · · · · · · · · · · · · · · · ·	. .	. 5.5 5	60	ga seri a pa r			1 1 1 1 1 1 1 1 2 1 1		
Turn Type							Split				200	
Protected Phases					4		2	2				
Permitted Phases							i Marilla					
Actuated Green, G (s)					21.5		21.5	21.5				
Effective Green, g (s)					21.0		21.0	21.0				
Actuated g/C Ratio					0.42		0.42	0.42				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					2064		639	2019				
v/s Ratio Prot					c0.16		0.11	c0.26				
v/s Ratio Perm					00.10		9.,,	00.20				
v/c Ratio					0.39		0.26	0.62				
Uniform Delay, d1					10.1		9.5	11.4				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.6		1.0	1.4				
Delay (s)					10.6		10.5	12.8				
Level of Service					10.0		В	12.0 B				
Approach Delay (s)		0.0			10.6			12.4			0.0	
Approach LOS		Α			10.0			В			Α	
Intersection Summary												
HCM Average Control D			11.8		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.50				14 julija - 1					
Actuated Cycle Length			50.0			lost time			8.0			
Intersection Capacity U Analysis Period (min) c Critical Lane Group	tılizatior)	47.6% 15		ICU Lev	el of Se	rvice		Α			

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Phase Number	2	4	
Movement	NBTL	WBT	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	21.5	21.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	10	10	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes		
Start Time (s)	48.5		
End Time (s)	23.5		
Yield/Force Off (s)	20		
Yield/Force Off 170(s)	12		
Local Start Time (s)	3.5		
Local Yield (s)	25		
Local Yield 170(s)	17	42	
	Nagoti dale della reflere recise	000000000000000000000000000000000000000	

Cycle Length 50
Control Type Pretimed
Natural Cycle 45

Offset: 45 (90%), Referenced to phase 4:WBT, Start of Yellow

Splits and Phases: 14: L St & 16th St

√ _{ø2}	← ø4
25 s	25 s

Synchro 6 Report Page 1

Movement Lane Configurations	EBL						-	•	•		T	-
		EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Ideal Flaw (wabal)	The Edward Co.	tttp		the second care species to the		Adams		. (2.2.		o care and removal.	ተተቡ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.99									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.97									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		6147									5005	
Flt Permitted		1.00									0.98	
Satd. Flow (perm)		6147				8 7 6 3 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	. Market of the same state				5005	
Volume (vph)	0	705	188	0	0	0	0	0	0	210	444	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	705	188	0	0	0	0	0	0	210	444	0
RTOR Reduction (vph)	0	72	0	0	0	0	0	0	0	0	139	0
Lane Group Flow (vph)	0	821	0	0	. 0	0	0	0	0	0	515	0
Confl. Peds. (#/hr)			60							60		
Parking (#/hr)		A								0		0
Turn Type										Split		
Protected Phases		2								1	1	
Permitted Phases												
Actuated Green, G (s)		27.5									15.5	
Effective Green, g (s)		27.0									15.0	
Actuated g/C Ratio		0.54									0.30	
Clearance Time (s)		3.5									3.5	
Lane Grp Cap (vph)		3319									1502	
v/s Ratio Prot		c0.13									c0.10	
v/s Ratio Perm												
v/c Ratio		0.25									0.34	
Uniform Delay, d1		6.1									13.7	
Progression Factor		1.00									1.28	
Incremental Delay, d2		0.2									0.1	
Delay (s)		6.3									17.5	
Level of Service		Α									В	
Approach Delay (s)		6.3			0.0			0.0			17.5	
Approach LOS		Α			Α			Α			В	
Intersection Summary												
HCM Average Control D			11.0	F	ICM Le	vel of Se	ervice		В			
HCM Volume to Capacit			0.28	Section (Section)		- 1883 B. 1883	a y a awa a hala a					
Actuated Cycle Length (The Artist was a second		50.0			ost time			8.0			
Intersection Capacity Ut	ııızation	l Aleksiya aleksiya	42.0%	landa eta eta eta eta eta eta eta eta eta et	CU Lev	el of Sei	vice		Α			
Analysis Period (min) c Critical Lane Group			15									

3/16/2005 Fehr & Peers Associates, Inc.



Phase Number	1	2	
Movement	SBTL	EBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	19	31	
Maximum Split (%)	38.0%	62.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s)	0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	22.5	41.5	
End Time (s)	41.5	22.5	
Yield/Force Off (s)	38	19	
Yield/Force Off 170(s)	30	11	
Local Start Time (s)	3.5	22.5	
Local Yield (s)	19	0	
Local Yield 170(s)	11	42	

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 19 (38%), Referenced to phase 2:EBT, Start of Yellow

Splits and Phases: 1: Q St & 3rd St

№ ø1	→ ø2
19 s	31 s

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			•		
2.	Р	St	ጺ	3rd	St

	Charles Control Control Control	1468400000000000000000000000000000000000		nessiscopiopis energy		paktolikhorgani (kvisto ik						SECTION SECTIONS
/lovement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Configurations				3132120.20	ተተጉ						44	7
	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
otal Lost time (s)					4.0						4.0	4.0
ane Util. Factor					0.91						0.91	0.91
rpb, ped/bikes					1.00						0.97	0.93
Flpb, ped/bikes					1.00						1.00	1.00
-rt					1.00						0.93	0.85
It Protected					1.00						1.00	1.00
Satd. Flow (prot)					4903						2907	1205
FIt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					4903						2907	1205
/olume (vph)	0	0	0	137	2521	0	0	0	0	0	517	848
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	137	2521	0	0	0	0	0	517	848
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	1	1
ane Group Flow (vph)	0	0	0	0	2646	0	0	0	0	0	940	423
Confl. Peds. (#/hr)		e Maria di Balanta de Aria.		60								60
Parking (#/hr)				0	0						0	С
Furn Type			<u> </u>	Split								Perm
Protected Phases				2	2						1	
Permitted Phases				4	40 N. O C C C C C C C.							1
Actuated Green, G (s)					27.5						15.5	15.5
Effective Green, g (s)					27.0						15.0	15.0
Actuated g/C Ratio					0.54						0.30	0.30
Clearance Time (s)					3.5						3.5	3.5
	Name (S. New)	eras Maria Pro	9 4 8 4 1 1 1 Le	regering a gen	2648		Salaha Sygaji. D				872	362
Lane Grp Cap (vph)											0.32	302
v/s Ratio Prot					c0.54						0.32	c0.35
v/s Ratio Perm					4.00						4 404	
v/c Ratio					1.00						1.12dr	1.17
Uniform Delay, d1					11.5						17.5	17.5
Progression Factor					1.00						1.00	1.00
Incremental Delay, d2					17.3						53.6	101.2
Delay (s)					28.8						71.1	118.7
Level of Service					С						E	F
Approach Delay (s)		0.0			28.8			0.0			85.9	
Approach LOS		A			С			Α			F	
Intersection Summary												
HCM Average Control D HCM Volume to Capacit			48.2 1.06		HCM Le	vel of S	ervice		D			
Actuated Cycle Length (-		50.0		Sum of	last time	a (e)		8.0			
Intersection Capacity Uti Analysis Period (min)		1	97.6% 15		ICU Lev				6.0 F			



Phase Number	1	2	
Movement	SBT	WBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	19	31	
Maximum Split (%)	38.0%	62.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	14. 이 사용 이 사용 사용 기업을 가득하는 것이 되었다. 그 사용 기업을 받는 것이 되었다. 그 사용 기업을 받는 것이 되었다. 그 것은 것이 없는 것이 되었다. 그 것은 것이 없는 것이 없는 14. 사용 기업을 받는 것이 되었다. 그 것은 것이 없는 것이 없다.
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	40.5	9.5	
End Time (s)	9.5	40.5	
Yield/Force Off (s)	6	37	
Yield/Force Off 170(s)	48	29	
Local Start Time (s)	3.5	22.5	
Local Yield (s)	19	0	
Local Yield 170(s)	11	42	

Cycle Length 50
Control Type Pretimed
Natural Cycle 90

Offset: 37 (74%), Referenced to phase 2:WBTL, Start of Yellow

Splits and Phases: 2: P St & 3rd St

*	* .
♥ Ø!	▼ ∅2
19.8	31 s

	-	7	\	ļ	\	\				
Movement	EBT	EBR	SBL	SBT	SEL	SER				
Lane Configurations	1>			ተተቡ	ካካ					
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Total Lost time (s)	4.0			4.0	4.0					
Lane Util. Factor	1.00			0.91	0.97					
Frpb, ped/bikes	0.98			1.00	1.00					
Flpb, ped/bikes	1.00			1.00	1.00					
Frt	0.97			1.00	0.91					
Flt Protected	1.00			0.99	0.98					
Satd. Flow (prot)	1777			5055	3224					
Flt Permitted	1.00			0.99	0.98					
Satd. Flow (perm)	1777	1-44 a. 1-20		5055	3224			Janes (2. sept. 28 Tress)	18 4 (48 4 4 4 4 1 1 4 4	ART TO BROOKE AT
Volume (vph)	81	19	154	1138	154	232				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00				
Adj. Flow (vph)	81	19	154	1138	154	232				
RTOR Reduction (vph)	12	0	0	25	0	0 0				
Lane Group Flow (vph)	88	0 60	0 60	1267	386	U				
Confl. Peds. (#/hr)		00	00							
Parking (#/hr)										
Turn Type Protected Phases	6		Split 4	4						
Permitted Phases	0		4	4	5					
Actuated Green, G (s)	12.5			32.5	14.5					
Effective Green, g (s)	12.0			32.0	14.0					
Actuated g/C Ratio	0.17			0.46	0.20					
Clearance Time (s)	3.5			3.5	3.5					
Lane Grp Cap (vph)	305			2311	645		45,48-6-7			
v/s Ratio Prot	c0.05			c0.25	c0.12					
v/s Ratio Perm	00.00			00.20	00.12					
v/c Ratio	0.29			0.55	0.60					
Uniform Delay, d1	25.3			13.8	25.4					
Progression Factor	1.00			0.89	1.00					
Incremental Delay, d2	2.4			0.2	4.1					
Delay (s)	27.6			12.5	29.5					
Level of Service	С			В	С					
Approach Delay (s)	27.6			12.5	29.5					
Approach LOS	С			В	С					
Intersection Summary										
HCM Average Control D			17.0	1	HCM Le	vel of Service		3		
HCM Volume to Capacit			0.51							
Actuated Cycle Length (70.0			ost time (s)	12.0			
Intersection Capacity Ut	ilization	1	57.3%		CU Lev	el of Service	E	3		
Analysis Period (min)			15							
c Critical Lane Group										

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Phase Number	2	4	5	6
Movement	Ped	SBTL	SEL	EBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	34	36	18	16
Maximum Split (%)	48.6%	51.4%	25.7%	22.9%
Minimum Split (s)	34	36	7.5	16
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0	0	0	0
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	19.5	23.5		4.5
Flash Dont Walk (s)	11	9		8
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	
Start Time (s)	12.5	46.5	12.5	30.5
End Time (s)	46.5	12.5	30.5	46.5
Yield/Force Off (s)	43	9	27	43
Yield/Force Off 170(s)	32	0		
Local Start Time (s)	3.5	37.5	3.5	21.5
Local Yield (s)	34	0	18	34
Local Yield 170(s)	23	61	18	26

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 9 (13%), Referenced to phase 4:SBTL, Start of Yellow

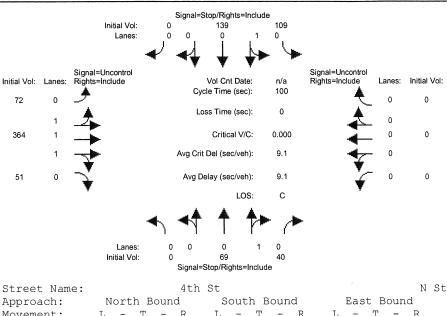
Splits and Phases: 3: N St & 3rd St

ÁÅ ø2		▶ ø4
₹ k ø2 34 s		36 s
→ ø5	→ ø6	
18 s	16 s	

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Level Of Service Computation Report 2000 HCM Unsignalized (Future Volume Alternative) Near Term+Project PM

Intersection #4: N St./4th St.



middi Voi.	Signal=Stop/Rights=Include		
Street Name:	4th St		N St
Approach: North B		ound East Bo	
Movement: L - T			
Volume Module:			
Base Vol: 0 69	40 109 139	0 72 364	51 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 69	40 109 139	0 72 364	51 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: 0 69	40 109 139	0 72 364	51 0 0 0
User Adj: 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00 1.00
PHF Volume: 0 69	40 109 139	0 72 364	51 0 0 0
Reduct Vol: 0 0	0 0 0	0 0 0	0 0 0 0
Final Vol.: 0 69	40 109 139	0 72 364	51 0 0 0
Critical Gap Module:			
Critical Gp:xxxxx 6.5		xxxxx 4.1 xxxx	XXXXX XXXXX XXXXX
FollowUpTim:xxxxx 4.0	3.3 3.5 4.0	xxxxx 2.2 xxxx	XXXXX XXXXX XXXXX
· ·			
Capacity Module:			
Cnflict Vol: xxxx 549		xxxxx 15 xxxx	
Potent Cap.: xxxx 446	905 642 432	xxxxx 1616 xxxx	
Move Cap.: xxxx 420		xxxxx 1596 xxxx	
Volume/Cap: xxxx 0.16			
· ·	1.1		
Level Of Service Modul		0 1	
Queue: xxxxx xxxx			XXXXX XXXXX XXXX XXXXX
Stopped Del:xxxxx xxxx	* * *		* * * * *
LOS by Move: * *			
Movement: LT - LTR			
Shared Cap.: xxxx xxxx		XXXXX XXXX XXXX	
SharedQueue:xxxxx xxxx Shrd StpDel:xxxxx xxxx			XXXXX XXXXX XXXX XXXXX
	B C *		
Shared LOS: * *	В	4.1	
ApproachDel: 13.7	22.7 C	************	*******
ApproachLOS: B	C	^	~

	۶	-	*	•	4-	*	1	1	/	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተቡ						ተተጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.98				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5050						4960				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5050						4960				
Volume (vph)	72	443	0	0	0	0	0	896	125	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	72	443	0	0	0	0	0	896	125	0	0	0
RTOR Reduction (vph)	0	32	0	0	0	0	0	26	0	Ō	0	0
Lane Group Flow (vph)	0	483	0	0	0	0	0	995	0	0	0	0
Confl. Peds. (#/hr)	60							a di di Abbi andio	60	新 1000 100 100 100 <u>2</u> 000	HARLINE SERVI	and the second
Parking (#/hr)	0		0						0			
Turn Type	Split							- V				
Protected Phases	1	1						2				
Permitted Phases								erise e e ver al e				
Actuated Green, G (s)		31.5						31.5				
Effective Green, g (s)		31.0						31.0				
Actuated g/C Ratio		0.44						0.44				
Clearance Time (s)		3.5						3.5				
Lane Grp Cap (vph)		2236				V 934 (1912 / 1914	ng Talawan	2197				
v/s Ratio Prot		c0.10						c0.20				
v/s Ratio Perm		00.10						00.20				
v/c Ratio		0.22						0.45				
Uniform Delay, d1		12.0						13.6				
Progression Factor		1.22						1.00				
Incremental Delay, d2		0.2						0.7				
Delay (s)		14.9						14.3				
Level of Service		14.3						14.0 B				
Approach Delay (s)		14.9			0.0			14.3			0.0	
Approach LOS		В			Α			В			Α	
Intersection Summary												
HCM Average Control [Delay		14.5		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.33									
Actuated Cycle Length			70.0	•	Sum of	lost time	e (s)		8.0			
Intersection Capacity U		ora L	42.5%			el of Se			Α			
Analysis Period (min) c Critical Lane Group			15									

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Phase Number	1	2
Movement	EBTL	NBT
Lead/Lag	Lead	Lag
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	35	35
	50.0%	
Minimum Split (s)	34.5	34.5
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	0
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s)		0
Time To Reduce (s)	0	0
Walk Time (s)	22	22
Flash Dont Walk (s)	9	9
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes 30.5
Start Time (s) End Time (s)	65.5 30.5	65.5
Yield/Force Off (s)	27	62
	18	53
Yield/Force Off 170(s)	38.5	
Local Start Time (s) Local Yield (s)	30.5	3.5 35
Local Yield (5)	61	26
Intersection Summary	U 1	20

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 27 (39%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 5: N St & 5th St

♣ ø1	↑ ø2
35 s	35 s

	۶	-	7	•	-	•	•	†	*	-	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	آثر	ተተኈ		آلا	ተ ኈ					ħ	ሳ ኁ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0					4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95					1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00					1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00					1.00	1.00	
Frt	1.00	0.99		1.00	0.99					1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)	1770	5018		1770	3519					1593	3302	
Flt Permitted	0.95	1.00		0.95	1.00					0.95	1.00	
Satd. Flow (perm)	1770	5018		1770	3519					1593	3302	
Volume (vph)	123	577	31	311	677	27	0	0	0	173	972	788
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	123	577	31	311	677	27	0	0	0	173	972	788
RTOR Reduction (vph)	0	8	0	0	4	0	0	0	0	0	181	0
Lane Group Flow (vph)	123	600	0	311	700	0	0	0	0	173	1579	0
Confl. Peds. (#/hr)	est a s k≟ a sa		60							60		
Parking (#/hr)										0		
Turn Type	Prot			Prot						Split		
Protected Phases	1	6		5	2					4	4	
Permitted Phases	10-100 JAN 40-0	. 1 1 1 1 1 1 1 9 1		Min Samap Mark								
Actuated Green, G (s)	6.5	12.5		12.5	18.5					33.0	33.0	
Effective Green, g (s)	6.0	12.0		12.0	18.0					34.0	34.0	
Actuated g/C Ratio	0.09	0.17		0.17	0.26					0.49	0.49	
Clearance Time (s)	3.5	3.5		3.5	3.5					5.0	5.0	
Lane Grp Cap (vph)	152	860		303	905			rive (Section	v. 2001 (20 0 4)	774	1604	100000000000000000000000000000000000000
v/s Ratio Prot	0.07	0.12		c0.18	c0.20					0.11	c0.48	
v/s Ratio Perm	0.07	0.12		00.10	60.20						00.10	
v/c Ratio	0.81	0.70		1.03	0.77					0.22	0.98	
Uniform Delay, d1	31.4	27.3		29.0	24.1					10.4	17.7	
Progression Factor	1.00	1.00		0.78	0.76					0.74	0.82	
Incremental Delay, d2	35.5	4.7		57.3	6.1					0.6	17.5	
Delay (s)	67.0	32.0		79.9	24.5					8.3	32.1	
Level of Service	67.0 E	32.0 C		79.9 E	24.5 C					0.5 A	32.1 C	
	-	37.8			41.5			0.0			29.9	
Approach Delay (s) Approach LOS		37.0 D			41.5 D			Α			29.9 C	
Intersection Summary												
HCM Average Control [34.7		HCM Le	vel of S	ervice		С			
HCM Volume to Capac			0.92		est and a second	Julius se esta a						
Actuated Cycle Length			70.0		Sum of I				8.0			
Intersection Capacity U	tilizatior	1	91.5%		ICU Lev	el of Se	rvice		F			
Analysis Period (min)			15									
c Critical Lane Group												

/	≯	4	4	(
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			•	•		
Phase Number	1	2	4	5	6	
Movement	EBL	WBT	SBTL	WBL	EBT	
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max	Max	
Maximum Split (s)	10	22	38	16	16	
Maximum Split (%)	14.3%	31.4%	54.3%	22.9%	22.9%	
Minimum Split (s)	8	22	38	7.5	16	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	1.5	0	0	
Minimum Initial (s)	4					
Vehicle Extension (s)	3					
Minimum Gap (s)	3	3	3	3	3	
Time Before Reduce (s)	0	0	0	0	0	
Time To Reduce (s)	0	0	0	0	0	
Walk Time (s)		6.5	15		0.5	
Flash Dont Walk (s)		12	18		12	
Dual Entry	No	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	Yes	
Start Time (s)	10.5	20.5	42.5	10.5	26.5	
End Time (s)	20.5	42.5	10.5	26.5	42.5	
Yield/Force Off (s)	17	39	5.5	23	39	
Yield/Force Off 170(s)	17	27	57.5	23	27	
Local Start Time (s)	57.5	67.5	19.5	57.5	3.5	
Local Yield (s)	64	16	52.5	0	16	
Local Yield 170(s)	64	4	34.5	0	4	

Cycle Length 70
Control Type Pretimed
Natural Cycle 80

Offset: 23 (33%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow

Splits and Phases: 6: Capitol Mall & 3rd St

<u>^</u> ≉ _{ø1}	← ø2	↓ •4
10 s	22 s	38.8
√ ø5	→ ø6 16 s	

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	ၨ		*	*	4			†	1	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ኻ	ተተ	7"		414			44			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95	1.00		0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.87		0.99			0.99			0.97	
Flpb, ped/bikes	0.97	1.00	1.00		1.00			0.99			0.99	
Frt	1.00	1.00	0.85		0.99			0.98			0.96	
Flt Protected	0.95	1.00	1.00		1.00			0.98			0.99	
Satd. Flow (prot)	1720	3539	1380		5000			1581			1519	
Flt Permitted	0.27	1.00	1.00		1.00			0.84			0.90	
Satd. Flow (perm)	493	3539	1380		5000			1355			1379	
	127	597	25	0	859	55	63	110	25	60	130	93
Volume (vph)				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Peak-hour factor, PHF	1.00	1.00	1.00									
Adj. Flow (vph)	127	597	25	0	859	55	63	110	25	60	130	93
RTOR Reduction (vph)	0	0	12	0	10	0	0	7	0	0	25	0
Lane Group Flow (vph)	127	597	13	0	904	0	0	191	0	0	258	0
Confl. Peds. (#/hr)	60		60	60		60	60		60	60	akiris kada a .	60
Parking (#/hr)							0	0	0	0	0	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)	38.0	38.0	38.0		38.0			23.5			23.5	
Effective Green, g (s)	37.5	37.5	37.5		37.5			24.5			24.5	
Actuated g/C Ratio	0.54	0.54	0.54		0.54			0.35			0.35	
Clearance Time (s)	3.5	3.5	3.5		3.5			5.0			5.0	
Lane Grp Cap (vph)	264	1896	739		2679			474			483	
v/s Ratio Prot		0.17			0.18							
v/s Ratio Perm	c0.26		0.01					0.14			c0.19	
v/c Ratio	0.48	0.31	0.02		0.34			0.40			0.53	
Uniform Delay, d1	10.2	9.1	7.6		9.2			17.2			18.2	
Progression Factor	2.18	2.22	3.69		0.24			0.91			0.98	
Incremental Delay, d2	5.0	0.4	0.0		0.3			2.5			4.0	
Delay (s)	27.2	20.5	28.2		2.6			18.1			21.9	
Level of Service	C	C	C		2.0 A			В			C	
Approach Delay (s)	· · · · · · · · · · · · · · · · · · ·	21.9	•		2.6			18.1			21.9	
Approach LOS		- C			2.0 A			В			C	
Intersection Summary		3.5								0.44		
HCM Average Control [13.3		HCM Le	vel of S	ervice		В			
HCM Volume to Capac			0.50	energia de la composición dela composición de la composición dela composición de la composición dela composición dela composición de la composición dela composición de la composición de la composición de la com	C	1444	- /-\		0.0			
Actuated Cycle Length			70.0		Sum of				8.0			
Intersection Capacity U	tılızatior	1	64.7%		ICU Lev	el of Se	rvice		С			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	2	4	
Movement	EBWB	NBSB	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	41.5	28.5	
Maximum Split (%)		40.7%	
Minimum Split (s)	22.5	20	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	10	10	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	59		
End Time (s)	30.5		
Yield/Force Off (s)	27	54	
Yield/Force Off 170(s)			
Local Start Time (s)	32		
Local Yield (s)	0		
Local Yield 170(s)	60	17	
Intersection Summary			
Cycle Longth			70

Cycle Length 70
Control Type Pretimed
Natural Cycle 50

Offset: 27 (39%), Referenced to phase 2:EBWB, Start of Yellow

Splits and Phases: 7: Capitol Mall & 4th St

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№ 0 2	♥ 1 04
41.5 s	28.5 s

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	≯		*	•	-	*	1	†	~	-	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	14/4	ተተ			ተተጉ		44	ተተ _ጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	0.97	0.95			0.91		0.97	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			4983		3433	4922				
FIt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			4983		3433	4922				
Volume (vph)	274	409	0	0	582	55	331	675	94	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	274	409	0	0	582	55	331	675	94	0	0	0
RTOR Reduction (vph)	0	0	0	0	16	0	0	26	. 0	0	0	0
Lane Group Flow (vph)	274	409	Ö	Ö	621	0	331	743	0	0	0	0
Confl. Peds. (#/hr)	217	700		O	021	60	551	140	60		· ·	
Turn Type	Prot						Split					
Protected Phases	1 101	6			2		8	8				
Permitted Phases					_							
Actuated Green, G (s)	14.5	36.5			18.5		25.0	25.0				
Effective Green, g (s)	14.0	36.0			18.0		26.0	26.0				
Actuated g/C Ratio	0.20	0.51			0.26		0.37	0.37				
Clearance Time (s)	3.5	3.5			3.5		5.0	5.0				
Lane Grp Cap (vph)	687	1820			1281		1275	1828				
v/s Ratio Prot	c0.08	0.12			c0.12		0.10	c0.15				
v/s Ratio Prot v/s Ratio Perm	CU.U6	0.12			CO. 12		0.10	CO. 15				
v/c Ratio	0.40	0.22			0.49		0.26	0.41				
Uniform Delay, d1	24.3	9.3			22.1		15.3	16.3				
Progression Factor	0.87	0.27			1.00		0.47	0.42				
Incremental Delay, d2	1.7	0.3			1.3		0.5	0.6				
Delay (s)	22.8	2.8			23.4		7.6	7.5				
Level of Service	С	Α			С		Α	Α				
Approach Delay (s)	vilvan Ti	10.8			23.4			7.5			0.0	
Approach LOS		В			С			Α			Α	
Intersection Summary												
HCM Average Control [12.6		HCM Le	evel of S	Service	A	В			
HCM Volume to Capaci Actuated Cycle Length			0.43 70.0		Sum of	lost time	e (s)		12.0			
Intersection Capacity U			47.7%			el of Se			A			
Analysis Period (min) c Critical Lane Group			15									

→ ← → ♦

Phase Number	1	2	6	8	
Movement	EBL	WBT	EBT	NBTL	
Lead/Lag	Lag	Lead			
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	18	22	40	30	
Maximum Split (%)	25.7%	31.4%	57.1%	42.9%	
Minimum Split (s)	7.5	20.5	20.5	17	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	0	1.5	
Minimum Initial (s)	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s)) 0	0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)		7	7	7	
Flash Dont Walk (s)		10	10	5	
Dual Entry	No	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	
Start Time (s)	20.5	68.5	68.5	38.5	
End Time (s)	38.5	20.5	38.5	68.5	
Yield/Force Off (s)	35	17	35	63.5	
Yield/Force Off 170(s)	35	7	25	58.5	
Local Start Time (s)	55.5	33.5	33.5	3.5	
Local Yield (s)	0	52	0	28.5	
Local Yield 170(s)	0	42	60	23.5	

Intersection Summary

Cycle Length 70
Control Type Pretimed
Natural Cycle 45

Offset: 35 (50%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow

Splits and Phases: 8: Capitol Mall & 5th St

 	ø1	← ø2		
30 s	18 s	22 \$		
		→ ø6		
		— ≠ ø6 40 s		

	>	-	*	1	4	4	4	†	*	1	 	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				ሻ	44	7	7	†			↑ }	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor				0.91	0.91	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			0.99	
FIt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1610	3390	1583	1770	1863			3515	
Flt Permitted				0.95	1.00	1.00	0.15	1.00			1.00	
Satd. Flow (perm)				1610	3390	1583	276	1863			3515	
Volume (vph)	0	0	0	517	1260	193	37	70	0	0	953	46
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	517	1260	193	37	70	0	0	953	46
RTOR Reduction (vph)	0	0	0	0	0	97	0	0	0	0	5	0
Lane Group Flow (vph)	0	0	0	517	1260	97	37	70	0	0	994	0
Turn Type			C	ustom	(custom c	ustom	i dini ing making sampulan kan			***************************************	
Protected Phases											4	
Permitted Phases				2	2	2	8	8				
Actuated Green, G (s)				35.5	35.5	35.5	27.5	27.5			27.5	
Effective Green, g (s)				35.0	35.0	35.0	27.0	27.0			27.0	
Actuated g/C Ratio				0.50	0.50	0.50	0.39	0.39			0.39	
Clearance Time (s)				3.5	3.5	3.5	3.5	3.5			3.5	
Lane Grp Cap (vph)				805	1695	792	106	719			1356	
v/s Ratio Prot							1. N. T. T.				c0.28	
v/s Ratio Perm				0.32	c0.37	0.06	0.13	0.04				
v/c Ratio				0.64	0.74	0.12	0.35	0.10			0.73	
Uniform Delay, d1				12.9	13.9	9.3	15.3	13.7			18.4	
Progression Factor				0.71	0.70	0.47	0.77	0.57			1.00	
Incremental Delay, d2				3.6	2.7	0.3	5.1	0.2			3.5	
Delay (s)				12.8	12.5	4.6	16.9	8.0			22.0	
Level of Service				В.	12.0 B	Α	В	Α.			C	
Approach Delay (s)		0.0		 .	11.8		-	11.0			22.0	
Approach LOS		Α.			77.0			В			C	
					-						9	
Intersection Summary	-1		45.4	•	10141 -				ь			
HCM Volume to Consoit			15.1		TOW LE	vel of S	ervice		В			
HCM Volume to Capacity			0.74	n figure in Age 🗸	N	<u>Color recovi</u>	(-)					
Actuated Cycle Length (s			70.0			ost time			8.0			
Intersection Capacity Uti	ıızatıon		72.2%	1	CU Lev	el of Se	rvice		С			
Analysis Period (min)			15									
c Critical Lane Group												

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Phase Number	2	4	8									
Movement \	WBTL	SBT	NBTL	Name and Address of the Owner, where the Owner, which the								
Lead/Lag												
Lead-Lag Optimize												
Recall Mode	Max	Max	Max									
Maximum Split (s)	39	31	31									
그렇게 얼룩집에요. 그 보니까요? 그리는 그와 이 나가 하는 것이 하는 것이다. 그 것이다.		44.3%										
Minimum Split (s)	7.5	7.5	31									
Yellow Time (s)	3.5	3.5	3.5									
All-Red Time (s)	0	0	0									
Minimum Initial (s)	4 3	4	4 3									
Vehicle Extension (s) Minimum Gap (s)	ა 3	ა 3	ა 3									
Time Before Reduce (s)		0	0									
Time To Reduce (s)	0	0	0									
Walk Time (s)			15.5									
Flash Dont Walk (s)			12									
Dual Entry	Yes	Yes	Yes									
Inhibit Max	Yes	Yes	Yes									
Start Time (s)	62.5	31.5	31.5									
End Time (s)	31.5											
Yield/Force Off (s)	28											
Yield/Force Off 170(s)	28											
Local Start Time (s)	3.5											
Local Yield (s)	39							살림 강경이 일본 당신이 그렇게 연락되는 그로 연극하다.	살림 살고하고 있어 말한다. 그렇게 하는데 나는 나는 하는 모두는 말한다.	살림 화고 마일에 남자는 대화보에게 하시는 그로 하는 학자는 날만하고 있는	살림 화고 하는 것이 그래요? 이 아니는 그리아 아르게도 나왔다고 말았	
Local Yield 170(s)	39	0	58									

Cycle Length 70
Control Type Pretimed
Natural Cycle 60

Offset: 59 (84%), Referenced to phase 4:SBT, Start of Yellow

Splits and Phases: 9: L St & 3rd St

ø2	₩ ø4
39 s	31 s
	√ ø8 31 s

	۶	-	*	*	4	1	4	†	~	-	Ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					attt		F	ተተተ				77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		1.00	0.91				0.88
Frpb, ped/bikes					1.00		1.00	1.00				0.93
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6311		1770	5085				2585
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6311		1770	5085				2585
Volume (vph)	0	0	0	0	1812	155	320	683	0	0	0	188
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	1812	155	320	683	0	0	0	188
RTOR Reduction (vph)	0	0	0	0	19	0	11	0	0	Ō	0	15
Lane Group Flow (vph)	Ō	0	Ō	Ō	1948	ō	309	683	0	Ō	0	173
Confl. Peds. (#/hr)	. ,	a r ty Fil				60	60		•			60
Turn Type							Split					custom
Protected Phases					2		1	1				,00.0111
Permitted Phases							Betur medili el					1
Actuated Green, G (s)					40.0		20.5	20.5				20.5
Effective Green, g (s)					41.0		21.0	21.0				21.0
Actuated g/C Ratio					0.59		0.30	0.30				0.30
Clearance Time (s)					5.0		4.5	4.5				4.5
Lane Grp Cap (vph)	<u> </u>				3696		531	1526				776
v/s Ratio Prot					c0.31		c0.17	0.13				
v/s Ratio Perm					00.01		00.17	0.10				0.07
v/c Ratio					0.53		0.58	0.45				0.22
Uniform Delay, d1					8.7		20.8	19.8				18.4
Progression Factor					1.00		0.68	0.70				1.00
Incremental Delay, d2					0.5		4.3	0.70				0.7
Delay (s)					9.2		18.4	14.7				19.0
Level of Service					3.2 A		10.4	В				13.C
Approach Delay (s)		0.0			9.2		D	15.9			19.0	u Postanija
Approach LOS		Α			9.2 A			13.9 B			19.0 B	
Intersection Summary												
HCM Average Control [Delay		11.9	}	-ICM Le	vel of S	ervice		В	PROPERTY OF THE		
HCM Volume to Capac			0.55									
Actuated Cycle Length			70.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity U			77.3%			el of Se			D			
Analysis Period (min)	andrope # 50 Si Ti		15			STATE STATE	: 10.09(Fig.4)		n kund ki di se lih			
c Critical Lane Group			4.4									

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Phase Number	1	2
Movement	NBTL	WBT
Lead/Lag	Lead	Lag
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	25	45
The state of the s	35.7%	
Minimum Split (s)	25	45
Yellow Time (s)	3.5	3.5
All-Red Time (s)	1	1.5
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s)		0
Time To Reduce (s)	0	0
Walk Time (s)	11.5	31
Flash Dont Walk (s)	9	9
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes
Start Time (s)	37	62
End Time (s)	62	37
Yield/Force Off (s)	57.5	32
Yield/Force Off 170(s)	48.5	23
Local Start Time (s)	5	30
Local Yield (s)	25.5	
Local Yield 170(s)	16.5	61

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 32 (46%), Referenced to phase 2:WBT, Start of Yellow

Splits and Phases: 10: L St & 5th St

♣ ø1	← ø2
25 s	45 s

	<i>></i>	-	*	†	*	-	↓	•	\	>	
Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	SEL2	SEL	SER	
_ane Configurations		414		7>	7	ሻ	44		ጎ ነነነላ		
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0		4.0		
Lane Util. Factor		0.91		0.95	0.95	0.91	0.91		0.91		
Frpb, ped/bikes		0.99		1.00	1.00	1.00	1.00		0.97		
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00		1.00		
Frt		0.98		0.94	0.85	1.00	1.00		0.96		
Flt Protected		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (prot)		4952		1660	1504	1610	3372		6090		
Flt Permitted		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (perm)		4952		1660	1504	1610	3372		6090		
Volume (vph)	1	687	85	70	161	229	350	7	1235	454	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	1	687	85	70	161	229	350	7	1235	454	
RTOR Reduction (vph)	0	15	0	26	43	0	0	0	0	0	
Lane Group Flow (vph)	0	758	0	93	69	187	392	0	1696	0	
Confl. Peds. (#/hr)		3 3 3 5 5 THEFT	60		and a series of the series	ers housestand				60	
Turn Type	Split				Perm	Split		Split			
Protected Phases	3	3		5		1	1	2	2		
Permitted Phases					5						
Actuated Green, G (s)		23.0		12.0	12.0	17.5	17.5		32.0		
Effective Green, g (s)		23.0		12.0	12.0	17.0	17.0		32.0		
Actuated g/C Ratio		0.23		0.12	0.12	0.17	0.17		0.32		
Clearance Time (s)		4.0		4.0	4.0	3.5	3.5		4.0		
Lane Grp Cap (vph)		1139		199	180	274	573		1949		kaj die majera priidije apon di jedje sprie di lietiki i er in ditense.
v/s Ratio Prot		c0.15		c0.06		0.12	c0.12		c0.28		
v/s Ratio Perm					0.05						
v/c Ratio		0.67		0.47	0.38	0.68	0.68		0.94dr		
Uniform Delay, d1		35.0		41.0	40.6	39.0	39.0		32.0		
Progression Factor		1.00		1.00	1.00	0.92	0.92		1.00		
Incremental Delay, d2		3.1		7.8	6.1	12.5	6.3		5.6		
Delay (s)		38.1		48.8	46.6	48.4	42.2		37.7		
Level of Service		D		D	D	D	D		D		
Approach Delay (s)		38.1		47.8			44.2		37.7		
Approach LOS		D		D			D		D		
Intersection Summary		19									
HCM Average Control [39.6		HCM Le	vel of S	ervice		D		
HCM Volume to Capaci	ity ratio		0.72								
Actuated Cycle Length	(s)		100.0	;	Sum of I	lost time	e (s)		16.0		
Intersection Capacity U	tilizatior	i S	77.0%		ICU Lev	el of Se	rvice		D		
Analysis Period (min) dr Defacto Right Lane	e. Recc	de with	15 1 thoug	h lane a	as a righ	nt lane.					

c Critical Lane Group

1	4	4	†	Á
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Phase Number	1	2	3	5	6
Movement	SBTL	SEL	EBTL	NBT	Ped
Lead/Lag	Lead	Lag			
Lead-Lag Optimize		and the second			
Recall Mode	Max	Max	Max	Max	Max
Maximum Split (s)	21	36	27	16	73
Maximum Split (%)	21.0%	36.0%	27.0%	16.0%	73.0%
Minimum Split (s)	7.5	36	27	8	73
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)) 0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		21	12		58
Flash Dont Walk (s)		11	11		11
Dual Entry	Yes	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	85	6	58	42	85
End Time (s)	6	42	85	58	58
Yield/Force Off (s)	2.5	38	81	54	54
Yield/Force Off 170(s)	2.5	27	70	54	43
Local Start Time (s)	47	68	20	4	47
Local Yield (s)	64.5	0	43	16	16
Local Yield 170(s)	64.5	89	32	16	5

Cycle Length 100
Control Type Pretimed
Natural Cycle 100

Offset: 38 (38%), Referenced to phase 2:SEL, Start of Yellow

Splits and Phases: 11: J St & 3rd St

ø1	★ ø2	1 ø5	♣ ø3
21 s	36 s	16 s	27 s
ÁÅ ø6 73s			
73 s			

	۶	-	*	•	-	•	4	†	/	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	4111	7					↑ ↑	7*			-
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.81	1.00					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.95					1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.96	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	6035	1498					3254	1441			
Flt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	6035	1498					3254	1441			
Volume (vph)	324	1583	188	0	0	0	0	431	408	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	324	1583	188	0	0	0	0	431	408	0	0	0
RTOR Reduction (vph)	167	0	109	0	0	0	0	2	2	0	0	C
Lane Group Flow (vph)	157	1583	79	Ö	ő	Ö	ő	586	249	0	0	C
Confl. Peds. (#/hr)	60	1000	60		•	•	.	000	210			- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
Parking (#/hr)	0											
Turn Type	Split		Perm	<u> </u>					Perm	Constitution of the section of		101,486,486,50
Protected Phases	3piit	1-1-1-1-1	1 61111					2	i Cilli			
Permitted Phases	被推荐 10 与 为 的), projecto	1					_	2			
Actuated Green, G (s)	21.0	21.0	21.0					21.0	21.0			
Effective Green, g (s)	21.0	21.0	21.0					21.0	21.0			
Actuated g/C Ratio	0.42	0.42	0.42					0.42	0.42			
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0			
	542	2535			4 5,7 4 1,9 1 1 1 1			1367	605	8 (V 41 N.S. 12 N		
Lane Grp Cap (vph)			629						603			
v/s Ratio Prot	0.12	c0.26	0.05					c0.18	0.47			
v/s Ratio Perm	0.20	0.60	0.05					0.42	0.17			
v/c Ratio	0.29	0.62	0.13					0.43	0.41			
Uniform Delay, d1	9.6	11.4	8.9					10.3	10.2			
Progression Factor	0.36	0.56	0.42					1.00	1.00			
Incremental Delay, d2	0.8	0.7	0.3					1.0	2.1			
Delay (s)	4.3	7.1	4.0					11.2	12.2			
Level of Service	Α	A	Α					В	В		0.0	
Approach Delay (s) Approach LOS		6.4 A			0.0 A			11.5 B			0.0 A	
Intersection Summary												
HCM Average Control I	Delay		7.9		HCM Le	evel of S	ervice		Α		en egen a etak Geografia	
HCM Volume to Capaci			0.53									
Actuated Cycle Length			50.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity U		na se vince. N	80.6%			el of Se			D			
Analysis Period (min) c Critical Lane Group			15									



Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	25	25	
Yellow Time (s)	4	4	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4 3	
Vehicle Extension (s)	3		
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	12	16	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	28	3	
End Time (s)	3	28	
Yield/Force Off (s)	49	24	
Yield/Force Off 170(s)	37	8	
Local Start Time (s)	29	4	
Local Yield (s)	0	25	
Local Yield 170(s)	38	9	

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 49 (98%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 12: J St & 5th St

ø1	↑ ø2
25 s	25 s

	ၨ		*	1	4	1	4	†	*	-	\	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					†††\$		14.64	ተተ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		0.97	0.95				
Frpb, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6224		3433	3362				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6224		3433	3362				
Volume (vph)	0	0	0	0	2640	55	349	399	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	2640	55	349	399	0	0	0	0.00
RTOR Reduction (vph)	0	0	0	0	3	0	14	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2692	0	335	399	0	0	0	C
Confl. Peds. (#/hr)	V.	U	U	y	2092	60	333	399	U	U	U	Y
Parking (#/hr)					0	00		0				
		7 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 -			U		0-1:4	U				<u> </u>
Turn Type					10 to Sa		Split					
Protected Phases							2	2				
Permitted Phases								1 (63) a min im				
Actuated Green, G (s)					75.5		17.5	17.5				
Effective Green, g (s)					75.0		17.0	17.0				
Actuated g/C Ratio					0.75		0.17	0.17				
Clearance Time (s)					3.5		3.5	3.5				14114 642 1417 6
Lane Grp Cap (vph)					4668		584	572				
v/s Ratio Prot					c0.43		0.10	c0.12				
v/s Ratio Perm												
v/c Ratio					0.58		0.57	0.70				
Uniform Delay, d1					5.5		38.2	39.1				
Progression Factor					1.00		1.02	1.02				
Incremental Delay, d2					0.5		3.7	6.3				
Delay (s)					6.0		42.8	46.3				
Level of Service					Α		D	D				
Approach Delay (s)		0.0			6.0			44.7			0.0	
Approach LOS		Α			Α			D			Α	
Intersection Summary												
HCM Volume to Canadi			14.4		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.60	ا نام راه الما رقوري	D £		(0)		0.0			
Actuated Cycle Length		adiya Yok	100.0			lost time			8.0			
Intersection Capacity U	uuzatior	1 '	112.1%	122 325	CU Lev	el of Se	rvice		Н			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	WBT	NBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	79	21	
Maximum Split (%)	79.0%	21.0%	
Minimum Split (s)	79	21	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	64.5	5.5	
Flash Dont Walk (s)	11	12	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	44.5	23.5	
End Time (s)	23.5	44.5	
Yield/Force Off (s)	20	41	
Yield/Force Off 170(s)	9	29	
Local Start Time (s)	24.5	3.5	
Local Yield (s)	0	21	
Local Yield 170(s)	89	9	
	honoverno exercico		

Cycle Length 100
Control Type Pretimed
Natural Cycle 100

Offset: 20 (20%), Referenced to phase 1:WBT, Start of Yellow

Splits and Phases: 13: I St & 5th St

4-	44
ø1	`N ø2
79 s	21 s

	۶	-	*	•	-	1	4	†	/	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተ _ጉ		ሻ	ተተጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.91		0.86	0.86				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4846		1522	4806				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4846		1522	4806				
Volume (vph)	0	0	0	0	682	198	260	1538	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	682	198	260	1538	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	74	0	0	0	0	0
Lane Group Flow (vph)	Ō	0	0	0	876	0	186	1538	Ō	Ō	0	0
Confl. Peds. (#/hr)			a -a. (1 -a .)		ne Saria	60		100000	e e e e e e e e e e e e e e e e e e e	· · · · · · · · · · · · · · · · · · ·		y (34) ×
Turn Type						11 / 1	Split					
Protected Phases					4		2	2				
Permitted Phases					1. 18 to 10							
Actuated Green, G (s)					21.5		21.5	21.5				
Effective Green, g (s)					21.0		21.0	21.0				
Actuated g/C Ratio					0.42		0.42	0.42				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					2035		639	2019				
v/s Ratio Prot					c0.18		0.12	c0.32				
v/s Ratio Perm					60.10		0.12	00.02				
v/c Ratio					0.43		0.29	0.76				
Uniform Delay, d1					10.3		9.6	12.4				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.7		1.00	2.8				
Delay (s)					10.9		10.7	15.1				
Level of Service					10.9 B		10.7 B	13.1 B				
Approach Delay (s)		0.0			10.9		Ь	14.5			0.0	
Approach LOS		Ο.0			10.9 B			14.3 B			0.0 A	
Approach LOS		А			D			ь			A	
Intersection Summary									_			
HCM Average Control [13.3	200	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.60			etri (195)						
Actuated Cycle Length			50.0			lost time			8.0			
Intersection Capacity U	ulization	Y.,	54.8%		ICU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												

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Phase Number	2	4	
Movement	NBTL	WBT	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	21.5	21.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s)		0	
Time To Reduce (s)	0	0	
Walk Time (s)	10	10	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	48.5	23.5	
End Time (s)	23.5	48.5	
Yield/Force Off (s)	20	45	
Yield/Force Off 170(s)	12	37	
Local Start Time (s)	3.5	28.5	
Local Yield (s)	25	0	
Local Yield 170(s)	17	42	

Cycle Length 50
Control Type Pretimed
Natural Cycle 45

Offset: 45 (90%), Referenced to phase 4:WBT, Start of Yellow

Splits and Phases: 14: L St & 16th St

-4	\	⋖
2	5 s	25 s

Lane Configurations Itify Ideal Flow (vphpl) 1900 1900 19 Total Lost time (s) 4.0 4.0 Lane Util. Factor 0.86 6 Frpb, ped/bikes 0.98 1.00 5 6 7 <	¥	-	*	4	†	<i>></i>	-	↓	4
Ideal Flow (vphpl)	BR WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost time (s)								ተተጉ	
Lane Util. Factor 0.86 Frpb, ped/bikes 0.98 Flpb, ped/bikes 1.00 Frt 0.95 Flt Protected 1.00 Satd. Flow (prot) 5971 Flt Permitted 1.00 Satd. Flow (perm) 5971 Volume (vph) 0 2400 10 Peak-hour factor, PHF 1.00 1.00 1 Adj. Flow (vph) 0 37 Lane Group Flow (vph) 0 3413 Confl. Peds. (#/hr) Parking (#/hr) Turn Type Protected Phases 2 Permitted Phases Actuated Green, G (s) 71.5 Effective Green, g (s) 71.0 Actuated g/C Ratio 0.71 Clearance Time (s) 3.5 Lane Grp Cap (vph) 4239 v/s Ratio Prot c0.57 v/s Ratio Perm v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 10	900 1900	1900	1900	1900	1900	1900	1900	1900	1900
Frpb, ped/bikes 0.98 Flpb, ped/bikes 1.00 Frt 0.95 Flt Protected 1.00 Satd. Flow (prot) 5971 Flt Permitted 1.00 Satd. Flow (perm) 5971 Volume (vph) 0 2400 10 Peak-hour factor, PHF 1.00 1.00 1 Adj. Flow (vph) 0 37 2400 10 RTOR Reduction (vph) 0 37 2400 10 RTOR Reduction (vph) 0 37 2400 10 RTOR Reduction (vph) 0 3413 2 Confl. Peds. (#/hr) 0 3413 2 Parking (#/hr) 7 7 Turn Type Protected Phases 2 Permitted Phases 2 2 Actuated Green, G (s) 71.5 Effective Green, g (s) 71.0 Actuated g/C Ratio 0.71 Clearance Time (s) 3.5 Lane Grp Cap (vph) 4239 v/s Ratio Perm 0.96dr U								4.0	
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Fit Permitted 1.00 Satd. Flow (perm) 5971 Volume (vph) 0 2400 10 Peak-hour factor, PHF 1.00 1.00 1 Adj. Flow (vph) 0 2400 10 RTOR Reduction (vph) 0 37 1 Lane Group Flow (vph) 0 3413 1 Confl. Peds. (#/hr) 2 1 Parking (#/hr) 2 1 Turn Type 2 2 Permitted Phases 2 2 Actuated Green, G (s) 71.5 5 Effective Green, g (s) 71.0 7 Actuated g/C Ratio 0.71 0.71 0.71 Clearance Time (s) 3.5 0.71								0.98	
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Volume (vph) 0 2400 10 Peak-hour factor, PHF 1.00 1.00 1 Adj. Flow (vph) 0 2400 10 RTOR Reduction (vph) 0 3413 Confl. Peds. (#/hr) 0 3413 Clearacted Green, G (s)								0.98	
Peak-hour factor, PHF 1.00 1.00 1 Adj. Flow (vph) 0 2400 10 RTOR Reduction (vph) 0 37 Lane Group Flow (vph) 0 3413 Confl. Peds. (#/hr) Parking (#/hr) Turn Type Protected Phases 2 Permitted Phases Actuated Green, G (s) 71.5 Effective Green, g (s) 71.0 Actuated g/C Ratio 0.71 Clearance Time (s) 3.5 Lane Grp Cap (vph) 4239 v/s Ratio Prot c0.57 v/s Ratio Perm v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 10								4985	
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RTOR Reduction (vph) 0 37 Lane Group Flow (vph) 0 3413 Confl. Peds. (#/hr) Parking (#/hr) Turn Type Protected Phases 2 Permitted Phases Actuated Green, G (s) 71.5 Effective Green, g (s) 71.0 Actuated g/C Ratio 0.71 Clearance Time (s) 3.5 Lane Grp Cap (vph) 4239 v/s Ratio Prot c0.57 v/s Ratio Perm v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 10	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Group Flow (vph) 0 3413 Confl. Peds. (#/hr) Parking (#/hr) Turn Type Protected Phases 2 Permitted Phases Actuated Green, G (s) 71.5 Effective Green, g (s) 71.0 Actuated g/C Ratio 0.71 Clearance Time (s) 3.5 Lane Grp Cap (vph) 4239 v/s Ratio Prot c0.57 v/s Ratio Perm v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s)	1050 C	0	0	0	0	0	230	340	0
Confl. Peds. (#/hr) Parking (#/hr) Turn Type Protected Phases Actuated Green, G (s) 71.5 Effective Green, g (s) 71.0 Actuated g/C Ratio 0.71 Clearance Time (s) 3.5 Lane Grp Cap (vph) 4239 v/s Ratio Prot c0.57 v/s Ratio Perm v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s)	0 0	0	0	0	0	0	0	8	0
Parking (#/hr) Turn Type Protected Phases 2 Permitted Phases 2 Actuated Green, G (s) 71.5 Effective Green, g (s) 71.0 Actuated g/C Ratio 0.71 Clearance Time (s) 3.5 Lane Grp Cap (vph) 4239 v/s Ratio Prot c0.57 v/s Ratio Perm 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay 1 HCM Volume to Capacity ratio Actuated Cycle Length (s) 10	0 0	0	0	0	0	0	0	562	0
Turn Type Protected Phases 2 Permitted Phases Actuated Green, G (s) 71.5 Effective Green, g (s) 71.0 Actuated g/C Ratio 0.71 Clearance Time (s) 3.5 Lane Grp Cap (vph) 4239 v/s Ratio Prot c0.57 v/s Ratio Perm v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s)	60						60		
Protected Phases Permitted Phases Actuated Green, G (s) 71.5 Effective Green, g (s) 71.0 Actuated g/C Ratio 0.71 Clearance Time (s) 3.5 Lane Grp Cap (vph) 4239 v/s Ratio Prot c0.57 v/s Ratio Perm v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 11.0				See Land			0		0
Permitted Phases Actuated Green, G (s) 71.5 Effective Green, g (s) 71.0 Actuated g/C Ratio 0.71 Clearance Time (s) 3.5 Lane Grp Cap (vph) 4239 v/s Ratio Prot c0.57 v/s Ratio Perm v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 11.0							Split		
Actuated Green, G (s) 71.5 Effective Green, g (s) 71.0 Actuated g/C Ratio 0.71 Clearance Time (s) 3.5 Lane Grp Cap (vph) 4239 v/s Ratio Prot c0.57 v/s Ratio Perm v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 1.0							1	1	
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Actuated g/C Ratio 0.71 Clearance Time (s) 3.5 Lane Grp Cap (vph) 4239 v/s Ratio Prot c0.57 v/s Ratio Perm v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 10								21.5	
Clearance Time (s) 3.5 Lane Grp Cap (vph) 4239 v/s Ratio Prot c0.57 v/s Ratio Perm v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 10								21.0	
Lane Grp Cap (vph) 4239 v/s Ratio Prot c0.57 v/s Ratio Perm v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 10								0.21	
v/s Ratio Prot c0.57 v/s Ratio Perm v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 10		211.061.00111.00111.00						3.5	
v/s Ratio Prot c0.57 v/s Ratio Perm v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 10								1047	
v/c Ratio 0.96dr Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 100								c0.11	
Uniform Delay, d1 9.8 Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 1.00									
Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 100								0.54	
Progression Factor 1.00 Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 100								35.2	
Incremental Delay, d2 1.7 Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 10								0.81	
Delay (s) 11.5 Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 10.5								1.8	
Level of Service B Approach Delay (s) 11.5 Approach LOS B Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 10								30.4	
Approach LOS B Intersection Summary HCM Average Control Delay 1 HCM Volume to Capacity ratio Actuated Cycle Length (s) 10								С	
Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 10		0.0			0.0			30.4	
HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 10		Α			Α			С	
HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 10									
HCM Volume to Capacity ratio Actuated Cycle Length (s)	14.2	HCM Le	vel of S	ervice		В			
Actuated Cycle Length (s) 10	0.74		. T. S.						
49 DESTRUCTOR WITH SERVICE AND SERVICE AND SERVICE AND SERVICE AND SERVICE AND SERVICE AND AND ADDRESS OF THE PARTY OF THE	00.0	Sum of	lost time	e (s)		8.0			
Intersection Capacity Utilization 7.3	3.2%	ICU Lev				D.O			
Analysis Period (min)	15	.55 200	5. 5. 50						
dr Defacto Right Lane. Recode with 1 th		as a righ	nt lane.						
c Critical Lane Group		ac a rigi							

	\	-
Phase Number	1	2
Movement	SBTL	EBT
Lead/Lag	Lead	Lag
Lead-Lag Optimize		VA
Recall Mode	Max	Max
Maximum Split (s)	25	75
Maximum Split (%)	25.0%	75.0%
Minimum Split (s)	18.5	30.5
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	0
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s		0
Time To Reduce (s)	0	0
Walk Time (s)	7	19
Flash Dont Walk (s)	8	8
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes
Start Time (s)	90.5	
End Time (s)	15.5	90.5
Yield/Force Off (s)	12	87
Yield/Force Off 170(s)	4	
Local Start Time (s)	3.5	
Local Yield (s)	25	
Local Yield 170(s)	17	92
Intersection Summary		
Cycle Length		

Cycle Length

100 Pretimed

Control Type Natural Cycle

60

Offset: 87 (87%), Referenced to phase 2:EBT, Start of Yellow

Splits and Phases: 1: Q St & 3rd St

▶ ø1	→ ø2
25 s	75 s

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	≯	-	*	•	4	•	4	†	/	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		-		-	ተተኩ						∱ }	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	4.0
Lane Util. Factor					0.91						0.91	0.91
Frpb, ped/bikes					1.00						0.99	0.93
Flpb, ped/bikes					1.00						1.00	1.00
Frt					1.00						0.98	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					4863						3117	1205
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					4863						3117	1205
Volume (vph)	0	0	0	170	620	0	0	0	0	0	400	320
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	170	620	0	0	0	0	0	400	320
RTOR Reduction (vph)	0	0	0	0	78	0	0	0	0	0	27	171
Lane Group Flow (vph)	0	0	0	0	712	0	0	0	0	0	442	80
Confl. Peds. (#/hr)				60								60
Parking (#/hr)				0	0						0	0
Turn Type				Split								Perm
Protected Phases				2	2						1	-
Permitted Phases												1
Actuated Green, G (s)					27.5						15.5	15.5
Effective Green, g (s)					27.0						15.0	15.0
Actuated g/C Ratio					0.54						0.30	0.30
Clearance Time (s)					3.5						3.5	3.5
Lane Grp Cap (vph)					2626						935	362
v/s Ratio Prot					c0.15						c0.14	JUL
v/s Ratio Perm					60.10						00.14	0.07
v/c Ratio					0.27						0.47	0.22
Uniform Delay, d1					6.2						14.3	13.1
Progression Factor					1.00						1.00	1.00
Incremental Delay, d2					0.3						1.7	1.4
Delay (s)					6.5						16.0	14.5
Level of Service					0.5 A						10.0 B	14.C
Approach Delay (s)		0.0			6.5			0.0			15.5	
Approach LOS		Α			0.5 A			Α			В	
Intersection Summary												
HCM Average Control Delay HCM Volume to Capacity ratio			10.8	and the second	HCM Le	evel of S	ervice		В			
			0.34		o f		(-)		0.0			
Actuated Cycle Length			50.0			lost time			8.0			
Intersection Capacity Ut	llization		39.8%		ICU Lev	el of Se	rvice		A			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2
Movement	SBT	WBTL
Lead/Lag	Lead	Lag
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	19	31
	38.0%	62.0%
Minimum Split (s)	18.5	30.5
Yellow Time (s)	3.5	
All-Red Time (s)	0	0
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s)		0
Time To Reduce (s)	0	0
Walk Time (s)	7	19
Flash Dont Walk (s)	8	8
Dual Entry	Yes	Yes
Inhibit Max	Yes	
Start Time (s)	40.5	
End Time (s)	9.5	40.5
Yield/Force Off (s)	6	37
Yield/Force Off 170(s)	48	29
Local Start Time (s)	3.5	22.5
Local Yield (s)	19	0
Local Yield 170(s)	11	42
Intersection Summary		
Cycle Length		

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 37 (74%), Referenced to phase 2:WBTL, Start of Yellow

Splits and Phases: 2: P St & 3rd St

4	ø1	▼ ₀₂
19:	S	31 s

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Movement	EBT	EBR	SBL	SBT	SEL	SER	
Lane Configurations	ĥ			ተተኩ	ኝነሃ		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0			4.0	4.0		
Lane Util. Factor	1.00			0.91	0.97		
Frpb, ped/bikes	0.98			1.00	1.00		
Flpb, ped/bikes	1.00			1.00	1.00		
Frt	0.98			1.00	0.96		
Flt Protected	1.00			0.98	0.96		
Satd. Flow (prot)	1780			4974	3347		
Flt Permitted	1.00			0.98	0.96		
Satd. Flow (perm)	1780			4974	3347		
Volume (vph)	90	20	400	490	470	170	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	90	20	400	490	470	170	
RTOR Reduction (vph)	12	0	0	164	0	0	
Lane Group Flow (vph)	98	0	0	726	640	0	
Confl. Peds. (#/hr)		60	60				
Parking (#/hr)			0				
Turn Type			Split				
Protected Phases	6		4	4	5		
Permitted Phases							
Actuated Green, G (s)	12.5			29.5	17.5		
Effective Green, g (s)	12.0			29.0	17.0		
Actuated g/C Ratio	0.17			0.41	0.24		
Clearance Time (s)	3.5			3.5	3.5		
Lane Grp Cap (vph)	305			2061	813		
v/s Ratio Prot	c0.06			c0.15	c0.19		
v/s Ratio Perm							
v/c Ratio	0.32			0.35	0.79		
Uniform Delay, d1	25.4			14.1	24.8		
Progression Factor	1.00			0.54	1.00		
Incremental Delay, d2	2.8			0.4	7.6		
Delay (s)	28.2			8.0	32.4		
Level of Service	С			Α	С		
Approach Delay (s)	28.2			8.0	32.4		
Approach LOS	С			A	С		
Intersection Summary							
HCM Average Control D			18.9	I	HCM Le	vel of Service	В
HCM Volume to Capaci			0.47				
Actuated Cycle Length			70.0			ost time (s)	12.0
Intersection Capacity Ut			61.3%		CU Leve	el of Service	B
Analysis Period (min)			15				
c Critical Lane Group							

	Á	4	\	-
Phase Number	2	4	5	6
Movement	Ped	SBTL	SEL	EBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize				•
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	37	33		16
			30.0%	
Minimum Split (s)	37	33		16
Yellow Time (s)	3.5	3.5		3.5
All-Red Time (s)	0	0	0	0
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3		
Minimum Gap (s)	3	3		
Time Before Reduce (s)		Ō		0
Time To Reduce (s)	0	0	0	
Walk Time (s)	22.5	20.5		4.5
Flash Dont Walk (s)	11	9		8
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes		
Start Time (s)	20.5	57.5		
End Time (s)	57.5	20.5		
Yield/Force Off (s)	54			
Yield/Force Off 170(s)	43	8		46
Local Start Time (s)	3.5	40.5		
Local Yield (s)	37	0		37
Local Yield 170(s)	26	61		29
Intersection Summary				
Cycle Length			70	
Control Type		Р	retimed	
Natural Cycle			70	

Splits and Phases: 3: N St & 3rd St

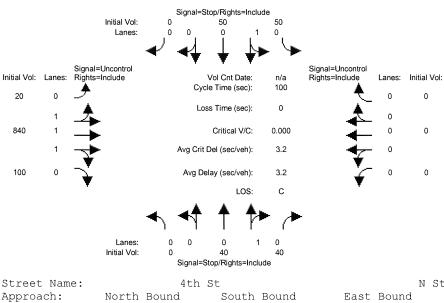
Offset: 17 (24%), Referenced to phase 4:SBTL, Start of Yellow

Ák ø2		▶ ₀4	
ÆR ø2 37\$		33 s	
→ ø5	→ ø6		
21 s	16 s		

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Level Of Service Computation Report 2000 HCM Unsignalized (Future Volume Alternative) 2025 AM

Intersection #4: N St./4th St.



Street Name:			4th	n St					N	St		
Approach:				Sou	ith Bo	ound	Εá	ast Bo	ound			
Movement:						- R				L -		
Volume Module												
	-	4.0	4.0	F.0	F 0	0	20	0.40	100	0	0	0
Base Vol:	0	40	40	50	50	0	20	840	100	0	0	0
Growth Adj: 1			1.00	1.00		1.00		1.00	1.00		1.00	1.00
Initial Bse:	-	40 0	40	50	50	0	20	840	100	0	0	0
Added Vol:			0	0	0	0	0	0	0	0	0	0
PasserByVol:	U		0	0	0	0	0	0	0	0	0	0
Initial Fut:		40	40	50	50	0	20	840	100	0	0	0
User Adj:			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
PHF Volume:		40	40	50	50	0	20	840	100	0	0	0
	-	0	0	0	0	0	0	0	0	0	0	0
	0		40	50	50	0	20	840	100	0	0	0
Critical Gap D												
Critical Gp:x:						XXXXX						
FollowUpTim:xx												
Capacity Modu	le:											
Cnflict Vol: :	XXXX	945	330	355	995	XXXXX	15	XXXX	XXXXX	XXXX	XXXX	XXXXX
Potent Cap.: :	XXXX	264	716	604	247	XXXXX	1616	XXXX	XXXXX	XXXX	XXXX	XXXXX
Move Cap.:	XXXX	257	716	491	240	XXXXX	1596	XXXX	XXXXX	XXXX	XXXX	XXXXX
Volume/Cap: :	XXXX	0.16	0.06	0.10	0.21	XXXX			XXXX		XXXX	XXXX
Level Of Serv	ice M	odule	e:									
Queue: x:	XXXX	XXXX	XXXXX	XXXXX	XXXX	XXXXX	0.0	XXXX	XXXXX	XXXXX	XXXX	XXXXX
Stopped Del:xx	XXXX	XXXX	XXXXX	XXXXX	XXXX	XXXXX	7.3	XXXX	XXXXX	XXXXX	XXXX	XXXXX
LOS by Move:	*	*	*	*	*	*	А	*	*	*	*	*
Movement:	LT -	- LTR	- RT	LT -	- LTR	- RT	LT ·	- LTR	- RT	LT -	- LTR	- RT
Shared Cap.: :	xxxx	xxxx	378	323	xxxx	xxxxx	xxxx	XXXX	xxxxx	XXXX	xxxx	XXXXX
SharedOueue:x							0.0	xxxx	xxxxx	xxxxx	xxxx	XXXXX
Shrd StpDel:x:	xxxx	xxxx	17.0	21.1	xxxx	xxxxx	7.3	xxxx	XXXXX	xxxxx	xxxx	XXXXX
Shared LOS:				C		*		*			*	*
ApproachDel:				Ū	21.1		x:	xxxxx		X	xxxxx	
ApproachLOS:					C		222	*		212	*	

	ၨ	-	*	•	4	*	1	†	1	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተጉ						ተተጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Fr		1.00						0.97				
Flt Protected		1.00						1.00				
Satd. Flow (prot)		5066						4863				
Flt Permitted		1.00						1.00				
Satd. Flow (perm)		5066						4863				
Volume (vph)	70	860	0	0	0	0	0	1040	290	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	70	860	0	0	0	0	0	1040	290	0	0	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	46	0	0	0	Ō
Lane Group Flow (vph)	0	917	0	0	0	0	0	1284	0	0	0	0
Confl. Peds. (#/hr)	60				.				60			
Parking (#/hr)	0		0						0			
Turn Type	Split											
Protected Phases	1	1						2				
Permitted Phases												
Actuated Green, G (s)		31.5						31.5				
Effective Green, g (s)		31.0						31.0				
Actuated g/C Ratio		0.44						0.44				
Clearance Time (s)		3.5						3.5				
Lane Grp Cap (vph)		2244						2154				
v/s Ratio Prot		c0.18						c0.26				
v/s Ratio Perm												
v/c Ratio		0.41						0.60				
Uniform Delay, d1		13.3						14.8				
Progression Factor		1.42						1.00				
Incremental Delay, d2		0.5						1.2				
Delay (s)		19.3						16.0				
Level of Service		В						В				
Approach Delay (s)		19.3			0.0			16.0			0.0	
Approach LOS		В			Α			В			Α	
Intersection Summary												
HCM Average Control D			17.4	1	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci	ty ratio		0.50									
Actuated Cycle Length ((s)		70.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity Ut			52.2%	I was a second s	CU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												

Phase Number	1	2
Movement	EBTL	NBT
Lead/Lag	Lead	Lag
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	35	35
Maximum Split (%)	50.0%	50.0%
Minimum Split (s)	34.5	
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	0
Minimum Initial (s)	4	
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s)		0
Time To Reduce (s)	0	0
Walk Time (s)	22	
Flash Dont Walk (s)	9	9
Dual Entry	Yes	
Inhibit Max	Yes	
Start Time (s)	65.5	
End Time (s)	30.5	
Yield/Force Off (s)	27	
Yield/Force Off 170(s)	18	
Local Start Time (s)	38.5	
Local Yield (s)	0	
Local Yield 170(s)	61	26
Intersection Summary		

Cycle Length 70 Control Type Pretimed Natural Cycle 70

Offset: 27 (39%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 5: N St & 5th St

♣ ø1	↑ ø2
35 s	35 s

	*	-	-	•	-	•	1	†	1	-	+	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተጉ		ሻ	ተተ						বাাচ	
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.91		1.00	0.95						0.86	
Frpb, ped/bikes		1.00		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.99		1.00	1.00						0.96	
FIt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		5044		1770	3539						6078	
FIt Permitted		1.00		0.95	1.00						0.99	
Satd. Flow (perm)		5044		1770	3539						6078	
Volume (vph)	0	1060	40	90	450	0	0	0	0	350	740	400
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1060	40	90	450	0	0	0	0	350	740	400
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	94	0
Lane Group Flow (vph)	0	1094	0	90	450	0	0	0	0	0	1396	0
Confl. Peds. (#/hr)			60									
Parking (#/hr)										0		
Turn Type		<u> </u>		Prot						Split		
Protected Phases		6		5	2					. 4	4	
Permitted Phases												
Actuated Green, G (s)		20.0		12.5	36.0						25.5	
Effective Green, g (s)		19.5		12.0	35.5						26.5	
Actuated g/C Ratio		0.28		0.17	0.51						0.38	
Clearance Time (s)		3.5		3.5	3.5						5.0	
Lane Grp Cap (vph)		1405		303	1795						2301	
v/s Ratio Prot		c0.22		c0.05	0.13						c0.23	
v/s Ratio Perm												
v/c Ratio		0.78		0.30	0.25						0.61	
Uniform Delay, d1		23.3		25.3	9.7						17.5	
Progression Factor		1.00		0.77	1.98						0.84	
Incremental Delay, d2		4.3		2.4	0.3						1.1	
Delay (s)		27.6		21.9	19.6						15.7	
Level of Service		С		С	В						В	
Approach Delay (s)		27.6			20.0			0.0			15.7	
Approach LOS		С			С			Α			В	
Intersection Summary												
HCM Average Control D			20.6	I	HCM Le	vel of S	ervice		С			
HCM Volume to Capacity			0.60									
Actuated Cycle Length (s			70.0			lost time			12.0			
Intersection Capacity Uti	Iızation		59.3%		CU Lev	el of Se	rvice		В			
Analysis Period (min)			15									

	4-	1	1	-
Phase Number	2	4	5	6
Movement	WBT	SBTL	WBL	EBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize				•
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	39.5	30.5	16	23.5
	56.4%	43.6%	22.9%	33.6%
Minimum Split (s)	39.5	30.5	7.5	23.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0	1.5	0	0
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)) 0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	26	20.5		10
Flash Dont Walk (s)	10	5		10
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	22.5	62	22.5	38.5
End Time (s)	62	22.5	38.5	62
Yield/Force Off (s)	58.5	17.5	35	58.5
Yield/Force Off 170(s)	48.5	12.5	35	48.5
Local Start Time (s)	57.5	27	57.5	3.5
Local Yield (s)	23.5	52.5	0	23.5
Local Yield 170(s)	13.5	47.5	0	13.5
Intersection Summary				
Cycle Length			70	
Control Type		Р	retimed	
Natural Cycle			70	
Offset: 35 (50%), Refere	enced t	to phase	2:WBT	and 5:\

Splits and Phases: 6: Capitol Mall & 3rd St

← ø2		▶ ø4	
39.5 s		30.5 s	
√ ø5 16 s	→ ø6 23.5 s		

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	•	-	-	1	-	The same of the sa		T		*	₩	*
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4₽	7		414			4			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.0			4.0	
Lane Util. Factor		0.95	1.00		0.91			1.00			1.00	
Frpb, ped/bikes		1.00	0.87		0.99			0.96			1.00	
Flpb, ped/bikes		1.00	1.00		1.00			0.99			0.98	
Frt		1.00	0.85		0.98			0.95			0.99	
FIt Protected		1.00	1.00		1.00			0.99			0.99	
Satd. Flow (prot)		3536	1380		4937			1494			1612	
Flt Permitted		0.95	1.00		0.92			0.95			0.94	
Satd. Flow (perm)		3362	1380		4546			1427			1530	
Volume (vph)	10	1200	200	10	520	60	10	20	20	40	140	10
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	1200	200	10	520	60	10	20	20	40	140	10
RTOR Reduction (vph)	0	0	93	0	20	0	0	13	0	0	3	C
Lane Group Flow (vph)	0	1210	107	0	570	0	0	37	0	0	187	C
Confl. Peds. (#/hr)	60		60	60		60	60		60	60		60
Parking (#/hr)							0	0	0	0	0	C
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)		38.0	38.0		38.0			23.5			23.5	
Effective Green, g (s)		37.5	37.5		37.5			24.5			24.5	
Actuated g/C Ratio		0.54	0.54		0.54			0.35			0.35	
Clearance Time (s)		3.5	3.5		3.5			5.0			5.0	
Lane Grp Cap (vph)		1801	739		2435			499			536	
v/s Ratio Prot					- 199							
v/s Ratio Perm		c0.36	0.08		0.13			0.03			c0.12	
v/c Ratio		0.67	0.14		0.23			0.07			0.35	
Uniform Delay, d1		11.8	8.2		8.6			15.2			16.8	
Progression Factor		0.94	2.50		0.51			0.80			0.76	
Incremental Delay, d2		1.3	0.3		0.2			0.3			1.6	
Delay (s)		12.4	20.7		4.6			12.4			14.5	
Level of Service		В	C		A			В			В	
Approach Delay (s)		13.6	16.03 10.0 1 0.		4.6			12.4			14.5	
Approach LOS		В			Α			В			В	
Intersection Summary												
HCM Average Control [11.3	I	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.54									
Actuated Cycle Length			70.0			lost time			8.0			
Intersection Capacity U			61.0%			el of Se			В			
Analysis Period (min)			15									

3/1/2005 Fehr & Peers Associates, Inc.



Phase Number	2	4	
Movement	EBWB	NBSB	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	41.5	28.5	
Maximum Split (%)	59.3%	40.7%	
Minimum Split (s)	22.5	20	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	10	10	
Dual Entry	Yes	Yes	
Inhibit Max	Yes		
Start Time (s)	59		
End Time (s)	30.5		
Yield/Force Off (s)	27		
Yield/Force Off 170(s)	17		
Local Start Time (s)	32		
Local Yield (s)	0		
Local Yield 170(s)	60	17	
Intersection Summary			
Cycle Length			
Control Type		Preti	
Natural Cycle Offset: 27 (39%), Refer			45

Splits and Phases: 7: Capitol Mall & 4th St

ø2	1 04
41.5 s	28.5 s

4	*	1	†	~	-	+	4
WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ተተ _ጉ		ሻሻ	ተተ _ጉ				
1900	1900	1900	1900	1900	1900	1900	1900
4.0		4.0	4.0				
0.91		0.97	0.91				
0.98		1.00	0.95				
1.00		1.00	1.00				
0.97		1.00	0.94				
1.00		0.95	1.00				
4817		3433	4567				
1.00		0.95	1.00				
4817		3433	4567				
170	50	420	460	300	0	0	0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
170	50	420	460	300	0	0	0
37	0	0	131	0	0	0	0
183	0	420	629	0	0	0	0
	60			60			
		Split					
2		8	8				
18.5		25.0	25.0				
18.0		26.0	26.0				
0.26		0.37	0.37				
3.5		5.0	5.0				
1239		1275	1696				
0.04		0.12	c0.14				
0.15		0.33	0.37				
20.1		15.8	16.0				
1.00		0.41	0.23				
0.3		0.6	0.5				
20.3		7.1	4.2				
С		Α	Α				
20.3			5.2			0.0	
С			Α			Α	
ICM Lev	vel of Se	ervice		В			
CU Leve	el of Ser	vice		В			
			Sum of lost time (s) CU Level of Service				

ᄼ	-	-	<1
<i>></i> *	4	-	1

Phase Number	1	2	6	8
Movement	EBL	WBT	EBT	NBTL
Lead/Lag	Lag	Lead		
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	18	22	40	30
Maximum Split (%)	25.7%	31.4%	57.1%	42.9%
Minimum Split (s)	7.5	20.5	20.5	17
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0	0	0	1.5
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)		7	7	7
Flash Dont Walk (s)		10	10	5
Dual Entry	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	20.5	68.5	68.5	38.5
End Time (s)	38.5	20.5	38.5	68.5
Yield/Force Off (s)	35	17	35	63.5
Yield/Force Off 170(s)	35	7	25	58.5
Local Start Time (s)	55.5	33.5	33.5	3.5
Local Yield (s)	0	52	0	28.5
Local Yield 170(s)	0	42	60	23.5

Cycle Length 70 Control Type Pretimed Natural Cycle 55

Offset: 35 (50%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow

Splits and Phases: 8: Capitol Mall & 5th St

← ø2	→ _{ø1}	★ ₀8	
22 s	18 s	30 s	
→ ø6			
40 s			

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	ⅉ		*	1	4	1	4	†	-	-	+	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				ሻ	414	7					ተተጉ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0					4.0	
Lane Util. Factor				0.91	0.91	1.00					0.91	
Frt				1.00	1.00	0.85					0.99	
FIt Protected				0.95	0.99	1.00					1.00	
Satd. Flow (prot)				1610	3356	1583					5049	
FIt Permitted				0.95	0.99	1.00					1.00	
Satd. Flow (perm)				1610	3356	1583					5049	
Volume (vph)	0	0	0	490	570	170	0	0	0	0	1000	50
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	490	570	170	0	0	0	0	1000	50
RTOR Reduction (vph)	0	0	0	26	26	92	0	0	0	0	7	C
Lane Group Flow (vph)	0	0	0	319	689	78	0	0	0	0	1043	C
Turn Type			(ustom	(ustom						
Protected Phases											4	
Permitted Phases				2	2	2						
Actuated Green, G (s)				32.5	32.5	32.5					30.5	
Effective Green, g (s)				32.0	32.0	32.0					30.0	
Actuated g/C Ratio				0.46	0.46	0.46					0.43	
Clearance Time (s)				3.5	3.5	3.5					3.5	
Lane Grp Cap (vph)				736	1534	724					2164	
v/s Ratio Prot											c0.21	
v/s Ratio Perm				0.20	c0.21	0.05						
v/c Ratio				0.43	0.45	0.11					0.48	
Uniform Delay, d1				12.9	13.0	10.8					14.4	
Progression Factor				1.00	1.00	1.00					1.00	
Incremental Delay, d2				1.9	1.0	0.3					0.8	
Delay (s)				14.7	13.9	11.1					15.2	
Level of Service				В	В	В					В	
Approach Delay (s)		0.0			13.8			0.0			15.2	
Approach LOS		Α			В			Α			В	
Mattheway and a second of the												
Intersection Summary HCM Average Control De	مامین		14.4		JCM1 o	vel of S	onvioo		В			
			0.46	I	TOM LE	vei oi S	ei vice		D			
HCM Volume to Capacity			70.0	·	Sum of	aat tima	. (0)		8.0			
Actuated Cycle Length (s			47.1%			ost time el of Se			0.0 A			
Intersection Capacity Util	uzation		47.1%	i Santana kata	CO Lev	ei 0i 3e	IVICE		А			
Analysis Period (min) c Critical Lane Group			10									

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		↓
Phase Number	2	4
Movement	WBTL	SBT
Lead/Lag		
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	36	34
Maximum Split (%)		48.6%
Minimum Split (s)	7.5	34
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	0
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s		0
Time To Reduce (s)	0	0
Walk Time (s)		22.5
Flash Dont Walk (s)		8
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes
Start Time (s)	2.5	38.5
End Time (s)	38.5	2.5
Yield/Force Off (s)	35	
Yield/Force Off 170(s)	35	61
Local Start Time (s)	3.5	
Local Yield (s)	36	0
Local Yield 170(s)	36	62
Intersection Summary		
Cycle Length		
Control Type		Pret
Natural Cycle		
Offset: 69 (99%), Refer	enced t	o phase 4

Splits and Phases: 9: L St & 3rd St

	ၨ	-	*	•	4	*	1	†	<i>></i>	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					titi₽		K	ተተተ				77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		1.00	0.91				0.88
Frpb, ped/bikes					0.99		1.00	1.00				0.95
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.97		1.00	1.00				0.85
FIt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6174		1770	5085				2656
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6174		1770	5085				2656
Volume (vph)	0	0	0	0	1140	240	160	960	0	0	0	380
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	1140	240	160	960	0	0	0	380
RTOR Reduction (vph)	0	0	0	0	54	0	8	0	0	0	0	9
Lane Group Flow (vph)	0	0	0	0	1326	0	152	960	0	0	0	371
Confl. Peds. (#/hr)						60	60					60
Turn Type							Split				c	custom
Protected Phases					2		1	1				
Permitted Phases												1
Actuated Green, G (s)					25.0		35.5	35.5				35.5
Effective Green, g (s)					26.0		36.0	36.0				36.0
Actuated g/C Ratio					0.37		0.51	0.51				0.51
Clearance Time (s)					5.0		4.5	4.5				4.5
Lane Grp Cap (vph)					2293		910	2615				1366
v/s Ratio Prot					c0.21		0.09	c0.19				
v/s Ratio Perm												0.14
v/c Ratio					0.58		0.17	0.37				0.27
Uniform Delay, d1					17.6		9.0	10.2				9.6
Progression Factor					1.00		0.34	0.50				1.00
Incremental Delay, d2					1.1		0.3	0.3				0.5
Delay (s)					18.7		3.3	5.4				10.1
Level of Service					В		Α	Α				В
Approach Delay (s)		0.0			18.7			5.1			10.1	
Approach LOS		Α			В			Α			В	
Intersection Summary												
HCM Average Control D	•		12.3		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.46		_							
Actuated Cycle Length (70.0			lost time			8.0			
Intersection Capacity Ut	ilization	1	68.2%		CU Lev	el of Se	rvice		С			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2
Movement	NBTL	WBT
Lead/Lag	Lead	Lag
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	40	30
Maximum Split (%)	57.1%	42.9%
Minimum Split (s)	40	30
Yellow Time (s)	3.5	3.5
All-Red Time (s)	1	1.5
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s)		0
Time To Reduce (s)	0	0
Walk Time (s)	26.5	16
Flash Dont Walk (s)	9	9
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes
Start Time (s)	37	7
End Time (s)	7	
Yield/Force Off (s)	2.5	
Yield/Force Off 170(s)	63.5	23
Local Start Time (s)	5	45
Local Yield (s)	40.5	0
Local Yield 170(s)	31.5	61
Intersection Summary		
Cycle Length		
Control Type		Pretin

10: L St & 5th St Splits and Phases:

Natural Cycle

4		************
Ø1	ø2	
40 s	30 %	

70

Offset: 32 (46%), Referenced to phase 2:WBT, Start of Yellow

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Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	SEL2	SEL	SER	
Lane Configurations		ብተኩ		1>	7	ሻ	44		311Y		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0		4.0		
Lane Util. Factor		0.91		0.95	0.95	0.91	0.91		0.91		
Frpb, ped/bikes		0.99		1.00	1.00	1.00	1.00		0.98		
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00		1.00		
Frt		0.98		0.92	0.85	1.00	1.00		0.97		
FIt Protected		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (prot)		4953		1620	1504	1610	3362		6158		
Flt Permitted		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (perm)		4953		1620	1504	1610	3362		6158		
Volume (vph)	100	1990	270	40	130	170	220	100	1880	580	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	100	1990	270	40	130	170	220	100	1880	580	
RTOR Reduction (vph)	0	16	0	2	2	0	0	0	0	0	
Lane Group Flow (vph)	0	2344	0	90	76	126	264	0	2560	0	
Confl. Peds. (#/hr)			60							60	
Turn Type	Split				Perm	Split		Split			
Protected Phases	3	3		5		1	1	2	2		
Permitted Phases					5						
Actuated Green, G (s)		37.0		6.5	6.5	6.5	6.5		35.0		
Effective Green, g (s)		37.0		6.0	6.0	6.0	6.0		35.0		
Actuated g/C Ratio		0.37		0.06	0.06	0.06	0.06		0.35		
Clearance Time (s)		4.0		3.5	3.5	3.5	3.5		4.0		
Lane Grp Cap (vph)		1833		97	90	97	202		2155		
v/s Ratio Prot		c0.47		c0.06		0.08	c0.08		c0.42		
v/s Ratio Perm		e en estamonia de la companio		s automated no entire	0.05	C. N. Salah sanan Salaman L. Jak	ents on boundaring of the		4 n.A. (Aldrew 1998 1914 191		
v/c Ratio		1.28		0.93	0.85	1.30	1.31		1.19		
Uniform Delay, d1		31.5		46.8	46.5	47.0	47.0		32.5		
Progression Factor		1.00		1.00	1.00	1.14	1.14		1.00		
Incremental Delay, d2		129.7		73.6	59.2	190.1	168.4		89.6		
Delay (s)		161.2		120.3	105.7	243.9	222.2		122.1		
Level of Service		F		F	F	F	F		F		
Approach Delay (s)		161.2		113.6			229.2		122.1		
Approach LOS		F		F			F		F		
Intersection Summary											
HCM Average Control E			146.3	na se a composito de mo	HCM Le	vel of S	ervice		F		
HCM Volume to Capaci			1.22								
Actuated Cycle Length			100.0		Sum of I				16.0		
Intersection Capacity U	tilization		107.1%		CU Lev	el of Se	rvice		G		
Analysis Period (min)			15								
c Critical Lane Group											

	1	4	4	†	ÁÅ		
Phase Number	1	2	3	5	6		
Movement	SBTL	SEL	EBTL	NBT	Ped		
Lead/Lag	Lead	Lag					
Lead-Lag Optimize							
Recall Mode	Max	Max	Max	Max	Max		
Maximum Split (s)	10	39	41	10	59		
Maximum Split (%)	10.0%	39.0%	41.0%	10.0%	59.0%		
Minimum Split (s)	7.5	39	41	7.5	59		
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		
All-Red Time (s)	0	0.5	0.5	0	0.5		
Minimum Initial (s)	4	4	4	4	4		
Vehicle Extension (s)	3	3		3			
Minimum Gap (s)	3	3	3	3	3		
Time Before Reduce (s)) 0	0	0	0	0		
Time To Reduce (s)	0	0	0	0	0		
Walk Time (s)		24			44		
Flash Dont Walk (s)		11	11		11		
Dual Entry	Yes	Yes	Yes	Yes	Yes		
Inhibit Max	Yes	Yes					
Start Time (s)	35	45					
End Time (s)	45	84	35	94	94		
Yield/Force Off (s)	41.5	80		90.5			
Yield/Force Off 170(s)	41.5	69	20	90.5			
Local Start Time (s)	55	65	14				
Local Yield (s)	61.5	0	51	10.5	10		
Local Yield 170(s)	61.5	89	40	10.5	99		
Intersection Summary							
Cycle Length			100				
Control Type		P	retimed				
Natural Cycle			150				
Offset: 80 (80%), Refer	enced t	o phase	e 2:SEL	, Start o	f Yellow		
Splits and Phases: 1	1: J St 8	& 3rd St	t			 	
K. 🖎				4	A		

↓ ø1	★ ø2	↑ ø5	 ♣ ₀₃
10 s	39 s	10 s	41 s
Ák ø6			
.₹ჩ ø6 59 s			

	≯	-	*	•	•		4	†	-	-	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	नाा	7					<u>ተ</u> ጉ	7			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.81	1.00					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.96					1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.96	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	6030	1514					3262	1441			
Flt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	6030	1514					3262	1441			
Volume (vph)	780	3110	380	0	0	0	0	630	570	0	0	O
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	780	3110	380	0	0	0	0	630	570	0	0	C
RTOR Reduction (vph)	48	2	167	0	0	0	0	0	0	0	0	C
Lane Group Flow (vph)	673	3167	213	0	0	0	0	842	358	0	0	C
Confl. Peds. (#/hr)	60		60			an ing kalabata ∓ng						
Parking (#/hr)	0											
Turn Type	Split		Perm						Perm			
Protected Phases	1	1	. 0,					2				
Permitted Phases			1						2			
Actuated Green, G (s)	56.0	56.0	56.0					36.0	36.0			
Effective Green, g (s)	56.0	56.0	56.0					36.0	36.0			
Actuated g/C Ratio	0.56	0.56	0.56					0.36	0.36			
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Grp Cap (vph)	722	3377	848					1174	519			
v/s Ratio Prot	0.52	c0.53	0-10					c0.26	0.0			
v/s Ratio Perm	0.02	00.00	0.14					00.20	0.25			
v/c Ratio	0.93	0.94	0.25					0.72	0.69			
Uniform Delay, d1	20.3	20.4	11.3					27.6	27.2			
Progression Factor	0.74	0.75	1.47					1.00	1.00			
Incremental Delay, d2	2.8	0.73	0.1					3.8	7.3			
Delay (s)	17.8	16.1	16.7					31.4	34.6			
Level of Service	17.0 B	В	В					C	C			
Approach Delay (s)	U	16.4			0.0			32.3	9		0.0	
Approach LOS		В			Α			02.0 C			Α	
Intersection Summary												
HCM Average Control [Delay		19.9	1000	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.85									
Actuated Cycle Length			100.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity U		oren amerikan (SPPR) 	84.4%			el of Se			Ε			
Analysis Period (min)			15									

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4	†

Phase Number	1	2
Movement	EBTL	NBT
Lead/Lag	Lead	Lag
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	60	40
Maximum Split (%)	60.0%	40.0%
Minimum Split (s)	60	40
Yellow Time (s)	4	4
All-Red Time (s)	0	0
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s		0
Time To Reduce (s)	0	0
Walk Time (s)	44	20
Flash Dont Walk (s)	12	16
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes
Start Time (s)	43	3
End Time (s)	3	43
Yield/Force Off (s)	99	39
Yield/Force Off 170(s)	87	23
Local Start Time (s)	44	4
Local Yield (s)	0	
Local Yield 170(s)	88	24
Intersection Summary		
Cycle Length		

Control Type Pretimed Natural Cycle 100

Offset: 99 (99%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 12: J St & 5th St

♣ ø1	↑ ø2
60 s	40 s

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	≯		*	*	4	•	4	†	~	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					titi₽		N. W.	ተተ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		0.97	0.95				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.99		1.00	1.00				
FIt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6136		3433	3362				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6136		3433	3362				
Volume (vph)	0	0	0	0	1210	110	200	1160	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	1210	110	200	1160	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	29	0	5	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1291	0	195	1160	0	0	0	0
Confl. Peds. (#/hr)						60						
Parking (#/hr)					0			0				
Turn Type					***************************************		Split					
Protected Phases					1		2	2				
Permitted Phases												
Actuated Green, G (s)					16.5		26.5	26.5				
Effective Green, g (s)					16.0		26.0	26.0				
Actuated g/C Ratio					0.32		0.52	0.52				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					1964		1785	1748				
v/s Ratio Prot					c0.21		0.06	c0.35				
v/s Ratio Perm					JU		0.00	00.00				
v/c Ratio					0.66		0.11	0.66				
Uniform Delay, d1					14.6		6.1	8.8				
Progression Factor					1.00		1.34	1.40				
Incremental Delay, d2					1.7		0.1	1.0				
Delay (s)					16.4		8.2	13.4				
Level of Service					В		A	В				
Approach Delay (s)		0.0			16.4		• •	12.6			0.0	
Approach LOS		Α.			В			В.			A	
Intersection Summary												
HCM Average Control D			14.5		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.66			i a stallega ya spakasa ka kaka ka ka	aveganere er een i		delin ultimi ultribe commo			
Actuated Cycle Length (50.0			ost time			8.0			
Intersection Capacity Ut	tilization	1	117.0%		CU Lev	el of Se	rvice		Н			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2
Movement	WBT	NBTL
Lead/Lag	Lead	Lag
Lead-Lag Optimize		The part of Court of Table (420) in the
Recall Mode	Max	Max
Maximum Split (s)	20	30
Maximum Split (%)	40.0%	60.0%
Minimum Split (s)	20	30
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	0
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s)	0	0
Time To Reduce (s)	0	0
Walk Time (s)	5.5	14.5
Flash Dont Walk (s)	11	12
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes
Start Time (s)	15.5	35.5
End Time (s)	35.5	15.5
Yield/Force Off (s)	32	12
Yield/Force Off 170(s)	21	0
Local Start Time (s)	33.5	3.5
Local Yield (s)	0	30
Local Yield 170(s)	39	18

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 32 (64%), Referenced to phase 1:WBT, Start of Yellow

Splits and Phases: 13: I St & 5th St

4	← .ø1	↑ ø2
2	20 s	30 s

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	≯	-	*	*	-	*	4	†	-	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					444		ሻ	444				4000
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.91		0.86	0.86				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4866		1522	4806				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)		7767-7250-7450-045-045-050-		7 0.00 C Margan C 1550 C 0.00 C 1551	4866	***************************************	1522	4806	on Product Williams		7 0 7 11 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Volume (vph)	0	0	0	0	810	210	400	1420	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	810	210	400	1420	0	0	0	C
RTOR Reduction (vph)	0	0	0	0	6	0	49	0	0	0	0	C
Lane Group Flow (vph)	0	0	0	0	1014	0	351	1420	0	0	0	0
Confl. Peds. (#/hr)						60						
Turn Type							Split					
Protected Phases					4		2	2				
Permitted Phases												
Actuated Green, G (s)					21.5		21.5	21.5				
Effective Green, g (s)					21.0		21.0	21.0				
Actuated g/C Ratio					0.42		0.42	0.42				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					2044		639	2019	kinggan Asteria Anton American American e Anton	erken oor vaan er oktom kenningloop on oor		
v/s Ratio Prot					c0.21		0.23	c0.30				
v/s Ratio Perm												
v/c Ratio					0.50		0.55	0.70				
Uniform Delay, d1					10.6		10.9	11.9				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.9		3.4	2.1				
Delay (s)					11.5		14.3	14.0				
Level of Service					В.		В.	В.				
Approach Delay (s)		0.0			11.5		_	14.1			0.0	
Approach LOS		A			В			В			A	
Intersection Summary												
HCM Average Control D			13.2	ŀ	HCM Le	vel of Se	ervice		В			
HCM Volume to Capaci			0.60									
Actuated Cycle Length ((s)		50.0			ost time			8.0			
Intersection Capacity Ut	ilization		55.4%	1	CU Lev	el of Sei	rvice		В			
Analysis Period (min) c Critical Lane Group			15									



Phase Number	2	4
Movement	NBTL	WBT
Lead/Lag		
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	25	25
Maximum Split (%)	50.0%	50.0%
Minimum Split (s)	21.5	21.5
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	0
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s)		0
Time To Reduce (s)	0	0
Walk Time (s)	10	10
Flash Dont Walk (s)	8	8
Dual Entry	Yes	
Inhibit Max	Yes	
Start Time (s)	48.5	23.5
End Time (s)	23.5	
Yield/Force Off (s)	20	
Yield/Force Off 170(s)	12	
Local Start Time (s)	3.5	28.5
Local Yield (s)	25	0
Local Yield 170(s)	17	42
Intersection Summary		
Cycle Length		
O		

Control Type Natural Cycle

Pretimed

45

Offset: 45 (90%), Referenced to phase 4:WBT, Start of Yellow

Splits and Phases: 14: L St & 16th St

↑ ø2	4 ∅4
25 s	25 s

	۶	-	*	•	4-	*	•	†	~	1	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		tttp									ተተቡ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.99									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.96 1.00									1.00	
Fit Protected		6095									0.99 5014	
Satd. Flow (prot) Flt Permitted		1.00									0.99	
Satd. Flow (perm)		6095									5014	
Volume (vph)	0	1120	380	0	0	0	0	0	0	240	600	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1120	380	0	0	0	0	0	0	240	600	0
RTOR Reduction (vph)	0	35	0	0	0	0	0	0	0	0	48	0
Lane Group Flow (vph)	0	1465	0	0	0	0	0	Ō	0	0	792	Ō
Confl. Peds. (#/hr)	THE SECTION	The Property of the Property o	60			Special Control of the	. 1			60		1.4 %
Parking (#/hr)										0		0
Turn Type										Split		Andrew Commission
Protected Phases		2								1	1	
Permitted Phases												
Actuated Green, G (s)		27.5									15.5	
Effective Green, g (s)		27.0									15.0	
Actuated g/C Ratio		0.54									0.30	
Clearance Time (s)		3.5									3.5	ene veneriorio
Lane Grp Cap (vph)		3291									1504	
v/s Ratio Prot		c0.24									c0.16	
v/s Ratio Perm		0.45									0.52	
v/c Ratio		0.45 7.0									0.53 14.5	
Uniform Delay, d1 Progression Factor		1.00									1.17	
Incremental Delay, d2		0.4									0.1	
Delay (s)		7.4									17.2	
Level of Service		Α									В	
Approach Delay (s)		7.4			0.0			0.0			17.2	
Approach LOS		Α			Α			Α			В	
Intersection Summary												
HCM Average Control D			10.9		HCM Le	vel of S	ervice		В			
HCM Volume to Capacit	•		0.47						2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -			
Actuated Cycle Length (50.0			lost time			8.0			
Intersection Capacity Ut	ilization		46.9%	an sa sa	ICU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												

4	
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Phase Number	1	2	
Movement	SBTL	EBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	19	31	
Maximum Split (%)	38.0%	62.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	22.5	41.5	
End Time (s)	41.5	22.5	
Yield/Force Off (s)	38	19	
Yield/Force Off 170(s)	30	11	
Local Start Time (s)	3.5	22.5	
Local Yield (s)	19	0	
Local Yield 170(s)	11	42	
	ESECTIONS FOR CLARITORS	9773848 8 9758453753753753	

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 19 (38%), Referenced to phase 2:EBT, Start of Yellow

Splits and Phases: 1: Q St & 3rd St

ø1	→ ø2
19 s	31 s

3/1/2005 Fehr & Peers Associates, Inc.

	<i>></i>	-	*	•	4			†	1	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተቡ						† \$	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	4.0
Lane Util. Factor					0.91						0.91	0.91
Frpb, ped/bikes					1.00						0.97	0.93
Flpb, ped/bikes					1.00						1.00	1.00
Frt					1.00						0.93	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					4901						2910	1205
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					4901						2910	1205
Volume (vph)	0	0	0	170	2710	0	0	0	0	0	670	1080
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	170	2710	0	0	0	0	0	670	1080
RTOR Reduction (vph)	0	0	0	0	14	0	0	0	0	0	1	1
Lane Group Flow (vph)	0	0	0	0	2866	0	0	0	0	0	1209	539
Confl. Peds. (#/hr)				60								60
Parking (#/hr)				0	0						0	0
Turn Type				Split				<u> </u>				Perm
Protected Phases				· 2	2						- 1	
Permitted Phases												1
Actuated Green, G (s)					27.5						15.5	15.5
Effective Green, g (s)					27.0						15.0	15.0
Actuated g/C Ratio					0.54						0.30	0.30
Clearance Time (s)					3.5						3.5	3.5
Lane Grp Cap (vph)					2647						873	362
v/s Ratio Prot					c0.58						0.42	
v/s Ratio Perm												c0.45
v/c Ratio					1.08						1.43dr	1.49
Uniform Delay, d1					11.5						17.5	17.5
Progression Factor					1.00						1.00	1.00
Incremental Delay, d2					44.7						180.5	234.6
Delay (s)					56.2						198.0	252.1
Level of Service					E						F	F
Approach Delay (s)		0.0			56.2			0.0			214.7	
Approach LOS		Α			E			Α			F	
Intersection Summary												
HCM Average Control D HCM Volume to Capacit			116.1 1.23		HCM Le	vel of S	ervice		F			
Actuated Cycle Length (50.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity Uti		1	111.5%			el of Se			о.о Н			
Analysis Period (min)			15									
dr Defacto Right Lane	Reco	de with	1 thoug	h lane a	as a righ	nt lane.						

c Critical Lane Group



Phase Number	1	2	
Movement	SBT	WBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	19	31	
Maximum Split (%)	38.0%	62.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4 3	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes		
Start Time (s)	40.5	9.5	
End Time (s)	9.5	40.5	
Yield/Force Off (s)	6	37	
Yield/Force Off 170(s)	48		
Local Start Time (s)	3.5	22.5	
Local Yield (s)	19	0	
Local Yield 170(s)	11	42	
		MERCHE TENNESSES	

Cycle Length 50
Control Type Pretimed
Natural Cycle 110

Offset: 37 (74%), Referenced to phase 2:WBTL, Start of Yellow

Splits and Phases: 2: P St & 3rd St

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Movement	EBT	EBR	SBL	SBT	SEL	SER		
Lane Configurations	ĵ»			ተተቡ	ኻ፞፞ጞ			•
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0			4.0	4.0			
Lane Util. Factor	1.00			0.91	0.97			
Frpb, ped/bikes	0.98			1.00	1.00			
Flpb, ped/bikes	1.00			1.00	1.00			
Frt	0.98			1.00	0.91			
Flt Protected	1.00			0.99	0.98			
Satd. Flow (prot)	1780			5052	3234			
FIt Permitted	1.00			0.99	0.98			
Satd. Flow (perm)	1780			5052	3234			
Volume (vph)	90	20	190	1270	320	430		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00		
Adj. Flow (vph)	90	20	190	1270	320	430		
RTOR Reduction (vph)	12	0	0	28	0	0		
Lane Group Flow (vph)	98	0	0	1432	750	0		
Confl. Peds. (#/hr)		60	60					
Parking (#/hr)			0					
Turn Type			Split			terit i raliani eti iraini martini menenenenen eni eni eti in eni eni eti in eni eti in eni eti in eni eti in		
Protected Phases	6		4	4	5			
Permitted Phases								
Actuated Green, G (s)	12.5			32.5	14.5			
Effective Green, g (s)	12.0			32.0	14.0			
Actuated g/C Ratio	0.17			0.46	0.20			
Clearance Time (s)	3.5			3.5	3.5			
Lane Grp Cap (vph)	305			2309	647			
v/s Ratio Prot	c0.06			c0.28	c0.23			
v/s Ratio Perm	00.00			00.20	00.20			
v/c Ratio	0.32			0.62	1.34dr			
Uniform Delay, d1	25.4			14.4	28.0			
Progression Factor	1.00			1.36	1.00			
Incremental Delay, d2	2.8			0.5	88.1			
Delay (s)	28.2			20.0	116.1			
Level of Service	C			В.	F			
Approach Delay (s)	28.2			20.0	116.1			
Approach LOS	C			В.	F			
ACCURAGE SERVICE SERVICE AND ACCURATE A SERVICE SERVIC					•			
Intersection Summary	Nalas.		E4 A		LICIALI	ral of Camilan		
HCM Average Control I HCM Volume to Capaci			51.4		ncivi Le	vel of Service	D	
	•		0.69	e Gran e 1, d	Sum of I	oot time (a)	12.0	
Actuated Cycle Length Intersection Capacity U			70.0 71.5%			ost time (s)	12.0	
	แแนสแบท				ico Levi	el of Service	С	
Analysis Period (min)	Doo-	طم بدانداد	15	h lana	20 0 2 2 2	t lana		
dr Defacto Right Lane		ue with	ı moug	n iane a	as a rign	ı ıdrie.		
c Critical Lane Group								

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Phase Number	2	4	5	6	
Movement	Ped	SBTL	SEL	EBT	
Lead/Lag			Lead	Lag	
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	34	36	18	16	
Maximum Split (%)	48.6%	51.4%	25.7%	22.9%	
Minimum Split (s)	34	36	7.5	16	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	0	0	
Minimum Initial (s)	4	And the second second second		4	
Vehicle Extension (s)	3	3	3	3	
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s) 0	0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)	19.5	23.5		4.5	
Flash Dont Walk (s)	11	9		8	
Dual Entry	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	
Start Time (s)	12.5	46.5	12.5	30.5	
End Time (s)	46.5	12.5	30.5	46.5	
Yield/Force Off (s)	43	9	27	43	
Yield/Force Off 170(s)	32	0	27	35	
Local Start Time (s)	3.5	37.5	3.5	21.5	
Local Yield (s)	34	0	18	34	
Local Yield 170(s)	23	61	18	26	

Cycle Length 70
Control Type Pretimed
Natural Cycle 75

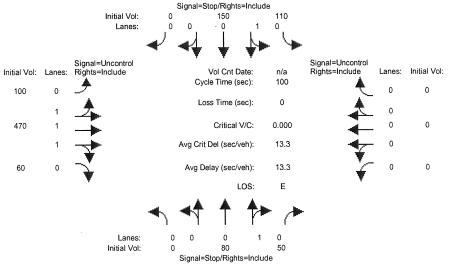
Offset: 9 (13%), Referenced to phase 4:SBTL, Start of Yellow

Splits and Phases: 3: N St & 3rd St

ÁÅ ø2		▶ ø4
<i>⊼</i> № _Ø 2 34 s		36 s
→ ø5	→ ø6	
→ ø5 18:s	16 s	

Level Of Service Computation Report 2000 HCM Unsignalized (Future Volume Alternative) 2025 PM

Intersection #4: N St./4th St.



Street Name: 4th St N St Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R	R
Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T -	R
Movement: L - T - R L - T - R L - T -	
Volume Module:	
Base Vol: 0 80 50 110 150 0 100 470 60 0 0	0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	.00
Initial Bse: 0 80 50 110 150 0 100 470 60 0 0	0
Added Vol: 0 0 0 0 0 0 0 0 0 0	0
PasserByVol: 0 0 0 0 0 0 0 0 0 0	0
Initial Fut: 0 80 50 110 150 0 100 470 60 0	0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	.00
PHF Volume: 0 80 50 110 150 0 100 470 60 0	0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0	0
Final Vol.: 0 80 50 110 150 0 100 470 60 0 0	0
Critical Gap Module:	
Critical Gp:xxxxx 6.5 6.2 7.1 6.5 xxxxx 4.1 xxxx xxxxx xxxxx xxxx xx	XXX
FollowUpTim:xxxxx 4.0 3.3 3.5 4.0 xxxxx 2.2 xxxx xxxxx xxxx xxxx xxxx x	
Capacity Module:	
Cnflict Vol: xxxx 715 187 412 745 xxxxx 15 xxxx xxxxx xxxx xxxx xx	XXX
Potent Cap.: xxxx 359 861 554 345 xxxxx 1616 xxxx xxxxx xxxx xxxx xx	
Move Cap.: xxxx 330 861 398 317 xxxxx 1596 xxxx xxxxx xxxx xxx xx	XXX
Volume/Cap: xxxx 0.24 0.06 0.28 0.47 xxxx 0.06 xxxx xxxx xxxx x	
Level Of Service Module:	
Queue: xxxxx xxxx xxxxx xxxx xxxx xxxx 0.2 xxxx xxxx	
Stopped Del:xxxxx xxxx xxxxx xxxx xxxx xxxx 7.4 xxxx xxxx	XXX *
LOS DY MOVE.	
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR -	
Shared Cap.: xxxx xxxx 432 347 xxxx xxxxx xxxx xxxx xxxx xxxx xxxx	
SharedQueue:xxxxx xxxx 1.2 5.8 xxxx xxxxx 0.2 xxxx xxxxx xxxx xxxx xxx	
Shrd StpDel:xxxxx xxxx 16.9 40.7 xxxx xxxxx 7.4 xxxx xxxxx xxxx xxxx x	XXX *
Shared LOS: " " C L " " A	*
ApproachDel: 16.9 40.7 xxxxxx xxxxxx	
ApproachLOS: C E * *	

	ⅉ		*	1	4	1	4	†	1	6	\	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተቡ						ተተ _ጉ			***************************************	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.97				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5049						4895				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5049						4895				
Volume (vph)	90	540	0	0	0	0	0	1090	250	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	90	540	0	0	0	0	0	1090	250	0	0	0
RTOR Reduction (vph)	0	22	0	0	0	0	0	53	0	0	0	0
Lane Group Flow (vph)	Ō	608	0	0	0	0	Ō	1287	Ō	Ō	Ö	Ö
Confl. Peds. (#/hr)	60		7.15			(1987년 1일 19 년 명)	m spragati m ty	- 127 (BASE)	60			The Company
Parking (#/hr)	0		0						0			
Turn Type	Split			The contract of the collection	William Control of the Control of th	- Printer of the second se	*****	***************************************				
Protected Phases	1	1						2				
Permitted Phases		i i i i i i i i i i i i i i i i i i i										
Actuated Green, G (s)		31.5						31.5				
Effective Green, g (s)		31.0						31.0				
Actuated g/C Ratio		0.44						0.44				
Clearance Time (s)		3.5						3.5				
Lane Grp Cap (vph)		2236		9 45 L 545		tet de set se c		2168		ACCEPTAGE		
v/s Ratio Prot		c0.12						c0.26				
v/s Ratio Perm								00.20				
v/c Ratio		0.27						0.59				
Uniform Delay, d1		12.4						14.7				
Progression Factor		1.42						1.00				
Incremental Delay, d2		0.2						1.2				
Delay (s)		17.8						15.9				
Level of Service		В						В				
Approach Delay (s)		17.8			0.0			15.9			0.0	
Approach LOS		В			A			В			A	
Intersection Summary												
HCM Average Control D	Delav		16.5		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.43									
Actuated Cycle Length			70.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity Ut)	46.4%			el of Se			Α			
Analysis Period (min)			15						And Sign			
c Critical Lane Group												



Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	35	35	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	34.5	34.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	22	22	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	65.5	30.5	
End Time (s)	30.5	65.5	
Yield/Force Off (s)	27	62	
Yield/Force Off 170(s)	18	53	
Local Start Time (s)	38.5	3.5	
Local Yield (s)	0	35	
Local Yield 170(s)	61	26	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 27 (39%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 5: N St & 5th St

♣ ø1	↑ ø2
35 s	35 s

	ⅉ	-	*	•	4	4	1	†	1	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተጉ		ሻ	ተተ						नाा	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.91		1.00	0.95						0.86	
Frpb, ped/bikes		1.00		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.99		1.00	1.00						0.93	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		5022		1770	3539						5934	
Flt Permitted		1.00		0.95	1.00						1.00	
Satd. Flow (perm)		5022		1770	3539						5934	
Volume (vph)	0	730	40	330	700	0	0	0	0	90	1100	1100
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	730	40	330	700	0	0	0	0	90	1100	1100
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	111	0
Lane Group Flow (vph)	0	761	0	330	700	0	0	0	0	0	2179	0
Confl. Peds. (#/hr)			60									
Parking (#/hr)										0		
Turn Type				Prot						Split		
Protected Phases		6		5	2					4	4	
Permitted Phases												
Actuated Green, G (s)		16.0		16.5	36.0						25.5	
Effective Green, g (s)		15.5		16.0	35.5						26.5	
Actuated g/C Ratio		0.22		0.23	0.51						0.38	
Clearance Time (s)		3.5		3.5	3.5						5.0	
Lane Grp Cap (vph)		1112		405	1795						2246	
v/s Ratio Prot		c0.15		c0.19	0.20						c0.37	
v/s Ratio Perm												
v/c Ratio		0.68		0.81	0.39						1.53dr	
Uniform Delay, d1		25.0		25.6	10.6						21.4	
Progression Factor		1.00		0.52	0.88						0.78	
Incremental Delay, d2		3.4		15.4	0.6						6.4	
Delay (s)		28.4		28.8	9.9						23.2	
Level of Service		С		С	Α						С	
Approach Delay (s)		28.4			16.0			0.0			23.2	
Approach LOS		С			В			Α			С	
Intersection Summary												
HCM Average Control D			22.4		HCM Le	vel of S	ervice		С			
HCM Volume to Capaci			0.85									
Actuated Cycle Length (70.0		Sum of				12.0			
Intersection Capacity Ut	tilizatior	1	79.3%		ICU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
dr Defacto Right Lane	. Reco	de with	1 thoug	in lane a	as a righ	nt lane.						

3/1/2005 Fehr & Peers Associates, Inc.

c Critical Lane Group

Synchro 6 Report Page 9

	4	1	-	-	
Phase Number	2	4	5	6	
Movement	WBT	SBTL	WBL	EBT	
Lead/Lag			Lead	Lag	
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	39.5	30.5	20	19.5	
Maximum Split (%)	56.4%	43.6%	28.6%	27.9%	
Minimum Split (s)	39.5	30.5	7.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	
All-Red Time (s)	0	1.5	0	0	
Minimum Initial (s)	4	4	4	4	
Vehicle Extension (s)	3		3	3	
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s		0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)	26			6	
Flash Dont Walk (s)	10	5		10	
Dual Entry	Yes	Yes	Yes	Yes	
Inhibit Max	Yes			Yes	
Start Time (s)	18.5			38.5	
End Time (s)	58	18.5	1 7 7 7 7		
Yield/Force Off (s)	54.5		35		
Yield/Force Off 170(s)				44.5	
Local Start Time (s)	53.5				
Local Yield (s)	19.5				
Local Yield 170(s)	9.5	43.5	0	9.5	

Cycle Length 70
Control Type Pretimed
Natural Cycle 75

Offset: 35 (50%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow

Splits and Phases: 6: Capitol Mall & 3rd St

← ø2		№ ø4
39.5 s		30.5 s
√ ø5	→ ø6	
20 s	19.5 ≲	

	۶	-	*	1	-	1	1	†	<i>></i>	1	+	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		44	7		414			4			4	-
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.0			4.0	
Lane Util. Factor		0.95	1.00		0.91			1.00			1.00	
Frpb, ped/bikes		1.00	0.87		0.99			0.99			0.99	
Flpb, ped/bikes		1.00	1.00		1.00			0.98			0.99	
Frt		1.00	0.85		0.99			0.98			0.99	
Flt Protected		1.00	1.00		1.00			0.99			0.99	
Satd. Flow (prot)		3536	1380		5024			1577			1602	
Flt Permitted		0.94	1.00		0.93			0.87			0.89	
Satd. Flow (perm)		3333	1380		4688			1386			1436	
Volume (vph)	10	770	40	10	940	40	70	130	30	50	140	20
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	10	770	40	10	940	40	70	130	30	50	140	20
RTOR Reduction (vph)	0	0	19	0	7	0	0	8	0	0	5	0
Lane Group Flow (vph)	0	780	21	0	984	0	0	222	0	0	205	0
Confl. Peds. (#/hr)	60		60	60		60	60		60	60		60
Parking (#/hr)							0	0	0	0	0	0
Turn Type	Perm	***************************************	Perm	Perm			Perm			Perm	<u></u>	
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)		38.0	38.0		38.0			23.5			23.5	
Effective Green, g (s)		37.5	37.5		37.5			24.5			24.5	
Actuated g/C Ratio		0.54	0.54		0.54			0.35			0.35	
Clearance Time (s)		3.5	3.5		3.5			5.0			5.0	
Lane Grp Cap (vph)		1786	739	ant Billian.	2511			485			503	
v/s Ratio Prot			:-		**			() () () () () ()				
v/s Ratio Perm		c0.23	0.02		0.21			c0.16			0.14	
v/c Ratio		0.44	0.03		0.39			0.46			0.41	
Uniform Delay, d1		9.8	7.7		9.5			17.6			17.2	
Progression Factor		1.21	1.69		0.20			0.79			1.00	
Incremental Delay, d2		0.5	0.0		0.4			2.9			1.9	
Delay (s)		12.4	13.0		2.3			16.8			19.1	
Level of Service		В	В		Α			В			В	
Approach Delay (s)		12.5			2.3			16.8			19.1	
Approach LOS		В			Α			В			В	
Intersection Summary												
HCM Average Control D			9.1		HCM Le	vel of S	ervice		Α			
HCM Volume to Capacit			0.45			and the control of the	a su					
Actuated Cycle Length (70.0			lost time			8.0			
Intersection Capacity Ut	ilization		57.8%		CU Lev	el of Se	rvice		В			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	2	4	
Movement	EBWB	NBSB	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	41.5	28.5	
Maximum Split (%)		40.7%	
Minimum Split (s)	22.5	20	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	10	10	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	59	30.5	
End Time (s)	30.5	59	
Yield/Force Off (s)	27	54	
Yield/Force Off 170(s)		44	
Local Start Time (s)	32		
Local Yield (s)	0	27	
Local Yield 170(s)	60	17	
Intersection Summary			

Cycle Length 70 Control Type Pretimed Natural Cycle 45
Offset: 27 (39%), Referenced to phase 2:EBWB, Start of Yellow

Splits and Phases: 7: Capitol Mall & 4th St

ø2	1 04
41.5 s	28.5 s

	۶	-	*	•	4		1	†	1	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	十 个			ተተ _ጉ		14.54	ተተ _ጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	0.97	0.95			0.91		0.97	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			4971		3433	4943				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			4971		3433	4943				
Volume (vph)	410	440	0	0	660	70	330	840	100	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	410	440	0	0	660	70	330	840	100	0	0	0
RTOR Reduction (vph)	0	0	0	0	19	0	0	21	0	0	0	0
Lane Group Flow (vph)	410	440	0	0	711	0	330	919	0	0	0	0
Confl. Peds. (#/hr)						60			60			
Turn Type	Prot						Split					
Protected Phases	1	6			2		. 8	8				
Permitted Phases												
Actuated Green, G (s)	14.5	36.5			18.5		25.0	25.0				
Effective Green, g (s)	14.0	36.0			18.0		26.0	26.0				
Actuated g/C Ratio	0.20	0.51			0.26		0.37	0.37				
Clearance Time (s)	3.5	3.5			3.5		5.0	5.0				
Lane Grp Cap (vph)	687	1820			1278	e e en	1275	1836				and the second s
v/s Ratio Prot	c0.12	0.12			c0.14		0.10	c0.19				
v/s Ratio Perm	.: ********	10 × 20 × 2										
v/c Ratio	0.60	0.24			0.56		0.26	0.50				
Uniform Delay, d1	25.4	9.4			22.5		15.3	17.0				
Progression Factor	0.77	0.21			1.00		0.46	0.41				
Incremental Delay, d2	3.5	0.3			1.8		0.4	0.8				
Delay (s)	23.2	2.3			24.3		7.4	7.8				
Level of Service	C	A			С		Α	Α				
Approach Delay (s)		12.4			24.3			7.7			0.0	
Approach LOS		В			С			Α			Α	
Intersection Summary												
HCM Average Control [Delay		13.4		HCM Le	evel of S	ervice		В			
HCM Volume to Capac			0.54									
Actuated Cycle Length			70.0		Sum of	lost time	e (s)		12.0			
Intersection Capacity U			55.4%			el of Se			В			
Analysis Period (min)			15									
c Critical Lane Group												

Phase Number	1	2	6	. 8	
Movement	EBL	WBT	EBT	NBTL	
Lead/Lag	Lag	Lead			
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	18	22	40	30	
Maximum Split (%)	25.7%	31.4%	57.1%	42.9%	
Minimum Split (s)	7.5	20.5	20.5	17	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	0	1.5	
Minimum Initial (s)	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s)) 0	0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)		7	7	7	
Flash Dont Walk (s)		10	10	5	
Dual Entry	No	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	
Start Time (s)	20.5	68.5	68.5	38.5	
End Time (s)	38.5	20.5	38.5		
Yield/Force Off (s)	35	17	35	63.5	
Yield/Force Off 170(s)	35	7	25	58.5	
Local Start Time (s)	55.5	33.5	33.5	3.5	
Local Yield (s)	0	52	0	28.5	
Local Yield 170(s)	0	42	60	23.5	

Cycle Length Control Type Pretimed Natural Cycle

Offset: 35 (50%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow

Splits and Phases: 8: Capitol Mall & 5th St

← ø2	→ ø1	♦ 1 ∞8
22 s	18 s	30 s
→ ø6		
40 s		

70

50

	<i>></i>	-	*	•	4	1	4	†	<i>p</i>	1	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				7	414	7					ተተቡ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0					4.0	
Lane Util. Factor				0.91	0.91	1.00					0.91	
Frt				1.00	1.00	0.85					0.99	
Flt Protected				0.95	0.99	1.00					1.00	
Satd. Flow (prot)				1610	3361	1583					5037	
Flt Permitted				0.95	0.99	1.00					1.00	
Satd. Flow (perm)				1610	3361	1583					5037	
Volume (vph)	0	0	0	1100	1410	340	0	0	0	0	1180	80
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1100	1410	340	0	0	0	0	1180	80
RTOR Reduction (vph)	0	0	0	0	0	117	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	808	1702	223	0	0	0	0	1249	0
Turn Type			0	custom	(custom						
Protected Phases											4	
Permitted Phases				2	2	2						
Actuated Green, G (s)				46.5	46.5	46.5					16.5	
Effective Green, g (s)				46.0	46.0	46.0					16.0	
Actuated g/C Ratio				0.66	0.66	0.66					0.23	
Clearance Time (s)				3.5	3.5	3.5					3.5	
Lane Grp Cap (vph)				1058	2209	1040					1151	
v/s Ratio Prot											c0.25	
v/s Ratio Perm				0.50	c0.51	0.14						
v/c Ratio				0.76	0.77	0.21					1.09	
Uniform Delay, d1				8.3	8.3	4.8					27.0	
Progression Factor				0.66	0.64	0.46					1.00	
Incremental Delay, d2				4.5	2.3	0.4					52.8	
Delay (s)				10.0	7.6	2.6					79.8	
Level of Service				Α	A	Α					Е	
Approach Delay (s)		0.0			7.7			0.0			79.8	
Approach LOS		Α			Α			Α			Ε	
Intersection Summary												
HCM Average Control D	Delay		29.8		HCM Le	vel of S	ervice		С			
HCM Volume to Capaci	ty ratio		0.85									
Actuated Cycle Length (70.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity Ut		1	78.5%	I	ICU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	2	4	
Movement	WBTL	SBT	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	50	20	
Maximum Split (%)	71.4%	28.6%	
Minimum Split (s)	7.5	20	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)		8.5	
Flash Dont Walk (s)		8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	66.5	46.5	
End Time (s)	46.5	66.5	
Yield/Force Off (s)	43	63	
Yield/Force Off 170(s)	43	55	
Local Start Time (s)	3.5	53.5	
Local Yield (s)	50	0	
Local Yield 170(s)	50	62	

Cycle Length 70
Control Type Pretimed
Natural Cycle 60

Offset: 63 (90%), Referenced to phase 4:SBT, Start of Yellow

Splits and Phases: 9: L St & 3rd St

ø2	↓ ø4
50 s	20 s

	<i>></i>		*	1	4	1	4	†	1	1	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					tttp		7	ተተተ				77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		1.00	0.91				0.88
Frpb, ped/bikes					1.00		1.00	1.00				0.93
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6287		1770	5085				2585
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6287		1770	5085				2585
Volume (vph)	0	0	0	0	2020	220	440	880	0	0	0	240
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	2020	220	440	880	0	0	0	240
RTOR Reduction (vph)	0	0	0	0	8	0	6	0	0	0	0	8
Lane Group Flow (vph)	0	0	0	0	2232	0	434	880	0	0	0	232
Confl. Peds. (#/hr)						60	60					60
Turn Type							Split				С	ustom
Protected Phases					2		1	1				
Permitted Phases												1
Actuated Green, G (s)					40.0		20.5	20.5				20.5
Effective Green, g (s)					41.0		21.0	21.0				21.0
Actuated g/C Ratio					0.59		0.30	0.30				0.30
Clearance Time (s)			say al		5.0		4.5	4.5				4.5
Lane Grp Cap (vph)					3682		531	1526				776
v/s Ratio Prot					c0.35		c0.25	0.17				
v/s Ratio Perm												0.09
v/c Ratio					0.61		0.82	0.58				0.30
Uniform Delay, d1					9.3		22.7	20.7				18.8
Progression Factor					1.00		0.77	0.78				1.00
Incremental Delay, d2					0.7		11.3	1.4				1.0
Delay (s)					10.1		28.8	17.6				19.8
Level of Service					В		С	В				В
Approach Delay (s)		0.0			10.1			21.3			19.8	
Approach LOS		Α			В			С			В	
Intersection Summary												
HCM Average Control D			14.6	ŀ	HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.68									
Actuated Cycle Length (70.0			lost time			8.0			
Intersection Capacity Ut	tilization	ı	84.3%		CU Lev	el of Se	rvice		E			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	NBTL	WBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	45	
Maximum Split (%)	35.7%	64.3%	
Minimum Split (s)	25	45	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	1	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	11.5	31	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	37	62	
End Time (s)	62		
Yield/Force Off (s)	57.5	32	
Yield/Force Off 170(s)	48.5		
Local Start Time (s)	5	30	
Local Yield (s)	25.5		
Local Yield 170(s)	16.5	61	
2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	contactorios (Albert	entre de la companie	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 32 (46%), Referenced to phase 2:WBT, Start of Yellow

Splits and Phases: 10: L St & 5th St

♣ ↑ _{Ø1}	← ø2
25 s	45 s

	۶	-	*	†	*	-	↓	•	-	>	
Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	SEL2	SEL	SER	
Lane Configurations		414		1}→	7"	肾	414		311W		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0		4.0		
Lane Util. Factor		0.91		0.95	0.95	0.91	0.91		0.91		
Frpb, ped/bikes		0.99		1.00	1.00	1.00	1.00		0.97		
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00		1.00		
Frt		0.98		0.95	0.85	1.00	1.00		0.96		
Flt Protected		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (prot)		4920		1678	1504	1610	3365		6089		
FIt Permitted		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (perm)		4920		1678	1504	1610	3365		6089		
Volume (vph)	70	790	120	120	220	380	520	80	1610	620	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	70	790	120	120	220	380	520	80	1610	620	
RTOR Reduction (vph)	0	18	0	13	13	0	0	0	0	0	
Lane Group Flow (vph)	0	962	0	170	144	290	610	0	2310	0	
Confl. Peds. (#/hr)			60							60	
Turn Type	Split				Perm	Split		Split			
Protected Phases	3	3		5		1	1	2	2		
Permitted Phases					5						
Actuated Green, G (s)		23.0		12.0	12.0	17.5	17.5		32.0		
Effective Green, g (s)		23.0		12.0	12.0	17.0	17.0		32.0		
Actuated g/C Ratio		0.23		0.12	0.12	0.17	0.17		0.32		
Clearance Time (s)		4.0		4.0	4.0	3.5	3.5		4.0		
Lane Grp Cap (vph)		1132		201	180	274	572		1948		
v/s Ratio Prot		c0.20		c0.10		0.18	c0.18		c0.38		
v/s Ratio Perm					0.10						
v/c Ratio		0.85		0.84	0.80	1.06	1.07		1.29dr		
Uniform Delay, d1		36.8		43.1	42.8	41.5	41.5		34.0		
Progression Factor		1.00		1.00	1.00	0.94	0.95		1.00		
Incremental Delay, d2		8.1		33.1	29.9	70.1	56.2		89.2		
Delay (s)		44.9		76.2	72.7	109.3	95.5		123.2		
Level of Service		D		Ε	E	F	F		F		
Approach Delay (s)		44.9		74.6			99.9		123.2		
Approach LOS		D		E			F		F		
Intersection Summary											
HCM Average Control D	Delay		98.0		HCM Le	vel of S	ervice		F		
HCM Volume to Capaci			1.02								
Actuated Cycle Length	(s)		100.0	,	Sum of I	ost time	e (s)		16.0		
Intersection Capacity U	tilizatior	ria de la c	96.0%	y dagl	ICU Lev	el of Se	rvice		F		
Analysis Period (min)			15								

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

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Phase Number	1	2	3	5	6	
Movement	SBTL	SEL	EBTL	NBT	Ped	
Lead/Lag	Lead	Lag				
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max	Max	
Maximum Split (s)	21	36	27	16	73	
Maximum Split (%)	21.0%	36.0%	27.0%	16.0%	73.0%	
Minimum Split (s)	7.5	36	27	8	73	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0.5	0.5	0.5	0.5	
Minimum Initial (s)	4	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	3	
Minimum Gap (s)	3	3	3	3	3	
Time Before Reduce (s	s) 0	0	0	0	0	
Time To Reduce (s)	0	0	0	0	0	
Walk Time (s)		21	12		58	
Flash Dont Walk (s)		11	11		11	
Dual Entry	Yes	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes			Yes	
Start Time (s)	85	6	58	42	85	
End Time (s)	6	42	85	58	58	
Yield/Force Off (s)	2.5	38	81	54	54	
Yield/Force Off 170(s)	2.5	27	70	54	43	
Local Start Time (s)	47	68	20	4	47	
Local Yield (s)	64.5	0	43	16	16	
Local Yield 170(s)	64.5	89	32	16	5	

Cycle Length 100
Control Type Pretimed
Natural Cycle 120

Offset: 38 (38%), Referenced to phase 2:SEL, Start of Yellow

Splits and Phases: 11: J St & 3rd St

№ ø1	★ ø2	1 ø5	♣ ø3
21 s	36 s	16s	27 s
∮k ø6			
73 s			

	١	-	*	1	4	1	1	†	*	1	+	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ħ	4111	7					ተ ጮ	ŕ			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.81	1.00					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.95					1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.96	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	6035	1498					3264	1441			
FIt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	6035	1498					3264	1441			
Volume (vph)	550	2330	240	0	0	0	0	580	520	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	550	2330	240	0	0	0	0	580	520	0	0	0
RTOR Reduction (vph)	103	0	139	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	447	2330	101	0	0	0	0	772	328	0	0	0
Confl. Peds. (#/hr)	60		60									
Parking (#/hr)	0											
Turn Type	Split		Perm			····			Perm		i que income de la come	
Protected Phases	1	- 1 - 1 -						2				
Permitted Phases			1						2			
Actuated Green, G (s)	21.0	21.0	21.0					21.0	21.0			
Effective Green, g (s)	21.0	21.0	21.0					21.0	21.0			
Actuated g/C Ratio	0.42	0.42	0.42					0.42	0.42			
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Grp Cap (vph)	542	2535	629					1371	605			
v/s Ratio Prot	0.35	c0.39	020					c0.24				
v/s Ratio Perm			0.07						0.23			
v/c Ratio	0.82	0.92	0.16					0.56	0.54			
Uniform Delay, d1	12.9	13.7	9.0					11.0	10.9			
Progression Factor	0.77	0.82	0.60					1.00	1.00			
Incremental Delay, d2	1.4	0.7	0.0					1.7	3.5			
Delay (s)	11.3	11.9	5.5					12.7	14.4			
Level of Service	В	В	Α					В	В			
Approach Delay (s)	a de Ragetta e	11.3			0.0			13.2			0.0	
Approach LOS		В			Α			В			Α	
Intersection Summary												1.04
HCM Average Control D	Delay		11.8	ŀ	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.74									
Actuated Cycle Length			50.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity Ut		1	85.8%			el of Se			Ε			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	25	25	•
Yellow Time (s)	4	4	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	12	16	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	28	3	
End Time (s)	3	28	
Yield/Force Off (s)	49	24	
Yield/Force Off 170(s)	37	8	
Local Start Time (s)	29	4	
Local Yield (s)	0	25	
Local Yield 170(s)	38	9	

Cycle Length 50
Control Type Pretimed
Natural Cycle 60

Offset: 49 (98%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 12: J St & 5th St

♣ ø1	₽ ¤2
25 s	25 s

	≯	-	*	•	4	1	1	†	<i>></i>	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					illi		ايواي	ተተ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		0.97	0.95				
Frpb, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6224		3433	3362				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6224		3433	3362				
Volume (vph)	0	0	0	0	2940	60	570	560	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	2940	60	570	560	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	0	7	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2997	0	563	560	0	0	0	0
	U	0	U	U	2991	60	505	300	U	U	U	U
Confl. Peds. (#/hr)						00		^				
Parking (#/hr)	I al the				0		0 14	0				
Turn Type							Split					
Protected Phases					1		2	2				
Permitted Phases								ر سرار بشاورات				
Actuated Green, G (s)					75.5		17.5	17.5				
Effective Green, g (s)					75.0		17.0	17.0				
Actuated g/C Ratio					0.75		0.17	0.17				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					4668		584	572				
v/s Ratio Prot					c0.48		0.16	c0.17				
v/s Ratio Perm												
v/c Ratio					0.64		0.96	0.98				
Uniform Delay, d1					6.0		41.2	41.3				
Progression Factor					1.00		1.04	1.04				
Incremental Delay, d2					0.7		23.3	26.7				
Delay (s)					6.7		66.1	69.6				
Level of Service					Α		E	E				
Approach Delay (s)		0.0			6.7			67.9			0.0	
Approach LOS		Α			Α			, E			A	
Intersection Summary												
HCM Average Control I HCM Volume to Capac			23.4 0.70		HCM Le	vel of S	ervice		С			
Actuated Cycle Length			100.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity U		า 1	129.5%			el of Se			Н			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement V	VBT	NBTL	
Lead/Lag L	.ead	Lag	
Lead-Lag Optimize			
그 사람들이 살아가 하면 가게 되었다면 하는 것이 없는 것이 없었다.	Max	Max	
Maximum Split (s)	79	21	
		21.0%	
Minimum Split (s)	79	21	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s)	0	0	
Time To Reduce (s)	0	0	
(-)	64.5	5.5	
Flash Dont Walk (s)	11	12	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
	44.5	23.5	
	23.5	44.5	
Yield/Force Off (s)	20	41	
Yield/Force Off 170(s)	9	29	
	24.5		
Local Yield (s)	0	21	
Local Yield 170(s)	89	9	

Cycle Length 100
Control Type Pretimed
Natural Cycle 100

Offset: 20 (20%), Referenced to phase 1:WBT, Start of Yellow

Splits and Phases: 13: I St & 5th St

4 — ø1	★ ø2
79 s	21 s

	۶	-	*	•	4	4	1	†	/	-	+	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተኩ		T.	ተተጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.91		0.86	0.86				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4858		1522	4806				
FIt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4858		1522	4806				
Volume (vph)	0	0	0	0	880	240	330	1730	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	880	240	330	1730	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	38	0	0	0	0	0
Lane Group Flow (vph)	ő	Ö	Ö	0	1118	Ö	292	1730	0	0	Ō	Ō
Confl. Peds. (#/hr)	U,					60						
Turn Type				156 775			Split					
Protected Phases					4		2	2				
Permitted Phases					News .							
Actuated Green, G (s)					21.5		21.5	21.5				
Effective Green, g (s)					21.0		21.0	21.0				
Actuated g/C Ratio					0.42		0.42	0.42				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)		N. (1704 - 444 -		Terminal, N _{ee} e, e.e.	2040		639	2019				
v/s Ratio Prot					c0.23		0.19	c0.36				
					00.23		0.19	60.50				
v/s Ratio Perm					0.55		0.46	0.86				
v/c Ratio								13.1				
Uniform Delay, d1					10.9		10.4					
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					1.1		2.3	5.0				
Delay (s)					12.0		12.7	18.1				
Level of Service		0.0			B		В	B			0.0	
Approach Delay (s)		0.0			12.0			17.2			0.0	
Approach LOS		Α			В			В			Α	
Intersection Summary												
HCM Average Control [15.4	l	HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.70		_		14 y 14 y					
Actuated Cycle Length	` '		50.0			lost time			8.0			
Intersection Capacity U	tilizatior)	63.4%		ICU Lev	el of Se	rvice		В			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	2	4	
Movement	NBTL	WBT	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%		
Minimum Split (s)	21.5	21.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	10	10	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	48.5	23.5	
End Time (s)	23.5	48.5	
Yield/Force Off (s)	20	45	
Yield/Force Off 170(s)	12	37	
Local Start Time (s)	3.5	28.5	
Local Yield (s)	25	0	
Local Yield 170(s)	17	42	

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 45 (90%), Referenced to phase 4:WBT, Start of Yellow

Splits and Phases: 14: L St & 16th St

♦ _{ø2}	←
25 s	25 s

	<u></u>	-	*	1	4		1	†	/	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		††† }									ተተቡ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.98									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.95									1.00	
FIt Protected		1.00									0.98	
Satd. Flow (prot)		5973									4984	
FIt Permitted		1.00									0.98	
Satd. Flow (perm)		5973	****								4984	
Volume (vph)	0	2410	1050	-0	0	0	0	0	0	234	340	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2410	1050	0	0	0	0	0	0	234	340	0
RTOR Reduction (vph)	0	37	0	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	3423	0	0	0	0	0	0	0	0	566	0
Confl. Peds. (#/hr)			60							60		
Parking (#/hr)										. 0	1.5	0
Turn Type				*						Split		
Protected Phases		2								1	1	
Permitted Phases												
Actuated Green, G (s)		71.5									21.5	
Effective Green, g (s)		71.0									21.0	
Actuated g/C Ratio		0.71									0.21	
Clearance Time (s)		3.5									3.5	
Lane Grp Cap (vph)		4241									1047	
v/s Ratio Prot		c0.57									c0.11	
v/s Ratio Perm												
v/c Ratio		0.96dr									0.54	
Uniform Delay, d1		9.8									35.2	
Progression Factor		1.00									0.82	
Incremental Delay, d2		1.7									1.8	
Delay (s)		11.6									30.7	
Level of Service		В									С	
Approach Delay (s)		11.6			0.0			0.0			30.7	
Approach LOS		В			A			A			С	
Intersection Summary												
HCM Average Control D			14.3		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci	-		0.75									
Actuated Cycle Length (100.0			lost time	424 (444 (444 (444 (444 (444 (444 (444		8.0			
Intersection Capacity Ut	tilizatior	1	73.5%		ICU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
dr Defacto Right Lane	. Reco	de with	1 thoug	h lane	as a rigl	nt lane.						
c Critical Lane Group												

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Phase Number	1	2	
Movement	SBTL	EBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	75	
Maximum Split (%)	25.0%	75.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	90.5	15.5	
End Time (s)	15.5	90.5	
Yield/Force Off (s)	12	87	
Yield/Force Off 170(s)	4	79	
Local Start Time (s)	3.5	28.5	
Local Yield (s)	25	0	
Local Yield 170(s)	17	92	

Cycle Length 100
Control Type Pretimed
Natural Cycle 60

Offset: 87 (87%), Referenced to phase 2:EBT, Start of Yellow

Splits and Phases: 1: Q St & 3rd St

№ ø1	→ ø2
25 s	75 s

Lane Configurations Ideal Flow (vphpl) 1900		<i>></i>	-	*	•	4	*	4	†	-	1	+	1
Ideal Flow (vphpl)	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost time (s)	Lane Configurations											↑ ↑	7
Lane Util. Factor		1900	1900	1900	1900		1900	1900	1900	1900	1900	1900	1900
Frpb, ped/bikes 1.00 0.98 0 Fight, ped/bikes 1.00 1.00 1.00 Fit Fr 1.00 0.97 0 Fit Protected 0.99 1.00 1 Satd. Flow (prot) 4863 3071 12 Fit Permitted 0.99 1.00 1 Satd. Flow (perm) 4863 3071 12 Volume (vph) 0 0 1.00 1.00 1 Volume (vph) 0 0 1.00 1.00 1.00 1.00 1 Volume (vph) 0 0 1.70 620 0 0 0 0 0 404 5 Peak-hour factor, PHF 1.00 1	Total Lost time (s)					4.0						4.0	4.0
Fipb, ped/bikes	Lane Util. Factor					0.91						0.91	0.91
Frit Protected 0.99 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Frpb, ped/bikes					1.00						0.98	0.93
Filt Protected	Flpb, ped/bikes											1.00	1.00
Satd. Flow (prot) 4863 3071 12 Filt Permitted 0.99 1.00 1 Satd. Flow (perm) 4863 3071 12 Volume (vph) 0 0 170 620 0 0 0 0 404 2 Peak-hour factor, PHF 1.00 468 2.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Frt					1.00						0.97	0.85
Fit Permitted	Flt Protected					0.99						1.00	1.00
Satid. Flow (perm)	Satd. Flow (prot)					4863						3071	1205
Volume (vph) 0 0 170 620 0 0 0 404 2 Peak-hour factor, PHF 1.00 0 0 46	Flt Permitted					0.99						1.00	1.00
Peak-hour factor, PHF	Satd. Flow (perm)					4863						3071	1205
Peak-hour factor, PHF	Volume (vph)	0	0	0	170	620	0	0	0	0	0	404	379
Adj, Flow (vph) 0 0 170 620 0 0 0 404 4 RTOR Reduction (vph) 0 0 0 778 0 0 0 46 Lane Group Flow (vph) 0 0 712 0 0 0 46 Confl. Peds. (#/hr) 60													1.00
RTOR Reduction (vph) 0 0 0 78 0 0 0 46 Lane Group Flow (vph) 0 0 0 712 0 0 0 468 Confl. Peds. (#/hr) 60 8 8 8 9 0 0 0 468 9 Parking (#/hr) 60 0 <td></td> <td>379</td>													379
Lane Group Flow (vph) 0 0 0 712 0 0 0 468 Confl. Peds. (#/hr) 60 60 60 60 60 Parking (#/hr) 0 0 0 0 0 Turn Type Split Permitted Permitted Protected Phases 2 2 2 1 Permitted Phases 2 2 2 1 1 Permitted Phases 2 2 2 1 2 2 2 1 1 1 2 2 2 1 1 2 2													171
Confl. Peds. (#/hr) 60 Parking (#/hr) 0 0 Turn Type Split Permitted Phases Permitted Phases 2 2 1 Permitted Phases 27.5 15.5 1 Actuated Green, g (s) 27.0 15.0 1 Actuated g/C Ratio 0.54 0.30 0 Clearance Time (s) 3.5 3.5 Lane Grp Cap (vph) 2626 921 3.5 V/s Ratio Prot c0.15 c0.15 c0.15 v/s Ratio Perm 0.27 0.51 0 V/c Ratio 0.27 0.51 0 Uniform Delay, d1 6.2 14.5 1 Progression Factor 1.00 1.00 1.00 Incremental Delay, d2 0.3 2.0 Delay (s) 6.5 0.0 16.4 1 Level of Service A A B Approach Delay (s) 0.0 6.5 0.0 16.0 Approach LOS <td></td> <td>99</td>													99
Parking (#/hr) 0 0 Turn Type Split Per Protected Phases Permitted Phases 2 2 1 Actuated Green, G (s) 27.5 15.5 1 Effective Green, g (s) 27.0 15.0 1 Actuated g/C Ratio 0.54 0.30 0 Clearance Time (s) 3.5 3.5 Lane Grp Cap (vph) 2626 921 3.5 Lane Grp Cap (vph) 2626 921 3.5 V/s Ratio Prot c0.15 c0.15 c0.15 v/s Ratio Perm 0.27 0.51 0.51 0.0 V/c Ratio 0.27 0.51 0.0 1.0 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>작성 (10명의 기상국의</td><td>1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -</td><td>en a de Teb</td><td></td><td></td><td></td><td>60</td></td<>							작성 (10명의 기상 국 의	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	en a de T eb				60
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Protected Phases 2 2 2 1 Permitted Phases Actuated Green, G (s) 27.5 15.5 1 15.0 1 15.	Annual Control of the					3. 33. W. 10. 3 . 1							Perm
Permitted Phases						2						1	1 CIIII
Actuated Green, G (s) 27.5 15.5 1 Effective Green, g (s) 27.0 15.0 1 Actuated g/C Ratio 0.54 0.30 0 Clearance Time (s) 3.5 3.5 Lane Grp Cap (vph) 2626 921 3 v/s Ratio Prot 0.15 0.15 v/s Ratio Perm 0.27 0.51 0.51 0.51 Uniform Delay, d1 6.2 14.5 1 Progression Factor 1.00 1.00 1 Incremental Delay, d2 0.3 2.0 Delay (s) 6.5 16.4 1 Level of Service A A B Approach Delay (s) 0.0 6.5 0.0 16.0 Approach LOS A A A A B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.36 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 42.2% ICU Level of Service A					Strift sabsi la e	i eta a Aparti (m e)							1
Effective Green, g (s) 27.0 15.0 1 Actuated g/C Ratio 0.54 0.30 0 Clearance Time (s) 3.5 3.5 Lane Grp Cap (vph) 2626 921 3.5 V/s Ratio Prot c0.15 c0.15 c0.15 v/s Ratio Perm 0.27 0.51 0 V/c Ratio 0.27 0.51 0 Uniform Delay, d1 6.2 14.5 1 Progression Factor 1.00 1.00 1.00 1 Incremental Delay, d2 0.3 2.0 2.0 2 Delay (s) 6.5 16.4 1 Level of Service A A B Approach Delay (s) 0.0 6.5 0.0 16.0 Approach LOS A A A B Intersection Summary HCM Level of Service B B HCM Volume to Capacity ratio 0.36 A A B Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 42.2%						27.5						155	15.5
Actuated g/C Ratio 0.54 0.30 0 Clearance Time (s) 3.5 3.5 Lane Grp Cap (vph) 2626 921 v/s Ratio Prot c0.15 c0.15 v/s Ratio Perm 0.27 0.51 0 V/c Ratio 0.27 0.51 0 Uniform Delay, d1 6.2 14.5 1 Progression Factor 1.00 1.00 1 Incremental Delay, d2 0.3 2.0 Delay (s) 6.5 16.4 1 Level of Service A B Approach Delay (s) 0.0 6.5 0.0 16.0 Approach LOS A A A B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.36 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 42.2% ICU Level of Service A													15.0
Clearance Time (s) 3.5 3.5 Lane Grp Cap (vph) 2626 921 v/s Ratio Prot c0.15 c0.15 v/s Ratio Perm 0.27 0.51 v/c Ratio 0.27 0.51 Uniform Delay, d1 6.2 14.5 Progression Factor 1.00 1.00 Incremental Delay, d2 0.3 2.0 Delay (s) 6.5 16.4 1 Level of Service A B Approach Delay (s) 0.0 6.5 0.0 16.0 Approach LOS A A A B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.36 A A 8.0 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 42.2% ICU Level of Service A													0.30
Lane Grp Cap (vph) 2626 921 v/s Ratio Prot c0.15 c0.15 v/s Ratio Perm 0.27 0.51 0 v/c Ratio 0.27 0.51 0 Uniform Delay, d1 6.2 14.5 1 Progression Factor 1.00 1.00 1 Incremental Delay, d2 0.3 2.0 1 Delay (s) 6.5 16.4 1 Level of Service A B B Approach Delay (s) 0.0 6.5 0.0 16.0 Approach LOS A A A B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.36 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 42.2% ICU Level of Service A													3.5
V/s Ratio Prot c0.15 v/s Ratio Perm 0.27 v/c Ratio 0.27 Uniform Delay, d1 6.2 Progression Factor 1.00 Incremental Delay, d2 0.3 Delay (s) 6.5 Level of Service A Approach Delay (s) 0.0 Approach LOS A A A Intersection Summary HCM Volume to Capacity ratio 0.36 Actuated Cycle Length (s) 50.0 Intersection Capacity Utilization 42.2% ICU Level of Service A		A.05 (Pro 1915)	St Asgressics		per granden.								362
v/s Ratio Perm 0.27 0.51 0 v/c Ratio 0.27 0.51 0 Uniform Delay, d1 6.2 14.5 1 Progression Factor 1.00 1.00 1 Incremental Delay, d2 0.3 2.0 Delay (s) 6.5 16.4 1 Level of Service A B Approach Delay (s) 0.0 6.5 0.0 16.0 Approach LOS A A A B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.36 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 42.2% ICU Level of Service A													302
v/c Ratio 0.27 0.51 0 Uniform Delay, d1 6.2 14.5 1 Progression Factor 1.00 1.00 1 Incremental Delay, d2 0.3 2.0 2 Delay (s) 6.5 16.4 1 Level of Service A B B Approach Delay (s) 0.0 6.5 0.0 16.0 Approach LOS A A A B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.36 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 42.2% ICU Level of Service A						CO. 15						CO.15	0.08
Uniform Delay, d1 6.2 14.5 1 Progression Factor 1.00 1.00 1 Incremental Delay, d2 0.3 2.0 Delay (s) 6.5 16.4 1 Level of Service A B Approach Delay (s) 0.0 6.5 0.0 16.0 Approach LOS A A A B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.36 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 42.2% ICU Level of Service A						0.07						0.54	
Progression Factor 1.00 1.00 1 1.00 1 1.00 1 1.00 1 1.00 1 1.00 1													0.27 13.3
Incremental Delay, d2													
Delay (s) 6.5 16.4 1 Level of Service A B Approach Delay (s) 0.0 6.5 0.0 16.0 Approach LOS A A A B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.36 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 42.2% ICU Level of Service A													1.00
Level of Service A Approach Delay (s) 0.0 6.5 0.0 16.0 Approach LOS A A A A B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.36 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 42.2% ICU Level of Service A													1.9
Approach Delay (s) 0.0 6.5 0.0 16.0 Approach LOS A A A B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.36 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 42.2% ICU Level of Service A													15.2
Approach LOS A A A B Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.36 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 42.2% ICU Level of Service A									0.0				В
Intersection Summary HCM Average Control Delay 11.2 HCM Level of Service B HCM Volume to Capacity ratio 0.36 Actuated Cycle Length (s) 50.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 42.2% ICU Level of Service A													
HCM Average Control Delay HCM Level of Service B HCM Volume to Capacity ratio Actuated Cycle Length (s) Intersection Capacity Utilization 11.2 HCM Level of Service B Sum of lost time (s) 10.36 10.0			А			Α			А			В	
HCM Volume to Capacity ratio0.36Actuated Cycle Length (s)50.0Sum of lost time (s)8.0Intersection Capacity Utilization42.2%ICU Level of ServiceA													
Intersection Capacity Utilization 42.2% ICU Level of Service A						HCM Le	vel of S	ervice		В			
	Actuated Cycle Length	(s)		50.0	;	Sum of	lost time	e (s)		8.0			
			1	42.2%	e e e e e e e e e e e e e e e e e e e	ICU Lev	el of Se	rvice					
	Analysis Period (min)												
c Critical Lane Group													



Phase Number	1	2	
Movement	SBT	WBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	19	31	
Maximum Split (%)	38.0%	62.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	40.5	9.5	
End Time (s)	9.5	40.5	
Yield/Force Off (s)	6	37	
Yield/Force Off 170(s)	48	29	
Local Start Time (s)	3.5	22.5	
Local Yield (s)	19		
Local Yield 170(s)	11	42	
Intersection Summary			

Cycle Length 50 Control Type Pretimed Natural Cycle 50

Offset: 37 (74%), Referenced to phase 2:WBTL, Start of Yellow

Splits and Phases: 2: P St & 3rd St

Ą.	, 7 ø1	₹ ø2
1	9s	31 s

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Movement	EBT	EBR	SBL	SBT	SEL	SER
Lane Configurations	f _è			ተተኩ	ሻሻ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	
Lane Util. Factor	1.00			0.91	0.97	
Frpb, ped/bikes	0.98			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	0.98			1.00	0.96	
FIt Protected	1.00			0.98	0.96	
Satd. Flow (prot)	1780			4980	3347	
Flt Permitted	1.00			0.98	0.96	
Satd. Flow (perm)	1780			4980	3347	
Volume (vph)	90	20	405	552	470	170
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	90	20	405	552	470	170
RTOR Reduction (vph)	12	0	0	164	0	n er eret ble til det en en plate i men ste sprekte kræten er en
Lane Group Flow (vph)	98	0	ő	793	640	0
Confl. Peds. (#/hr)	90	60	60	, 00	V.V.	왕이 있어 150년 전에 하나 15명은 10명은 15명은 15명은 15명이 15명이 15명이 15명이 15명이 15명이 15명이 15명이
Parking (#/hr)			0			
Turn Type	post office (Leth)		Split		(1 to 1421)	
Protected Phases	6		4	4	5	
Permitted Phases	•		ni najita, T e r	mier ekrije.		
Actuated Green, G (s)	12.5			29.5	17.5	
Effective Green, g (s)	12.0			29.0	17.0	
Actuated g/C Ratio	0.17			0.41	0.24	
Clearance Time (s)	3.5			3.5	3.5	
Lane Grp Cap (vph)	305			2063	813	
v/s Ratio Prot	c0.06			c0.16	c0.19	
v/s Ratio Perm	00.00			60.10	60.15	
v/c Ratio	0.32			0.38	0.79	
Uniform Delay, d1	25.4			14.3	24.8	
Progression Factor	1.00			0.96	1.00	
	2.8			0.30	7.6	
Incremental Delay, d2	28.2			14.1	32.4	
Delay (s) Level of Service	20.2 C			14.1 B	32.4 C	
	28.2			14.1	32.4	
Approach Delay (s) Approach LOS	20.2 C			14.1 B	32.4 C	
The first special state of the first special sta	O.			J	9	
Intersection Summary	5-1		24.0		LICNAL -	val of Coming
HCM Average Control I			21.9		HCIVI LE	vel of Service C
HCM Volume to Capac			0.49	ng tilyk til 1984	C F.	
Actuated Cycle Length			70.0			lost time (s) 12.0
Intersection Capacity U	tilization	<mark>)</mark> National de la lace	61.6%	area a com	ICU Lev	el of Service B
Analysis Period (min)			15			
c Critical Lane Group						

Ák	1	*	
	*	-	-

Phase Number	2	4	5	6	_
Movement	Ped	SBTL	SEL	EBT	
Lead/Lag			Lead	Lag	
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	37	33		16	
	52.9%	47.1%	30.0%	22.9%	
Minimum Split (s)	37	33	7.5	16	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0		0	
Minimum Initial (s)	4				
Vehicle Extension (s)	3				
Minimum Gap (s)	3				
Time Before Reduce (s)					
Time To Reduce (s)	0	0			
Walk Time (s)	22.5			4.5	
Flash Dont Walk (s)	11	9		8	
Dual Entry	Yes				
Inhibit Max	Yes				
Start Time (s)	20.5				
End Time (s)	57.5				
Yield/Force Off (s)	54				
Yield/Force Off 170(s)	43				
Local Start Time (s)	3.5				
Local Yield (s)	37			医抗性 医多异物医异物毒	
Local Yield 170(s)	26	61	21	29	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

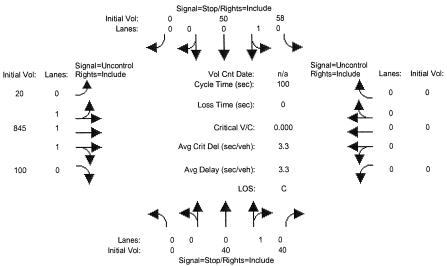
Offset: 17 (24%), Referenced to phase 4:SBTL, Start of Yellow

Splits and Phases: 3: N St & 3rd St

ÁÅ ø2		→ ø4					
37 s		33 \$					
→ ø5	→ ø6						
21 s	16 s						

Level Of Service Computation Report 2000 HCM Unsignalized (Future Volume Alternative) 2025+Project AM

Intersection #4: N St./4th St.



			Olgital	-otop/ragin	3-molade							
Street Name:			4th	St					N	St		
Approach:	Nor	th Bo	ound			ound				₩e	st Bo	und
Movement:			- R			- R					· T	
Volume Module	:											
Base Vol:	0	40	40	58	50	0	20	845	100	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	40	40	58	50	0	20	845	100	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:	0	40	40	58	50	0	20	845	100	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
PHF Adj:	1.00	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	40	40	58	50	0	20	845	100	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	40	40	58	50	0	20	845	100	0	0	0
Critical Gap	Modu.	le:										
Critical Gp:	XXXXX	6.5	6.2	7.1	6.5	XXXXX	4.1	XXXX	XXXXX	XXXXX	XXXX	XXXXX
FollowUpTim:	XXXXX	4.0	3.3	3.5	4.0	xxxxx	2.2	XXXX	XXXXX	XXXXX	XXXX	$XXXXX_{\ell}$
Capacity Modu												
Cnflict Vol:				357	1000	XXXXX	15	XXXX	XXXXX	XXXX	XXXX	XXXXX
Potent Cap.:				602	245	XXXXX	1616	XXXX	XXXXX	XXXX	XXXX	XXXXX
Move Cap.:	XXXX	255	715	489	239	xxxxx	1596	XXXX	XXXXX	XXXX	XXXX	XXXXX
Volume/Cap:	XXXX	0.16	0.06	0.12	0.21	XXXX	0.01	XXXX	XXXX	XXXX	XXXX	XXXX
Level Of Serv												
Queue:									XXXXX			
Stopped Del::									XXXXX			XXXXX
LOS by Move:		*		*		*	A	*	*	*	*	*
			- RT						- RT		- LTR	
Shared Cap.:									XXXXX			XXXXX
SharedQueue::									XXXXX			
Shrd StpDel:									XXXXX			
Shared LOS:			•	С		*	Α	*	*	*	*	*
ApproachDel:					21.2		X	XXXXX		X.	XXXXX *	
ApproachLOS:		С			С			*			*	

	۶	-	*	1	4	4	1	†	~	-	+	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		414						ተተጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.97				
Flt Protected		1.00						1.00				
Satd. Flow (prot)		5066						4866				
Flt Permitted		1.00						1.00				
Satd. Flow (perm)		5066						4866				
Volume (vph)	70	873	. 0	0	0	0	0	1059	290	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	70	873	0	0	0	0	0	1059	290	0	0	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	44	0	0	0	0
Lane Group Flow (vph)	0	930	0	0	0	0	0	1305	0	0	0	0
Confl. Peds. (#/hr)	60								60			
Parking (#/hr)	0		0						0			
Turn Type	Split	ndernamiyaridhasayəriyinin iAA	THE CONTROL OF THE CO	AMPauri Mauri Managara da managara (194	necessit di gi dan gurunga cake da an di san	etti intelitariin elimenin elemente ele	na e e e e e e e e e e e e e e e e e e e	iga kensi ili sim ili ilusususekuim tuse eus				-
Protected Phases	1	1						2				
Permitted Phases												
Actuated Green, G (s)		31.5						31.5				
Effective Green, g (s)		31.0						31.0				
Actuated g/C Ratio		0.44						0.44				
Clearance Time (s)		3.5						3.5				
Lane Grp Cap (vph)		2244						2155				
v/s Ratio Prot		c0.18						c0.27				
v/s Ratio Perm												
v/c Ratio		0.41						0.61				
Uniform Delay, d1		13.3						14.8				
Progression Factor		1.03						1.00				
Incremental Delay, d2		0.5						1.3				
Delay (s)		14.2						16.1				
Level of Service		В						В				
Approach Delay (s)		14.2			0.0			16.1			0.0	
Approach LOS		В			Α			В			Α	
Intersection Summary												
HCM Average Control D			15.3	1	HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.51									
Actuated Cycle Length (70.0			lost time			8.0			
Intersection Capacity Ut	tilization		52.9%		CU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	35	35	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	34.5	34.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s)) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	22	22	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	65.5	30.5	
End Time (s)	30.5	65.5	
Yield/Force Off (s)	27	62	
Yield/Force Off 170(s)	18	53	
Local Start Time (s)	38.5	3.5	
Local Yield (s)	0	35	
Local Yield 170(s)	61	26	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 27 (39%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 5: N St & 5th St

♣ ø1	↑ ø2
35 s	35 s

	۶	-	*	1	4	*	1	†	/	-	1	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	J.	ተተጉ		ħ	†					Ť	<u>ተ</u> թ	***************************************
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0					4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95					1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00					1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00					1.00	1.00	
Frt	1.00	0.99		1.00	1.00					1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)	1770	5045		1770	3530					1593	3349	
Flt Permitted	0.95	1.00		0.95	1.00					0.95	1.00	
Satd. Flow (perm)	1770	5045		1770	3530					1593	3349	
Volume (vph)	49	1049	40	120	485	9	0	0	0	391	777	435
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	49	1049	40	120	485	9	0	0	0	391	777	435
RTOR Reduction (vph)	0	6	0	0	2	0	0	0	0	0	110	0
Lane Group Flow (vph)	49	1083	ő	120	492	Ö	Ö	ő	ő	391	1102	0
Confl. Peds. (#/hr)		.000	60		nerdy ,			- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	60	001	1102	
Parking (#/hr)									- 00	0		
Turn Type	Prot			Prot		Here are the second second				Split		
Protected Phases	1	6		5	2					4	4	
Permitted Phases		.			-							
Actuated Green, G (s)	6.5	22.0		8.0	23.5					28.0	28.0	
Effective Green, g (s)	6.0	21.5		7.5	23.0					29.0	29.0	
Actuated g/C Ratio	0.09	0.31		0.11	0.33					0.41	0.41	
Clearance Time (s)	3.5	3.5		3.5	3.5					5.0	5.0	
Lane Grp Cap (vph)	152	1550		190	1160					660	1387	
v/s Ratio Prot	0.03	c0.21		c0.07	0.14					0.25	c0.33	
v/s Ratio Prot v/s Ratio Perm	0.03	60.21		60.07	0.14					0.23	60.55	
v/c Ratio	0.32	0.70		0.63	0.42					0.59	0.79	
	30.1									15.9	17.9	
Uniform Delay, d1		21.4		29.9 1.57	18.3					0.78	0.75	
Progression Factor	1.00	1.00			0.35							
Incremental Delay, d2	5.5	2.6		14.5	1.1					3.0	3.7	
Delay (s)	35.6	24.0		61.4	7.5					15.4	17.2	
Level of Service	D	C		E	Α					В	В	
Approach Delay (s)		24.5			18.0			0.0			16.8	
Approach LOS		С			В			Α			В	
Intersection Summary							1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
HCM Average Control [19.6		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.74									
Actuated Cycle Length			70.0		Sum of				12.0			
Intersection Capacity U	tilizatior	1	73.4%		ICU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												

1	2	dri ibiarti, armini apate			
	ar en	4	5	6	
EBL	WBT	SBTL	WBL	EBT	
Lead	Lag		Lead	Lag	
Max	Max	Max	Max	Max	
10	27	33	11.5	25.5	
4.3%	38.6%	47.1%	16.4%	36.4%	
8	27	33	7.5	25.5	
3.5	3.5	3.5	3.5	3.5	
0	0	1.5	0	0	
4	4	4	4	4	
3	3	3	3	3	
3	3	3	3	3	
0	0	0	0	0	
0	0	0	0	0	
	11.5	10		10	
	12	18		12	
No	Yes	Yes	Yes	Yes	
Yes	Yes	Yes	Yes	Yes	
58	68	25	58	69.5	
68	25		69.5	25	
64.5	21.5	53	66	21.5	
64.5	9.5	35	66	9.5	
62	2	29	62	3.5	
68.5	25.5	57	0	25.5	
68.5	13.5	39	0	13.5	
		70			
	Р	retimed			
		. •			
	Max 10 1.3% 8 3.5 0 4 3 0 0 No Yes 58 64.5 64.5 62.5 68.5	Max Max 10 27 4.3% 38.6% 8 27 3.5 3.5 0 0 4 4 3 3 3 3 0 0 0 11.5 12 No Yes Yes Yes 58 68 68 25 64.5 21.5 64.5 9.5 62 2 68.5 25.5 68.5 13.5	Max Max Max 10 27 33 1.3% 38.6% 47.1% 8 27 33 3.5 3.5 3.5 0 0 1.5 4 4 4 4 3 3 3 3 0 0 0 0 0 0 0 11.5 10 12 18 No Yes Yes Yes Yes Yes Yes Yes Yes 58 68 25 68 25 58 64.5 21.5 53 64.5 9.5 35 62 2 29 68.5 25.5 57 68.5 13.5 39	Max Max Max Max 10 27 33 11.5 4.3% 38.6% 47.1% 16.4% 8 27 33 7.5 3.5 3.5 3.5 3.5 0 0 1.5 0 4 4 4 4 3 3 3 3 3 3 3 3 3 3 0 0 0 0 0 11.5 10 12 18 18 No Yes Yes	Max Max Max Max Max 10 27 33 11.5 25.5 4.3% 38.6% 47.1% 16.4% 36.4% 8 27 33 7.5 25.5 3.5 3.5 3.5 3.5 3.5 0 0 1.5 0 0 4 4 4 4 4 3 3 3 3 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 11.5 10 10 10 12 18 12 12 No Yes Yes Yes Yes Yes Yes Yes Yes Yes 58 68 25 58 69.5 25 64.5

Splits and Phases:	6: Capitol Mall & 3rd 9	₹†
SUITS ATTU FHASES.	U. Cabilloi iviali & Jiu C	Эι.

_ ø1	← ø2	Ø4
10 s	27 s	33 s
√ ø5	→ ø6	
11.5 s	25.5 s	

3/16/2005 Synchro 6 Report Fehr & Peers Associates, Inc. Page 10

	≯	-	*	•	4	*	4	†	~	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	ተተ	7		414			43			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95	1.00		0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.87		0.99			0.96			0.97	
Flpb, ped/bikes	0.95	1.00	1.00		1.00			0.99			0.98	
Frt	1.00	1.00	0.85		0.98			0.95			0.96	
Flt Protected	0.95	1.00	1.00		1.00			0.99			0.99	
Satd. Flow (prot)	1687	3539	1380		4921			1498			1535	
Flt Permitted	0.40	1.00	1.00		0.92			0.93			0.94	
Satd. Flow (perm)	718	3539	1380		4536			1413			1452	
Volume (vph)	55	1185	200	10	529	69	10	20	20	55	148	75
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	55	1185	200	1.00	529	69	1.00	20	20	55	148	75
			93		23							
RTOR Reduction (vph)	0	1405		0		0	0	13	0	0	19	C
Lane Group Flow (vph)	55	1185	107	0	585	0	0	37	0	0	259	0
Confl. Peds. (#/hr)	60		60	60		60	60	an fara a na 📥 a	60	60		60
Parking (#/hr)						A-246-11	0	0	0	0	0	C
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)	38.0	38.0	38.0		38.0			23.5			23.5	
Effective Green, g (s)	37.5	37.5	37.5		37.5			24.5			24.5	
Actuated g/C Ratio	0.54	0.54	0.54		0.54			0.35			0.35	
Clearance Time (s)	3.5	3.5	3.5		3.5			5.0			5.0	
Lane Grp Cap (vph) v/s Ratio Prot	385	1896 c0.33	739		2430			495			508	
v/s Ratio Perm	0.08		0.08		0.13			0.03			c0.18	
v/c Ratio	0.14	0.62	0.14		0.24			0.07			0.51	
Uniform Delay, d1	8.2	11.3	8.2		8.7			15.2			18.0	
Progression Factor	0.62	0.66	0.24		0.52			0.90			0.83	
Incremental Delay, d2	0.6	1.2	0.3		0.2			0.3			3.5	
Delay (s)	5.6	8.7	2.3		4.7			14.0			18.4	
Level of Service	Α.	Α.	2.0 A		A			В.			В	
Approach Delay (s)		7.7			4.7			14.0			18.4	
Approach LOS		Á			A			В			В	
Intersection Summary												
HCM Average Control I HCM Volume to Capaci Actuated Cycle Length Intersection Capacity U Analysis Period (min)	ty ratio (s)	1	8.3 0.58 70.0 74.1% 15		Sum of	evel of S lost time rel of Se	e (s)		8.0 D			
Analysis Period (min) c Critical Lane Group			15									



Phase Number	2	4	
Movement	EBWB	NBSB	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	41.5	28.5	
Maximum Split (%)	59.3%	40.7%	
Minimum Split (s)	22.5	20	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	10	10	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	59	30.5	
End Time (s)	30.5	59	
Yield/Force Off (s)	27	54	
Yield/Force Off 170(s)	17		
Local Start Time (s)	32		
Local Yield (s)	0		
Local Yield 170(s)	60	17	
Intersection Summary			
Cycle Length			70
Control Type		Dr	atimed

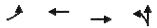
Cycle Length 70
Control Type Pretimed
Natural Cycle 45

Offset: 27 (39%), Referenced to phase 2:EBWB, Start of Yellow

Splits and Phases: 7: Capitol Mall & 4th St

\$ ø2	1 04
41.5 s	28.5 s

	≯	-	*	*	4		4	†	1	-	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻሻ	个 个			ተተጉ		44	ተተ ጉ				
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Γotal Lost time (s)	4.0	4.0			4.0		4.0	4.0				
ane Util. Factor	0.97	0.95			0.91		0.97	0.91				
Frpb, ped/bikes	1.00	1.00			0.98		1.00	0.95				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.97		1.00	0.94				
FIt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			4817		3433	4567				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			4817		3433	4567				
Volume (vph)	582	678	0	0	170	50	439	460	300	0	0	С
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	582	678	0	0	170	50	439	460	300	0	0	(
RTOR Reduction (vph)	0	0.0	0	0	37	0	0	122	0	0	0	Č
Lane Group Flow (vph)	582	678	0	Ö	183	ŏ	439	638	Ö	Ö	0	Č
Confl. Peds. (#/hr)	JU2	010			100	60	-100	000	60			and State
Turn Type	Prot						Split	and the same				
Protected Phases	1	6			2		8	8				
Permitted Phases					Y Hijisak							
Actuated Green, G (s)	14.5	36.5			18.5		25.0	25.0				
Effective Green, g (s)	14.0	36.0			18.0		26.0	26.0				
Actuated g/C Ratio	0.20	0.51			0.26		0.37	0.37				
Clearance Time (s)	3.5	3.5			3.5		5.0	5.0				
Lane Grp Cap (vph)	687	1820	-		1239		1275	1696				
v/s Ratio Prot	c0.17	c0.19			0.04		0.13	c0.14				
v/s Ratio Perm	CO. 17	60.13			0.0-		0.10	CO. 1-T				
v/c Ratio	0.85	0.37			0.15		0.34	0.38				
Uniform Delay, d1	27.0	10.2			20.1		15.9	16.1				
Progression Factor	0.47	0.23			1.00		0.41	0.24				
Incremental Delay, d2	10.0	0.23			0.3		0.6	0.5				
	22.6	2.8			20.3		7.1	4.4				
Delay (s) Level of Service	22.0 C	2.0 A			20.5 C		7.1 A	4.4 A				
	U	11.9			20.3		A	5.4			0.0	
Approach Delay (s) Approach LOS		11.9 B			20.3 C			3.4 A			0.0 A	
		U			O			^			^`	
Intersection Summary HCM Average Control I	Delay		9.7		HCM Le	vel of S	ervice		А			
HCM Volume to Capac			0.50		OIVI LO	,,0,0,0	O1 V100					
Actuated Cycle Length			70.0		Sum of	lost time	2 (2)		12.0			
Intersection Capacity U			58.1%		ICU Lev				12.0 B			
Analysis Period (min)	unzauUl	Martin de Coreañ	15		IOO LEV	01 01 06	VICE					
c Critical Lane Group			10									



Phase Number	1	2	6	8
Movement	EBL	WBT	EBT	NBTL
Lead/Lag	Lag	Lead		
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	18	22	40	30
Maximum Split (%)	25.7%		57.1%	42.9%
Minimum Split (s)	7.5	20.5	20.5	17
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0	0	0	1.5
Minimum Initial (s)	4		4	
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3		
Time Before Reduce (s		0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)		7	7	7
Flash Dont Walk (s)		10		
Dual Entry	No	Yes	Yes	
Inhibit Max	Yes			
Start Time (s)	20.5			
End Time (s)	38.5			
Yield/Force Off (s)	35			
Yield/Force Off 170(s)	35			
Local Start Time (s)	55.5			
Local Yield (s)	0	10 10 10 10 10 10 10 10 10 10 10 10 10 1	A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Local Yield 170(s)	0	42	60	23.5

Cycle Length 70
Control Type Pretimed
Natural Cycle 55

Offset: 35 (50%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow

Splits and Phases: 8: Capitol Mall & 5th St

4 ø2	ø1	√ ↑ _{ø8}
22 s	18 s	30 s
 ▶ ø6		
40 s		

	<u></u>		*	1	4	1	4	1	*	1	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				*	44	7	7	†			朴孙	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor				0.91	0.91	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			0.99	
FIt Protected				0.95	0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1610	3358	1583	1770	1863			3515	
Flt Permitted				0.95	0.99	1.00	0.13	1.00			1.00	
Satd. Flow (perm)				1610	3358	1583	248	1863			3515	
Volume (vph)	0	0	0	498	600	180	29	30	0	0	1052	50
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	498	600	180	29	30	0	0	1052	50
RTOR Reduction (vph)	0	0	0	0	0	98	0	0	0	0	5	0
Lane Group Flow (vph)	0	0	0	354	744	82	29	30	0	0	1097	0
Turn Type		<u>armatu esta pieta de la junto de Petronia.</u>	C	ustom	(custom c	custom		niman min manggan ganga kadi		eneidine ett til kan i til kun ja passa	
Protected Phases											4	
Permitted Phases				2	2	2	8	8				
Actuated Green, G (s)				32.5	32.5	32.5	30.5	30.5			30.5	
Effective Green, g (s)				32.0	32.0	32.0	30.0	30.0			30.0	
Actuated g/C Ratio				0.46	0.46	0.46	0.43	0.43			0.43	
Clearance Time (s)				3.5	3.5	3.5	3.5	3.5			3.5	
Lane Grp Cap (vph)				736	1535	724	106	798			1506	
v/s Ratio Prot				- বিষ্কৃতিৰ		이 사이 첫 중심한		an sa mami			c0.31	
v/s Ratio Perm				0.22	c0.22	0.05	0.12	0.02				
v/c Ratio				0.48	0.48	0.11	0.27	0.04			0.73	
Uniform Delay, d1				13.2	13.3	10.9	12.9	11.6			16.6	
Progression Factor				0.83	0.83	0.40	0.38	0.07			1.00	
Incremental Delay, d2				2.2	1.1	0.3	6.0	0.1			3.1	
Delay (s)				13.2	12.1	4.7	11.0	0.9			19.7	
Level of Service				В	В	Α	В	A			В	
Approach Delay (s)		0.0		_ .	11.3		 .	5.8			19.7	
Approach LOS		A			В			A			В	
The state of the s					_							
Intersection Summary									_			
HCM Average Control D			15.0		HCM Le	vel of S	ervice		В			
HCM Volume to Capacit	•		0.60		4 0.300 - 10.20	il robra nasin ne						
Actuated Cycle Length (70.0		Sum of I				8.0			
Intersection Capacity Uti	lization	1	58.0%	ļ	CU Lev	el of Se	rvice		В			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	2	4	8	
Movement	WBTL	SBT	NBTL	
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	
Maximum Split (s)	36	34	34	
Maximum Split (%)	51.4%	48.6%	48.6%	
Minimum Split (s)	7.5	7.5	34	
Yellow Time (s)	3.5	3.5	3.5	
All-Red Time (s)	0	0	0	
Minimum Initial (s)	4	4	4	
Vehicle Extension (s)	3	3	3	
Minimum Gap (s)	3	3	3	
Time Before Reduce (s	s) 0	0	0	
Time To Reduce (s)	0	0	0	
Walk Time (s)			18.5	
Flash Dont Walk (s)			12	
Dual Entry	Yes	Yes	Yes	
Inhibit Max	Yes			
Start Time (s)	32.5	68.5	68.5	
End Time (s)	68.5	32.5		
Yield/Force Off (s)	65		29	
Yield/Force Off 170(s)	65			
Local Start Time (s)	3.5	39.5	39.5	
Local Yield (s)	36	18 (18) 18 (18) 18 (18)	0	
Local Yield 170(s)	36	0	58	
Intersection Summary				
Cycle Length			70	

Control Type Pretimed
Natural Cycle 60

Offset: 29 (41%), Referenced to phase 4:SBT, Start of Yellow

Splits and Phases: 9: L St & 3rd St

▼ ø2	₩ ø4
36 s	34 s
	ø8 34 s

	۶	-	*	*	4		4	†	~	>	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					411th		P)	ተተተ				777
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		1.00	0.91				0.88
Frpb, ped/bikes					0.99		1.00	1.00				0.95
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.97		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6177		1770	5085				2656
FIt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6177		1770	5085				2656
Volume (vph)	0	0	0	0	1156	240	160	932	0	0	0	380
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	1156	240	160	932	0	0	0	380
RTOR Reduction (vph)	0	0	0	0	53	0	8	0	0	0	0	8
Lane Group Flow (vph)	0	0	0	0	1343	0	152	932	0	0	0	372
Confl. Peds. (#/hr)						60	60					60
Turn Type							Split				c	ustom
Protected Phases					2		1	1				
Permitted Phases												1
Actuated Green, G (s)					25.0		35.5	35.5				35.5
Effective Green, g (s)					26.0		36.0	36.0				36.0
Actuated g/C Ratio					0.37		0.51	0.51				0.51
Clearance Time (s)					5.0		4.5	4.5				4.5
Lane Grp Cap (vph)					2294		910	2615				1366
v/s Ratio Prot					c0.22		0.09	c0.18				
v/s Ratio Perm												0.14
v/c Ratio					0.59		0.17	0.36				0.27
Uniform Delay, d1					17.7		9.0	10.1				9.6
Progression Factor					1.00		0.34	0.49				1.00
Incremental Delay, d2					1.1		0.3	0.3				0.5
Delay (s)					18.8		3.4	5.3				10.1
Level of Service					В		Α	Α				В
Approach Delay (s)		0.0			18.8			5.0			10.1	
Approach LOS		Α			В			Α			В	
Intersection Summary	-											
HCM Average Control D			12.4		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.45									
Actuated Cycle Length			70.0			lost time			8.0			
Intersection Capacity Ut	ilizatior)	68.4%		ICU Lev	el of Se	rvice		С			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	NBTL	WBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	40	30	
Maximum Split (%)	57.1%	42.9%	
Minimum Split (s)	40	30	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	1	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	26.5	16	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	37	7	
End Time (s)	7	37	
Yield/Force Off (s)	2.5	32	
Yield/Force Off 170(s)	63.5	23	
Local Start Time (s)	5	45	
Local Yield (s)	40.5	0	
Local Yield 170(s)	31.5	61	
		the section of	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 32 (46%), Referenced to phase 2:WBT, Start of Yellow

Splits and Phases: 10: L St & 5th St

44	4
"1 ø1	ø2
40 s	30 s

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Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	SEL2	SEL	SER		
Lane Configurations		ፈተኩ		ĵ»	7	ሻ	ተ ኩ		አ ነነት			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0		4.0			
Lane Util. Factor		0.91		0.95	0.95	0.91	0.91		0.91			
Frpb, ped/bikes		0.99		1.00	1.00	1.00	1.00		0.98			
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00		1.00			
Frt		0.98		0.92	0.85	1.00	1.00		0.97			
FIt Protected		1.00		1.00	1.00	0.95	0.99		0.96			
Satd. Flow (prot)		4953		1620	1504	1610	3362		6157			
FIt Permitted		1.00		1.00	1.00	0.95	0.99		0.96			
Satd. Flow (perm)		4953		1620	1504	1610	3362		6157			
Volume (vph)	100	2012	273	40	130	170	220	100	1901	587		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Adj. Flow (vph)	100	2012	273	40	130	170	220	100	1901	587		
RTOR Reduction (vph)	0	16	0	2	2	0	0	0	0	0		
Lane Group Flow (vph)	0	2369	0	90	76	126	264	0	2588	0		
Confl. Peds. (#/hr)			60							60		
Turn Type	Split				Perm	Split		Split				
Protected Phases	3	3		5		1	1	2	2			
Permitted Phases	war è				5							
Actuated Green, G (s)		37.0		6.5	6.5	6.5	6.5		35.0			
Effective Green, g (s)		37.0		6.0	6.0	6.0	6.0		35.0			
Actuated g/C Ratio		0.37		0.06	0.06	0.06	0.06		0.35			
Clearance Time (s)		4.0		3.5	3.5	3.5	3.5		4.0			
Lane Grp Cap (vph)		1833	**************************************	97	90	97	202		2155			
v/s Ratio Prot		c0.48		c0.06	y nakina.	0.08	c0.08		c0.42			
v/s Ratio Perm					0.05		:					
v/c Ratio		1.29		0.93	0.85	1.30	1.31		1.20			
Uniform Delay, d1		31.5		46.8	46.5	47.0	47.0		32.5			
Progression Factor		1.00		1.00	1.00	1.09	1.08		1.00			
Incremental Delay, d2		135.7		73.6	59.2	191.0	168.9		95.2			
Delay (s)		167.2		120.3	105.7	242.0	219.9		127.7			
Level of Service		F		F	F	F	F		F			
Approach Delay (s)		167.2		113.6	April No.	Albertai	227.0		127.7			
Approach LOS		F		F			F		F			
Intersection Summary								10.				
HCM Average Control [151.3	1	HCM Le	vel of S	ervice		F			
HCM Volume to Capaci	50 - 1 - 1 - 1 - 1 - 1 - 1		1.23									
Actuated Cycle Length			100.0			lost time		16.0				
Intersection Capacity U	tilizatior	V	108.0%		ICU Lev	el of Se	rvice		G			
Analysis Period (min)			15									
c Critical Lane Group												

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Phase Number	1	2	3	5	6		
Movement	SBTL	SEL	EBTL	NBT	Ped		
Lead/Lag	Lead	Lag					
Lead-Lag Optimize							
Recall Mode	Max	Max	Max	Max	Max		
Maximum Split (s)	10	39	41	10	59		
Maximum Split (%)	10.0%	39.0%	41.0%	10.0%	59.0%		
Minimum Split (s)	7.5	39	41	7.5	59		
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		
All-Red Time (s)	0	0.5	0.5	0	0.5		
Minimum Initial (s)	4	4	4	4	4		
Vehicle Extension (s)	3	3	3	3	3		
Minimum Gap (s)	3	3	3	3	3		
Time Before Reduce (s)	0	0	0	0	0		
Time To Reduce (s)	0	0	0	0	0		
Walk Time (s)		24	26		44		
Flash Dont Walk (s)		11	11		11		
Dual Entry	Yes	Yes	Yes	Yes	Yes		
Inhibit Max	Yes	Yes	Yes	Yes	100		
Start Time (s)	35	45	94	84	35		
End Time (s)	45	84	35	94	94		
Yield/Force Off (s)	41.5	80	31	90.5	90		
Yield/Force Off 170(s)	41.5	69	20	90.5	79		
Local Start Time (s)	55	65	14	4	55		
Local Yield (s)	61.5	0	51	10.5	10		
Local Yield 170(s)	61.5	89	40	10.5	99		

Cycle Length 100
Control Type Pretimed
Natural Cycle 140

Offset: 80 (80%), Referenced to phase 2:SEL, Start of Yellow

Splits and Phases: 11: J St & 3rd St

ø1	★ ø2	↑ ø5	♣ ₀₃
10 s	39 s	10 s	41 s
Ák ø6			
59 s			

	≯		*	1	4	4	4	†	<i>p</i>	-	Ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	4III	7					ተ ኁ	7			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.81	1.00					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.96					1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.96	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	6030	1514					3254	1441			
Flt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	6030	1514					3254	1441			
Volume (vph)	780	3110	380	0	0	0	0	602	570	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	780	3110	380	0	0	0	0	602	570	0	0	0
RTOR Reduction (vph)	53	2	167	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	668	3167	213	0	0	0	0	822	350	0	0	0
Confl. Peds. (#/hr)	60		60									
Parking (#/hr)	0											
Turn Type	Split	minimum in the transmit	Perm		···				Perm			
Protected Phases	1	0.074						2				
Permitted Phases			1						2			
Actuated Green, G (s)	56.0	56.0	56.0					36.0	36.0			
Effective Green, g (s)	56.0	56.0	56.0					36.0	36.0			
Actuated g/C Ratio	0.56	0.56	0.56					0.36	0.36			
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Grp Cap (vph)	722	3377	848				uego bojetský	1171	519			
v/s Ratio Prot	0.52	c0.53	0.0					c0.25	9.9			
v/s Ratio Perm		00.00	0.14					000	0.24			
v/c Ratio	0.93	0.94	0.25					0.70	0.67			
Uniform Delay, d1	20.1	20.4	11.3					27.4	27.0			
Progression Factor	0.73	0.75	1.49					1.00	1.00			
Incremental Delay, d2	2.6	0.7	0.1					3.5	6.9			
Delay (s)	17.3	16.0	16.8					30.9	33.9			
Level of Service	В	В	В					C	C			
Approach Delay (s)	rediae ⊼ .	16.3			0.0			31.8			0.0	
Approach LOS		В			A			C			A	
Intersection Summary												
HCM Average Control [19.6		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.85									
Actuated Cycle Length			100.0			lost time			8.0			
Intersection Capacity U	tilizatior	1	84.4%		CU Lev	el of Se	rvice		E			
Analysis Period (min) c Critical Lane Group			15									



Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	60	40	
Maximum Split (%)	60.0%	40.0%	
Minimum Split (s)	60	40	
Yellow Time (s)	4	4	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	44	20	
Flash Dont Walk (s)	12	16	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	43	3	
End Time (s)	3	43	
Yield/Force Off (s)	99	39	
Yield/Force Off 170(s)	87	23	
Local Start Time (s)	44	4	
Local Yield (s)	0	40	
Local Yield 170(s)	88	24	

Cycle Length 100
Control Type Pretimed
Natural Cycle 100

Offset: 99 (99%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 12: J St & 5th St

♣ ø1	↑ ø2
60 s	40 s

-	۶		*	•	4	*	1	1	*	1	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					1117>		ሻሻ	个个				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		0.97	0.95				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.99		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6136		3433	3362				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6136		3433	3362				
Volume (vph)	0	0	0	0	1210	110	170	1162	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	1210	110	170	1162	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	29	0	5	0	0	0	0	0
Lane Group Flow (vph)	0	0	Ö	0	1291	0	165	1162	Ö	Ö	Ö	0
Confl. Peds. (#/hr)	V	U	O.	U	1231	60	100	1102	9	U	U	U
Parking (#/hr)					0	00		0				
					U	death out the	Split	U	Fried at 18,000			i i i jegijanu
Turn Type					5 (Car 14)		3piit 2	2				
Protected Phases							2	2				
Permitted Phases					40 E		00 E	20 E				
Actuated Green, G (s)					16.5		26.5	26.5				
Effective Green, g (s)					16.0		26.0	26.0				
Actuated g/C Ratio					0.32		0.52	0.52				
Clearance Time (s)		5		Salas Salas Salas II	3.5	New Yorks Commence	3.5	3.5	ARRONO CURA			2 1900 San 1999 Sa
Lane Grp Cap (vph)					1964		1785	1748				
v/s Ratio Prot					c0.21		0.05	c0.35				
v/s Ratio Perm												
v/c Ratio					0.66		0.09	0.66				
Uniform Delay, d1					14.6		6.1	8.8				
Progression Factor					1.00		1.34	1.40				
Incremental Delay, d2					1.7		0.1	1.1				
Delay (s)					16.4		8.2	13.4				
Level of Service					В		Α	В				
Approach Delay (s)		0.0			16.4			12.7			0.0	
Approach LOS		Α			В			В			Α	
Intersection Summary												
HCM Average Control I HCM Volume to Capaci			14.5 0.66		HCM Le	vel of S	ervice		В			
Actuated Cycle Length	(s)		50.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity U		1	117.1%			el of Se			Н			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	WBT	NBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	20	30	
Maximum Split (%)	40.0%	60.0%	
Minimum Split (s)	20	30	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s)) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	5.5	14.5	
Flash Dont Walk (s)	11	12	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	15.5	35.5	
End Time (s)	35.5	15.5	
Yield/Force Off (s)	32	12	
Yield/Force Off 170(s)	21	0	
Local Start Time (s)	33.5	3.5	
Local Yield (s)	0	30	
Local Yield 170(s)	39	18	
	SSSTED - 100 C - 100 C - 100 C	en men en e	

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 32 (64%), Referenced to phase 1:WBT, Start of Yellow

Splits and Phases: 13: I St & 5th St

4	44
ø1	1 ø2
20 s	30 s

	۶	-	*	•	4	1	4	†	1	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተቀኈ		*	ተቀሱ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.91		0.86	0.86				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4867		1522	4806				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)				-	4867		1522	4806				
Volume (vph)	0	0	0	0	815	210	400	1420	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	815	210	400	1420	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	48	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1019	0	352	1420	0	0	0	0
Confl. Peds. (#/hr)						60						
Turn Type							Split					
Protected Phases					4		2	2				
Permitted Phases												
Actuated Green, G (s)					21.5		21.5	21.5				
Effective Green, g (s)					21.0		21.0	21.0				
Actuated g/C Ratio					0.42		0.42	0.42				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)		ucas, a paga magitad dali sciali sciali sciali	net manusiani ni ili kiribo oma kastoni ilimoi	terministrativa tambén de l'envere l'el	2044	ailaikkein <u>aupunionau</u> maupunon	639	2019	erna esta está sala suceida está considerado	athiomes (1999) Was dispused in	nes de mila Alexandre (1938), e la esta ción de	
v/s Ratio Prot					c0.21		0.23	c0.30				
v/s Ratio Perm												
v/c Ratio					0.50		0.55	0.70				
Uniform Delay, d1					10.6		10.9	11.9				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.9		3.4	2.1				
Delay (s)					11.5		14.3	14.0				
Level of Service					В		В	В				
Approach Delay (s)		0.0			11.5			14.1			0.0	
Approach LOS		Α			В			В			Α	
Intersection Summary										re e		
HCM Average Control I	•		13.2		HCM Le	vel of S	ervice		В			
HCM Volume to Capac			0.60									
Actuated Cycle Length			50.0			lost time			8.0			
Intersection Capacity U	tilizatior	resol	55.5%		ICU Lev	el of Se	rvice		В			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	2	4	
Movement	NBTL	WBT	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	21.5	21.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4		
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	10		
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes		
Start Time (s)	48.5	23.5	
End Time (s)	23.5	48.5	
Yield/Force Off (s)	20	45	
Yield/Force Off 170(s)	12	37	
Local Start Time (s)	3.5	28.5	
Local Yield (s)	25	0	
Local Yield 170(s)	17	42	

Cycle Length 50
Control Type Pretimed
Natural Cycle 45

Offset: 45 (90%), Referenced to phase 4:WBT, Start of Yellow

Splits and Phases: 14: L St & 16th St

a h	4
N ø2	ø4
25 s	25 s

	۶	-	*	*	4-	1	1	†	~	1	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		11113					***************************************				444	***************************************
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.99									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.96									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		6100									5013	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		6100					N 12 ZAVI GO 110				5013	
Volume (vph)	0	1148	380	0	0	0	0	0	0	244	600	. 0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1148	380	0	0	0	0	0	0	244	600	0
RTOR Reduction (vph)	0	35	0	0	0	0	0	0	0	0	45	0
Lane Group Flow (vph)	0	1493	_0	0	0	0	0	0	0	0	799	0
Confl. Peds. (#/hr)			60							60		
Parking (#/hr)										0		0
Turn Type										Split	mines i naisana dh	
Protected Phases		2								1	1	
Permitted Phases		07.5										
Actuated Green, G (s)		27.5									15.5	
Effective Green, g (s)		27.0									15.0	
Actuated g/C Ratio		0.54									0.30	
Clearance Time (s)		3.5				- 1		a takan engawas			3.5	500000000000000
Lane Grp Cap (vph)		3294									1504	
v/s Ratio Prot		c0.24									c0.16	
v/s Ratio Perm v/c Ratio		0.45									0.53	
		0.45 7.0									14.6	
Uniform Delay, d1		1.00									1.17	
Progression Factor Incremental Delay, d2		0.5									0.1	
Delay (s)		7.5									17.2	
Level of Service		7.5 A	na Pantini								17.2 B	
Approach Delay (s)		7.5			0.0			0.0			17.2	
Approach LOS		7.0 A			Α			Α			17.2 B	
Intersection Summary					•						-	
HCM Average Control D	elay		10.9		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.48			received College						
Actuated Cycle Length	-		50.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity Ut			47.3%			el of Se			Α			
Analysis Period (min)			15									
c Critical Lane Group												

Page 2



S. W. L.	-	^	
Phase Number	ODTI	<u>2</u>	
Movement	SBTL	EBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	19	31	
[전 기계 : 기계 : 기계 : 10 기계 : 기계 : 10 기계		62.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s)	0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	22.5	41.5	
End Time (s)	41.5	22.5	
Yield/Force Off (s)	38	19	
Yield/Force Off 170(s)	30	11	
Local Start Time (s)	3.5	22.5	
Local Yield (s)	19	0	
Local Yield 170(s)	11	42	

Intersection Summary

Cycle Length 50 Control Type Pretimed Natural Cycle 50

Offset: 19 (38%), Referenced to phase 2:EBT, Start of Yellow

Splits and Phases: 1: Q St & 3rd St

№ ø1	→ ø2
19 s	31 s

	۶	-	*	•	4-	*	4	†	-	1	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተጉ						†	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	4.0
Lane Util. Factor					0.91						0.91	0.91
Frpb, ped/bikes					1.00 1.00						0.97 1.00	0.93 1.00
Flpb, ped/bikes Frt					1.00						0.93	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					4901						2900	1205
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					4901						2900	1205
Volume (vph)	0	0	0	170	2710	0	0	0	0	0	674	1155
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	170	2710	0	0	0	0	0	674	1155
RTOR Reduction (vph)	0	0	0	0	14	0	0	0	0	0	1	1
Lane Group Flow (vph)	0	0	0	0	2866	0	0	0	0	0	1250	577
Confl. Peds. (#/hr)				60								60
Parking (#/hr)				0	0						0	0
Turn Type				Split								Perm
Protected Phases				2	2						1	
Permitted Phases												1
Actuated Green, G (s)					27.5						15.5	15.5
Effective Green, g (s)					27.0						15.0	15.0
Actuated g/C Ratio					0.54						0.30	0.30
Clearance Time (s)					3.5	····					3.5	3.5
Lane Grp Cap (vph)					2647						870	362
v/s Ratio Prot					c0.58						0.43	
v/s Ratio Perm					4.00						4.50.1	c0.48
v/c Ratio					1.08						1.53dr	1.59
Uniform Delay, d1					11.5						17.5	17.5
Progression Factor					1.00						1.00	1.00
Incremental Delay, d2					44.7						203.3	280.4
Delay (s) Level of Service					56.2 E						220.8 F	297.9 F
Approach Delay (s)		0.0			56.2			0.0			245.1	an field
Approach LOS		Α			50.2 E			0.0 A			245.1 F	
				PLOTE LINE TO VENT MENT OF STUDIES	-							
Intersection Summary	\ \ 1		400.0		1014							
HCM Volume to Capaci			129.6		HCM Le	vel of S	ervice		F			
HCM Volume to Capaci			1.27 50.0	5 (4 (3 (4 (4 (4 (4 (4 (4 (4 (4 (4 (4 (4 (4 (4	Cum of	loot time -	\ (a)		0.0			
Actuated Cycle Length (Intersection Capacity Ut		nin (History)	114.6%			lost time el of Se			8.0 H			
Analysis Period (min)	unzauon	l Hija jifetaa	114.0%	i Mariji d	ICO Lev	ei 0i 36	IVICE		П			
dr Defacto Right Lane	Reco	de with		h lane s	as a rich	nt lane						
c Critical Lane Group	. 11600	GC WILLI	, aloug		as a rigi	it iai ic.						
5 Childa Lanc Group												



Phase Number	1	2	
Movement	SBT	WBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	19	31	
Maximum Split (%)	38.0%	62.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	40.5	9.5	
End Time (s)	9.5	40.5	
Yield/Force Off (s)	6	37	
Yield/Force Off 170(s)	48	29	
Local Start Time (s)	3.5	22.5	
Local Yield (s)	19	0	
Local Yield 170(s)	11	42	
	temania litaria mendela	1609476936912269226923492	

Cycle Length 50
Control Type Pretimed
Natural Cycle 100

Offset: 37 (74%), Referenced to phase 2:WBTL, Start of Yellow

Splits and Phases: 2: P St & 3rd St

₽ ø1	₹ ø2
19 s	31 s

3/16/2005
Fehr & Peers Associates, Inc.

		*	-	↓	\	\			
Movement	EBT	EBR	SBL	SBT	SEL	SER			
Lane Configurations	ĵ.			ተተኩ	<u> </u>				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Total Lost time (s)	4.0			4.0	4.0				
Lane Util. Factor	1.00			0.91	0.97				
Frpb, ped/bikes	0.98			1.00	1.00				
Flpb, ped/bikes	1.00			1.00	1.00				
Frt	0.98			1.00	0.91				
Flt Protected	1.00			0.99	0.98				
Satd. Flow (prot)	1780			5053	3234				
Flt Permitted	1.00			0.99	0.98				
Satd. Flow (perm)	1780			5053	3234				
Volume (vph)	90	20	196	1349	320	430		Maria ang a	Sept. 19
	1.00	1.00	1.00	1.00	1.00	1.00			
Peak-hour factor, PHF	90		196	1349					
Adj. Flow (vph)		20			320	430			
RTOR Reduction (vph)	12	0	0	27	750	0			
Lane Group Flow (vph)	98	0	0	1518	750	0			
Confl. Peds. (#/hr)		60	60						
Parking (#/hr)			0						ta trigal
Turn Type			Split						
Protected Phases	6		4	4	5				
Permitted Phases									
Actuated Green, G (s)	12.5			32.5	14.5				
Effective Green, g (s)	12.0			32.0	14.0				
Actuated g/C Ratio	0.17			0.46	0.20				
Clearance Time (s)	3.5			3.5	3.5				
Lane Grp Cap (vph)	305			2310	647				
v/s Ratio Prot	c0.06			c0.30	c0.23				
v/s Ratio Perm									
v/c Ratio	0.32			0.66	1.34dr				
Uniform Delay, d1	25.4			14.7	28.0				
Progression Factor	1.00			0.93	1.00				
Incremental Delay, d2	2.8			0.1	88.1				
Delay (s)	28.2			13.9	116.1				
Level of Service	C			В	F				
Approach Delay (s)	28.2			13.9	116.1				
Approach LOS	С			В	F				
Intersection Summary									
HCM Average Control D	Delav		46.4		HCM Le	vel of Service	D		
HCM Volume to Capaci			0.71						
Actuated Cycle Length			70.0		Sum of I	ost time (s)	12.0		
Intersection Capacity U			73.2%			el of Service	12.0 D		
Analysis Period (min)	ZaliUI I		15.276		IOO LEV	CI OI OGIVICE			
dr Defacto Right Lane	. Rocc	de with		h lane r	ae a rich	ıt lane			
c Critical Lane Group	. 11600	ae wilii	i iiioug	ii ialie e	as a rigil	it ialic.			
o Ontical Latte Gloup									

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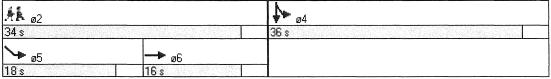
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2	4	5	6	
Ped	SBTL	SEL	EBT	
		Lead	Lag	
Max	Max	Max	Max	
34	36	18	16	
18.6%	51.4%	25.7%	22.9%	
34	36	7.5	16	
3.5	3.5	3.5	3.5	
0	0	0	0	
4	4	4	4	
3			3	
3	3	3	3	
0	0	0	0	
0	1	0	0	
19.5	23.5		4.5	
11	9		8	
Yes	Yes	Yes	Yes	
Yes	Yes	Yes	Yes	
12.5	46.5	12.5	30.5	
46.5	12.5	30.5	46.5	
43	9	27	43	
32	0	27	35	
3.5	37.5	3.5	21.5	
23	61	18	26	
	Ped Max 34 18.6% 34 3.5 0 4 3 0 19.5 11 Yes Yes 12.5 46.5 43 32 3.5 34	Ped SBTL Max Max 34 36 18.6% 51.4% 34 36 3.5 3.5 0 0 4 4 3 3 3 0 0 0 0 0 19.5 23.5 11 9 Yes Yes Yes Yes 12.5 46.5 46.5 12.5 43 9 32 0 3.5 37.5 34 0	Ped SBTL Lead Max Max Max 34 36 18 18.6% 51.4% 25.7% 34 36 7.5 3.5 3.5 3.5 0 0 0 4 4 4 3 3 3 0 0 0 19.5 23.5 11 9 Yes Yes Yes Yes Yes 12.5 46.5 12.5 46.5 12.5 30.5 43 9 27 32 0 27 3.5 37.5 3.5 34 0 18	Ped SBTL SEL Lead EBT Lead Max Max Max Max 34 36 18 16 18.6% 51.4% 25.7% 22.9% 34 36 7.5 16 3.5 3.5 3.5 3.5 0 0 0 0 4 4 4 4 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4 4 3 3 3 3 3 3 3 4 9 4.5 45 4.5 4.5 45 4.5 4.5 46.5

Cycle Length 70
Control Type Pretimed
Natural Cycle 75

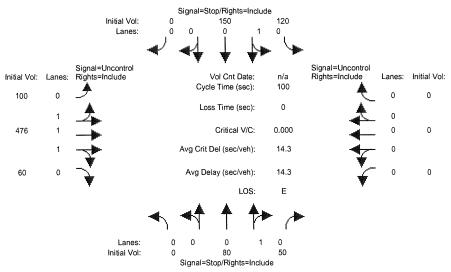
Offset: 9 (13%), Referenced to phase 4:SBTL, Start of Yellow

Splits and Phases: 3: N St & 3rd St



Level Of Service Computation Report 2000 HCM Unsignalized (Future Volume Alternative) 2025+Project PM

Intersection #4: N St./4th St.



Street Name:			4th				N St						
Approach:	Nor	th Bo	ound	Sou	ith Bo	ound	Εá	ast Bo	ound		st Bo		
Movement:	L -	- T	- R	L -	- T	- R	L -	- T	- R	Г -	· T	- R	
Volume Module	∋:												
Base Vol:	0	80	5.0	120	150	0	100	476	60	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	80	50	120	150	0	100	476	60	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:		80	50	120	150	0	100	476	60	0	0	0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Volume:	0	80	50	120	150	0	100	476	60	0	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Final Vol.:	0	80	50	120	150	0	100	476	60	0	0	0	
Critical Gap	Modu:	le:											
Critical Gp:	XXXXX	6.5				XXXXX		XXXX	XXXXX	XXXXX	XXXX	XXXXX	
FollowUpTim:	XXXXX	4.0	3.3	3.5	4.0	XXXXX	2.2	XXXX	XXXXX	XXXXX	XXXX	XXXXX	
Capacity Mod	ule:												
Cnflict Vol:	XXXX	721	189	414	751	XXXXX	15	XXXX	XXXXX	XXXX	XXXX	XXXXX	
Potent Cap.:	XXXX	356	858	552	342	XXXXX	1616	XXXX	XXXXX	XXXX	XXXX	XXXXX	
Move Cap.:	XXXX	327	858	396	314	XXXXX	1596	XXXX	XXXXX	XXXX	XXXX	XXXXX	
Volume/Cap:	XXXX	0.24	0.06	0.30	0.48	XXXX	0.06	XXXX	XXXX	XXXX	XXXX	XXXX	
Level Of Ser	vice I	Module	e:										
Queue:	XXXXX	XXXX	XXXXX	XXXXX	XXXX	XXXXX	0.2	XXXX	XXXXX	XXXXX	XXXX	XXXXX	
Stopped Del:	XXXXX	XXXX	XXXXX	XXXXX	XXXX	XXXXX	7.4	XXXX	XXXXX	XXXXX	XXXX	XXXXX	
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*	
Movement:	LT	- LTR	- RT	LT ·	- LTR	- RT	$_{ m LT}$	- LTR	- RT	LT	- LTR	- RT	
Shared Cap.:	XXXX	XXXX	429	346	XXXX	XXXXX	XXXX	XXXX	XXXXX	XXXX	XXXX	XXXXX	
SharedQueue:	XXXXX	XXXX	1.3	6.4	XXXX	XXXXX	0.2	XXXX	XXXXX	XXXXX	XXXX	XXXXX	
Shrd StpDel:	XXXXX	XXXX	17.0	44.0	XXXX	XXXXX	7.4	XXXX	XXXXX	XXXXX	XXXX	XXXXX	
Shared LOS:	*	*	С	Ε	*	*	A	*	*	*	*	*	
ApproachDel:		17.0			44.0		X	xxxxx		X	xxxxx		
ApproachLOS:		С			E			*			*		
-													

	<i>></i>		*	*	4	1	1	†	-	1	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተኩ		***************************************		***************************************		ተተጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.97				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5050						4902				
FIt Permitted		0.99						1.00				
Satd. Flow (perm)		5050						4902				
Volume (vph)	90	556	0	0	0	0	0	1143	250	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	90	556	0	0	0	0	0	1143	250	0	0	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	50	0	0	0	0
Lane Group Flow (vph)	0	628	Ō	0	0	0	Ö	1343	Ō	0	Ō	Ō
Confl. Peds. (#/hr)	60	9-0			an en en Fa		te este est		60			
Parking (#/hr)	0		0						0			
Turn Type	Split		9									<u> </u>
Protected Phases	1	1						2				
Permitted Phases	a de Bi	A 544 Min										
Actuated Green, G (s)		31.5						31.5				
Effective Green, g (s)		31.0						31.0				
Actuated g/C Ratio		0.44						0.44				
Clearance Time (s)		3.5						3.5				
Lane Grp Cap (vph)		2236						2171				
v/s Ratio Prot		c0.12						c0.27				
v/s Ratio Perm		00.12						00.27				
v/c Ratio		0.28						0.62				
Uniform Delay, d1		12.4						15.0				
Progression Factor		1.40						1.00				
Incremental Delay, d2		0.2						1.3				
Delay (s)		17.6						16.3				
Level of Service		В						В				
Approach Delay (s)		17.6			0.0			16.3			0.0	
Approach LOS		17.0 B			Α			В			Α.	
7. • • • • • • • • • • • • • • • • • • •							Amount Malayerana, Amount of the Amount of t		TO LOCAL THE SERVICE AND			ner feddirfressfedalae for appointed
Intersection Summary												
HCM Average Control E			16.7		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.45									
Actuated Cycle Length (70.0			lost time			8.0			
Intersection Capacity Ut	tilization	1	47.7%		ICU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number		2 NDT	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize	San Albania	i Skeviciji	
Recall Mode	Max	Max	
Maximum Split (s)	35	35	
Maximum Split (%)	50.0%		
Minimum Split (s)	34.5	34.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	22	22	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	65.5	30.5	
End Time (s)	30.5	65.5	
Yield/Force Off (s)	27	62	
Yield/Force Off 170(s)		53	
Local Start Time (s)	38.5	3.5	
Local Yield (s)	0	35	
Local Yield 170(s)	61	26	
Intersection Summary			

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 27 (39%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 5: N St & 5th St

♣ ø1	↑ ø2
35 s	35 s

Lane Configurations 1		>	-	*	*	-	4	1	1	/	-	+	1
Ideal Flow (vphpl) 1900	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost time (s)	Lane Configurations			7. COLUMN 1. COL									
Lane Util. Factor 1.00 0.91 1.00 0.95 1.00 0.95 Frpb, ped/bikes 1.00 0.99 1.00 1.00 1.00 1.00 1.00 1.00	Ideal Flow (vphpl)			1900			1900	1900	1900	1900	1900		1900
Frpb, ped/bikes 1.00 0.99 1.00 1.00 1.00 1.00 1.00 0.93 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Total Lost time (s)												
Fipb, ped/bikes	Lane Util. Factor												
Frit	Frpb, ped/bikes												
Fit Protected													
Satd, Flow (prot) 1770 5015 1770 3521 1593 3274 Fit Permitted 0.95 1.00 0.95 1.00 0.95 1.00 Satd, Flow (perm) 1770 5015 1770 3521 1593 3274 Volume (vph) 123 713 40 367 745 27 0 0 184 1148 1148 Peak-hour factor, PHF 1.00 1.02	Frt												
Fit Permitted 0.95 1.00 0.95 1.00 0.95 1.00 0.95 1.00													
Satid. Flow (perm) 1770 5015 1770 3521 1593 3274	Satd. Flow (prot)										1593		
Volume (vph) 123 713 40 367 745 27 0 0 0 184 1148 1148 Peak-hour factor, PHF 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	FIt Permitted	0.95											
Peak-hour factor, PHF	Satd. Flow (perm)	1770	5015		1770	3521					1593	3274	
Adj. Flow (vph)	Volume (vph)	123	713	40	367	745	27	0	0	0	184	1148	1145
RTOR Reduction (vph) 0 9 0 0 4 0 0 0 0 0 1777 Cane Group Flow (vph) 123 744 0 367 768 0 0 0 0 184 2116 0 0 0 0 0 184 2116 0 0 0 0 0 0 184 2116 0 0 0 0 0 0 0 0 184 2116 0 0 0 0 0 0 0 0 0	Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Group Flow (vph) 123 744 0 367 768 0 0 0 0 184 2116 Confl. Peds. (#/hr) 60	Adj. Flow (vph)	123	713	40	367	745	27	0	0	0	184	1148	1145
Confl. Peds. (#/hr)	RTOR Reduction (vph)	0	9	0	0	4	0			0	0		0
Parking (#/hr)	Lane Group Flow (vph)	123	744	0	367	768	0	0	0	0	184	2116	0
Turn Type Prot Prot Split Protected Phases 1 6 5 2 4 4 Permitted Phases Actuated Green, G (s) 6.5 12.5 12.5 18.5 33.0 33.0 Effective Green, g (s) 6.0 12.0 12.0 18.0 34.0 34.0 34.0 Actuated g/C Ratio 0.09 0.17 0.17 0.26 0.49 0.49 0.49 Clearance Time (s) 3.5 3.5 3.5 3.5 5.0 5.0 Lane Grp Cap (vph) 152 860 303 905 774 1590 V/s Ratio Prot 0.07 0.15 c0.21 c0.22 0.12 c0.65 V/s Ratio Prot 0.81 0.86 1.21 0.85 0.24 1.33 Uniform Delay, d1 31.4 28.2 29.0 24.7 10.5 18.0 Progression Factor 1.00 1.03 0.75 0.89 0.95 Incremental Dela	Confl. Peds. (#/hr)			60									
Protected Phases 1 6 5 2 4 4 4 Permitted Phases Actuated Green, G (s) 6.5 12.5 12.5 18.5 33.0 33.0 Effective Green, g (s) 6.0 12.0 12.0 18.0 34.0 34.0 Actuated g/C Ratio 0.09 0.17 0.17 0.26 0.49 0.49 Clearance Time (s) 3.5 3.5 3.5 3.5 5.0 5.0 Lane Grp Cap (vph) 152 860 303 905 774 1590 v/s Ratio Prot 0.07 0.15 c0.21 c0.22 0.12 c0.65 v/s Ratio Perm v/c Ratio 0.81 0.86 1.21 0.85 0.24 1.33 Uniform Delay, d1 31.4 28.2 29.0 24.7 10.5 18.0 Progression Factor 1.00 1.00 0.83 0.75 0.89 0.95 Incremental Delay, d2 35.5 11.3 119.8 9.0 0.1 149.2 Delay (s) 67.0 39.5 143.8 27.6 9.4 166.3 Level of Service E D F C A F Approach Delay (s) 43.4 65.1 0.0 1.04 154.7 Approach LOS D E A F Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 113.8% ICU Level of Service H Analysis Period (min) 15	Parking (#/hr)										0		
Protected Phases 1 6 5 2 4 4 4 Permitted Phases Actuated Green, G (s) 6.5 12.5 12.5 18.5 33.0 33.0 Effective Green, g (s) 6.0 12.0 12.0 18.0 34.0 34.0 Actuated g/C Ratio 0.09 0.17 0.17 0.26 0.49 0.49 Clearance Time (s) 3.5 3.5 3.5 3.5 3.5 5.0 5.0 Lane Grp Cap (vph) 152 860 303 905 774 1590 v/s Ratio Prot 0.07 0.15 c0.21 c0.22 0.12 c0.65 v/s Ratio Perm v/c Ratio 0.81 0.86 1.21 0.85 0.24 1.33 Uniform Delay, d1 31.4 28.2 29.0 24.7 10.5 18.0 Progression Factor 1.00 1.00 0.83 0.75 0.89 0.95 Incremental Delay, d2 35.5 11.3 119.8 9.0 0.1 149.2 Delay (s) 67.0 39.5 143.8 27.6 9.4 166.3 Level of Service E D F C A F Approach Delay (s) 43.4 65.1 0.0 154.7 Approach LOS D E A F Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 113.8% ICU Level of Service H Analysis Period (min) 15	Turn Type	Prot			Prot						Split		
Actuated Green, G (s) 6.5 12.5 12.5 18.5 33.0 33.0 Effective Green, g (s) 6.0 12.0 12.0 18.0 34.0 34.0 Actuated g/C Ratio 0.09 0.17 0.17 0.26 0.49 0.49 Clearance Time (s) 3.5 3.5 3.5 3.5 5.0 5.0 5.0 Lane Grp Cap (vph) 152 860 303 905 774 1590 V/s Ratio Prot 0.07 0.15 c0.21 c0.22 0.12 c0.65 V/s Ratio Perm V/c Ratio 0.81 0.86 1.21 0.85 0.24 1.33 Uniform Delay, d1 31.4 28.2 29.0 24.7 10.5 18.0 Progression Factor 1.00 1.00 0.83 0.75 0.89 0.95 Incremental Delay, d2 35.5 11.3 119.8 9.0 0.1 149.2 Delay (s) 67.0 39.5 143.8 27.6 9.4 166.3 Level of Service E D F C A F Approach Delay (s) 43.4 65.1 0.0 154.7 Approach LOS D E A F Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization Analysis Period (min) 15		1	6		5	2					4	4	
Effective Green, g (s) 6.0 12.0 12.0 18.0 34.0 34.0 Actuated g/C Ratio 0.09 0.17 0.17 0.26 0.49 0.49 Clearance Time (s) 3.5 3.5 3.5 3.5 5.0 5.0 Eane Grp Cap (vph) 152 860 303 905 774 1590 v/s Ratio Prot 0.07 0.15 c0.21 c0.22 0.12 c0.65 v/s Ratio Perm v/c Ratio 0.81 0.86 1.21 0.85 0.24 1.33 Uniform Delay, d1 31.4 28.2 29.0 24.7 10.5 18.0 Progression Factor 1.00 1.00 0.83 0.75 0.89 0.95 Incremental Delay, d2 35.5 11.3 119.8 9.0 0.1 149.2 Delay (s) 67.0 39.5 143.8 27.6 9.4 166.3 Level of Service E D F C A F Approach Delay (s) 43.4 65.1 0.0 154.7 Approach LOS D E A F C A F HCM Average Control Delay HCM Average Control Delay HCM Average Control Delay 110.2 HCM Level of Service F HCM Volume to Capacity ratio Actuated Cycle Length (s) 113.8% ICU Level of Service H Analysis Period (min) 15	Permitted Phases												
Actuated g/C Ratio 0.09 0.17 0.17 0.26 0.49 0.49 Clearance Time (s) 3.5 3.5 3.5 3.5 5.0 Lane Grp Cap (vph) 152 860 303 905 774 1590 v/s Ratio Prot 0.07 0.15 c0.21 c0.22 0.12 c0.65 v/s Ratio Perm v/c Ratio	Actuated Green, G (s)	6.5	12.5		12.5	18.5					33.0	33.0	
Clearance Time (s) 3.5 3.0	Effective Green, g (s)	6.0	12.0		12.0	18.0					34.0	34.0	
Lane Grp Cap (vph) 152 860 303 905 774 1590 v/s Ratio Prot 0.07 0.15 c0.21 c0.22 0.12 c0.65 v/s Ratio Perm v/c Ratio 0.81 0.86 1.21 0.85 0.24 1.33 Uniform Delay, d1 31.4 28.2 29.0 24.7 10.5 18.0 Progression Factor 1.00 1.00 0.83 0.75 0.89 0.95 Incremental Delay, d2 35.5 11.3 119.8 9.0 0.1 149.2 Delay (s) 67.0 39.5 143.8 27.6 9.4 166.3 Level of Service E D F C A F Approach LOS D E A F Intersection Summary 1.16 Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization Analysis Period (min) 15 ICU Level of Service H	Actuated g/C Ratio	0.09	0.17		0.17	0.26					0.49	0.49	
v/s Ratio Prot 0.07 0.15 c0.21 c0.22 0.12 c0.65 v/s Ratio Perm v/c Ratio 0.81 0.86 1.21 0.85 0.24 1.33 Uniform Delay, d1 31.4 28.2 29.0 24.7 10.5 18.0 Progression Factor 1.00 1.00 0.83 0.75 0.89 0.95 Incremental Delay, d2 35.5 11.3 119.8 9.0 0.1 149.2 Delay (s) 67.0 39.5 143.8 27.6 9.4 166.3 Level of Service E D F C A F Approach LOS D E A F F Intersection Summary 110.2 HCM Level of Service F HCM Volume to Capacity ratio 1.16 A E Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 113.8% ICU Level of Service H	Clearance Time (s)	3.5	3.5		3.5	3.5					5.0	5.0	
v/s Ratio Perm v/c Ratio 0.81 0.86 1.21 0.85 0.24 1.33 Uniform Delay, d1 31.4 28.2 29.0 24.7 10.5 18.0 Progression Factor 1.00 1.00 0.83 0.75 0.89 0.95 Incremental Delay, d2 35.5 11.3 119.8 9.0 0.1 149.2 Delay (s) 67.0 39.5 143.8 27.6 9.4 166.3 Level of Service E D F C A F Approach Delay (s) 43.4 65.1 0.0 154.7 Approach LOS D E A F Intersection Summary HCM Volume to Capacity ratio 1.16 Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization Analysis Period (min) 113.8% ICU Level of Service H	Lane Grp Cap (vph)	152	860		303	905					774	1590	
V/c Ratio 0.81 0.86 1.21 0.85 0.24 1.33 Uniform Delay, d1 31.4 28.2 29.0 24.7 10.5 18.0 Progression Factor 1.00 1.00 0.83 0.75 0.89 0.95 Incremental Delay, d2 35.5 11.3 119.8 9.0 0.1 149.2 Delay (s) 67.0 39.5 143.8 27.6 9.4 166.3 Level of Service E D F C A F Approach Delay (s) 43.4 65.1 0.0 154.7 Approach LOS D E A F Intersection Summary F C A F HCM Volume to Capacity ratio 1.16 Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization Analysis Period (min) 15 ICU Level of Service H	v/s Ratio Prot	0.07	0.15		c0.21	c0.22					0.12	c0.65	
Uniform Delay, d1 31.4 28.2 29.0 24.7 10.5 18.0 Progression Factor 1.00 1.00 0.83 0.75 0.89 0.95 Incremental Delay, d2 35.5 11.3 119.8 9.0 0.1 149.2 Delay (s) 67.0 39.5 143.8 27.6 9.4 166.3 Level of Service E D F C A F Approach Delay (s) 43.4 65.1 0.0 154.7 Approach LOS D E A F Intersection Summary F C F HCM Volume to Capacity ratio 1.16 Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization Analysis Period (min) 113.8% ICU Level of Service H	v/s Ratio Perm												
Progression Factor 1.00 1.00 0.83 0.75 0.89 0.95 Incremental Delay, d2 35.5 11.3 119.8 9.0 0.1 149.2 Delay (s) 67.0 39.5 143.8 27.6 9.4 166.3 Level of Service E D F C A F Approach Delay (s) 43.4 65.1 0.0 154.7 Approach LOS D E A F Intersection Summary F C F HCM Volume to Capacity ratio 1.16 Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization Analysis Period (min) 113.8% ICU Level of Service H	v/c Ratio	0.81	0.86		1.21	0.85					0.24	1.33	
Incremental Delay, d2 35.5 11.3 119.8 9.0 0.1 149.2	Uniform Delay, d1	31.4	28.2		29.0	24.7					10.5	18.0	
Delay (s) 67.0 39.5 143.8 27.6 9.4 166.3 Level of Service E D F C A F Approach Delay (s) 43.4 65.1 0.0 154.7 Approach LOS D E A F Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio 1.16 1.16 Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization Analysis Period (min) 113.8% ICU Level of Service H	Progression Factor	1.00	1.00		0.83	0.75					0.89	0.95	
Level of Service E D F C A F Approach Delay (s) 43.4 65.1 0.0 154.7 Approach LOS D E A F Intersection Summary HCM Average Control Delay 110.2 HCM Level of Service F HCM Volume to Capacity ratio 1.16 Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 113.8% ICU Level of Service H Analysis Period (min) 15	Incremental Delay, d2	35.5	11.3		119.8	9.0					0.1	149.2	
Approach Delay (s) 43.4 65.1 0.0 154.7 Approach LOS D E A F Intersection Summary HCM Average Control Delay 110.2 HCM Level of Service F HCM Volume to Capacity ratio 1.16 Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 113.8% ICU Level of Service H Analysis Period (min) 15	Delay (s)	67.0	39.5		143.8	27.6					9.4	166.3	
Approach LOS D E A F Intersection Summary HCM Average Control Delay 110.2 HCM Level of Service F HCM Volume to Capacity ratio 1.16 Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 113.8% ICU Level of Service H Analysis Period (min) 15	Level of Service	Е	D		F	С					Α	F	
Intersection Summary HCM Average Control Delay HCM Volume to Capacity ratio Actuated Cycle Length (s) Intersection Capacity Utilization Analysis Period (min) 110.2 HCM Level of Service F Sum of lost time (s) 1.00 1.10 8.0 ICU Level of Service H	Approach Delay (s)		43.4			65.1			0.0			154.7	
HCM Average Control Delay HCM Level of Service F HCM Volume to Capacity ratio Actuated Cycle Length (s) Intersection Capacity Utilization Analysis Period (min) 110.2 HCM Level of Service F Sum of lost time (s) 113.8% ICU Level of Service H Analysis Period (min)	Approach LOS		D			E			Α			, i j	
HCM Volume to Capacity ratio Actuated Cycle Length (s) Intersection Capacity Utilization Analysis Period (min) 1.16 Sum of lost time (s) 8.0 ICU Level of Service H	Intersection Summary												
Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0 Intersection Capacity Utilization 113.8% ICU Level of Service H Analysis Period (min) 15	HCM Average Control D	Delay		110.2		HCM Le	vel of S	ervice		F			
Intersection Capacity Utilization 113.8% ICU Level of Service H Analysis Period (min) 15	HCM Volume to Capaci	ty ratio		1.16									
Analysis Period (min) 15	Actuated Cycle Length	(s)		70.0		Sum of	lost time	e (s)		8.0			
Analysis Period (min) 15	Intersection Capacity Ut	tilizatior	1	113.8%		CU Lev	el of Se	rvice		Н			
c Critical Lane Group				15									
	c Critical Lane Group												

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Phase Number	1	2	4	5	6	
Movement	EBL	WBT	SBTL	WBL	EBT	
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max	Max	
Maximum Split (s)	10	22	38	16	16	
Maximum Split (%)	14.3%	31.4%	54.3%	22.9%	22.9%	
Minimum Split (s)	8	22	38	7.5	16	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	1.5	0	0	
Minimum Initial (s)	4	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	3	
Minimum Gap (s)	3	3	3	3	3	
Time Before Reduce (s) 0	0	0	0	0	
Time To Reduce (s)	0	0	0	0	0	
Walk Time (s)		6.5	15		0.5	
Flash Dont Walk (s)		12	18		12	
Dual Entry	No	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	Yes	
Start Time (s)	10.5	20.5	42.5	10.5	26.5	
End Time (s)	20.5	42.5	10.5	26.5	42.5	
Yield/Force Off (s)	17	39	5.5	23	39	
Yield/Force Off 170(s)	17	27	57.5	23	27	
Local Start Time (s)	57.5	67.5	19.5	57.5	3.5	
Local Yield (s)	64	16	52.5	0	16	
Local Yield 170(s)	64	4	34.5	0	4	

Cycle Length 70
Control Type Pretimed
Natural Cycle 100

Offset: 23 (33%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow

Splits and Phases: 6: Capitol Mall & 3rd St

ø1	ø2	→ ø4
10 s	22 s	38 s
€ ø5	→ ø6	
16 s	16 s	

	≯		*	1	4	*	1	†	*	1	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	^	7		ብትቡ			क			43	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95	1.00		0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.87		0.99			0.99			0.97	
Flpb, ped/bikes	0.98	1.00	1.00		1.00			0.99			0.99	
Frt	1.00	1.00	0.85		0.99			0.98			0.96	
Flt Protected	0.95	1.00	1.00		1.00			0.99			0.99	
Satd. Flow (prot)	1729	3539	1380		4991			1584			1524	
Flt Permitted	0.23	1.00	1.00		0.93			0.82			0.90	
Satd. Flow (perm)	416	3539	1380		4662			1318			1381	
Volume (vph)	137	719	40	10	967	67	70	130	30	69	150	102
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	137	719	40	10	967	67	70	130	30	69	150	102
RTOR Reduction (vph)	0	0	19	0	11	0	0	8	0	0	24	0
Lane Group Flow (vph)	137	719	21	0	1033	Ö	0	222	0	Ö	297	0
Confl. Peds. (#/hr)	60	113	60	60	1000	60	60	222	60	60	231	60
Parking (#/hr)	00		00	00		00	0	0	00	00	0	0
	Dawa		Deres	Danna					U		<u> </u>	U
Turn Type	Perm	2	Perm	Perm	2		Perm	1		Perm		
Protected Phases	2	2	2	2	2		A	4		1	4	
Permitted Phases	2	20.0	2	2	000		4	00 5		4	00 5	
Actuated Green, G (s)	38.0	38.0	38.0		38.0			23.5			23.5	
Effective Green, g (s)	37.5	37.5	37.5		37.5			24.5			24.5	
Actuated g/C Ratio	0.54	0.54	0.54		0.54			0.35			0.35	
Clearance Time (s)	3.5	3.5	3.5		3.5	44.354. D		5.0	supply made until the same	. 196 - 196 - 196 - 196 - 196 - 196 - 196 - 196 - 196 - 196 - 196 - 196 - 196 - 196 - 196 - 196 - 196 - 196 -	5.0	0.000
Lane Grp Cap (vph)	223	1896	739		2498			461			483	
v/s Ratio Prot		0.20									o en l'agresación	
v/s Ratio Perm	c0.33		0.02		0.22			0.17			c0.21	
v/c Ratio	0.61	0.38	0.03		0.41			0.48			0.61	
Uniform Delay, d1	11.2	9.5	7.7		9.7			17.8			18.8	
Progression Factor	2.11	2.24	4.30		0.21			0.80			1.00	
Incremental Delay, d2	8.1	0.4	0.0		0.5			3.4			5.5	
Delay (s)	31.8	21.6	33.0		2.5			17.6			24.4	
Level of Service	С	С	С		Α			В			С	
Approach Delay (s)		23.7			2.5			17.6			24.4	
Approach LOS		С			Α			В			C	
Intersection Summary												
HCM Average Control [14.3		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.61									
Actuated Cycle Length			70.0			lost time			8.0			
Intersection Capacity U	tilizatior	1	73.4%		ICU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	2	4	
Movement	EBWB	NBSB	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	41.5	28.5	
Maximum Split (%)	59.3%	40.7%	
Minimum Split (s)	22.5	20	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	•	0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	10	10	
Dual Entry	Yes	Yes	
Inhibit Max	Yes		
Start Time (s)	59		
End Time (s)	30.5		
Yield/Force Off (s)	27	54	
Yield/Force Off 170(s)	17		
Local Start Time (s)	32		
Local Yield (s)	0	27	
Local Yield 170(s)	60	17	
Intersection Summary			
Cycle Length			70

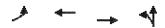
Cycle Length 70
Control Type Pretimed
Natural Cycle 50

Offset: 27 (39%), Referenced to phase 2:EBWB, Start of Yellow

Splits and Phases: 7: Capitol Mall & 4th St

ø2	↓↑ ₀4
41.5 s	28.5 s

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	757	ተተ	-		ተተቡ		إيواليو	ተተጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	0.97	0.95			0.91		0.97	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			4971		3433	4943				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			4971		3433	4943				
Volume (vph)	343	476	0	0	660	70	383	840	100	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	343	476	0	0	660	70	383	840	100	0	0	0
RTOR Reduction (vph)	0	0	0	0	19	0	0	21	0	0	0	0
Lane Group Flow (vph)	343	476	0	0	711	0	383	919	0	0	0	0
Confl. Peds. (#/hr)						60			60			
Turn Type	Prot						Split					
Protected Phases	1	6			2		8	8				
Permitted Phases												
Actuated Green, G (s)	14.5	36.5			18.5		25.0	25.0				
Effective Green, g (s)	14.0	36.0			18.0		26.0	26.0				
Actuated g/C Ratio	0.20	0.51			0.26		0.37	0.37				
Clearance Time (s)	3.5	3.5			3.5		5.0	5.0				
Lane Grp Cap (vph)	687	1820			1278		1275	1836				-
v/s Ratio Prot	c0.10	0.13			c0.14		0.11	c0.19				
v/s Ratio Perm												
v/c Ratio	0.50	0.26			0.56		0.30	0.50				
Uniform Delay, d1	24.9	9.5			22.5		15.6	17.0				
Progression Factor	0.84	0.25			1.00		0.44	0.40				
Incremental Delay, d2	2.4	0.3			1.8		0.5	0.8				
Delay (s)	23.2	2.7			24.3		7.4	7.6				
Level of Service	С	Α			С		Α	Α				
Approach Delay (s)		11.3			24.3			7.5			0.0	
Approach LOS		В			С			Α			Α	
Intersection Summary												
HCM Average Control D	,		12.9	ŀ	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci	ty ratio		0.52									
Actuated Cycle Length	(s)		70.0		Sum of	lost time	(s)		12.0			
Intersection Capacity Ut	tilization		53.5%			el of Sei			Α			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	6	8	
Movement	EBL	WBT	EBT	NBTL	
Lead/Lag	Lag	Lead			
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	18	22	40	30	
Maximum Split (%)	25.7%	31.4%	57.1%	42.9%	
Minimum Split (s)	7.5	20.5	20.5	17	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	0	1.5	
Minimum Initial (s)	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s)) 0	0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)		7	7	7	
Flash Dont Walk (s)		10	10	5	
Dual Entry	No	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	
Start Time (s)	20.5	68.5	68.5	38.5	
End Time (s)	38.5	20.5	38.5	68.5	
Yield/Force Off (s)	35	17	35	63.5	
Yield/Force Off 170(s)	35	7	25	58.5	
Local Start Time (s)	55.5	33.5	33.5	3.5	
Local Yield (s)	0	52	0	28.5	
Local Yield 170(s)	0	42	60	23.5	

Cycle Length 70
Control Type Pretimed
Natural Cycle 50

Offset: 35 (50%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow

Splits and Phases: 8: Capitol Mall & 5th St

4 ø2	01 همر	★ ø8
22 s	18 s	30 s
 ▶ ø6		
40 s		

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				ሻ	44	7	ሻ	†			↑ ↑	
	900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor				0.91	0.91	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			0.99	
Flt Protected				0.95	0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1610	3362	1583	1770	1863			3509	
Flt Permitted				0.95	0.99	1.00	0.15	1.00			1.00	
Satd. Flow (perm)				1610	3362	1583	276	1863			3509	
Volume (vph)	0	0	0	1123	1447	390	37	70	0	0	1329	80
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1123	1447	390	37	70	0	0	1329	80
RTOR Reduction (vph)	0	0	0	0	0	195	0	0	0	0	6	0
Lane Group Flow (vph)	0	0	0	828	1742	195	37	70	0	0	1403	0
Turn Type		un il describe de les altres de comment	C	ustom		custom c	ustom					-
Protected Phases											4	
Permitted Phases				2	2	2	8	8				
Actuated Green, G (s)				35.5	35.5	35.5	27.5	27.5			27.5	
Effective Green, g (s)				35.0	35.0	35.0	27.0	27.0			27.0	
Actuated g/C Ratio				0.50	0.50	0.50	0.39	0.39			0.39	
Clearance Time (s)				3.5	3.5	3.5	3.5	3.5			3.5	
Lane Grp Cap (vph)				805	1681	792	106	719			1353	
v/s Ratio Prot				1 7 7 T			· · · · · · · · · · · · · · · · · · ·				c0.40	
v/s Ratio Perm				0.51	c0.52	0.12	0.13	0.04				
v/c Ratio				1.03	1.04	0.25	0.35	0.10			1.04	
Uniform Delay, d1				17.5	17.5	10.0	15.3	13.7			21.5	
Progression Factor				0.80	0.80	0.83	0.77	0.57			1.00	
Incremental Delay, d2				38.4	31.4	0.7	4.9	0.1			34.5	
Delay (s)				52.4	45.4	9.0	16.7	7.9			56.0	
Level of Service				D	D	A	В	Α			Е	
Approach Delay (s)		0.0		· · · · · · · · · · · · · · · · · · ·	42.5			11.0			56.0	
Approach LOS		A			o			В			Е	
								_				
Intersection Summary					101				_			
HCM Average Control De			46.0		HCM Le	vel of S	ervice		D			
HCM Volume to Capacity			1.04				()		0.0			
Actuated Cycle Length (s			70.0		Sum of				8.0			
Intersection Capacity Utili	zatior	1	94.4%		CU Lev	el of Se	rvice		F			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	2	4	8	
Movement	WBTL	SBT	NBTL	
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	
Maximum Split (s)	39	31	31	
Maximum Split (%)	55.7%	44.3%	44.3%	
Minimum Split (s)	7.5	7.5	31	
Yellow Time (s)	3.5	3.5	3.5	
All-Red Time (s)	0	0	0	
Minimum Initial (s)	4	4	4	
Vehicle Extension (s)	3	3	3	
Minimum Gap (s)	3	3	3	
Time Before Reduce (s	s) 0	0	0	
Time To Reduce (s)	0	0	ta i aliana ta 1776	
Walk Time (s)			15.5	
Flash Dont Walk (s)			12	
Dual Entry	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	
Start Time (s)	62.5			
End Time (s)	31.5		62.5	
Yield/Force Off (s)	28	59	59	
Yield/Force Off 170(s)	28			
Local Start Time (s)	3.5			
Local Yield (s)	39		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Local Yield 170(s)	39	0	58	
		195 (1937) 1545 (A)		

Cycle Length 70
Control Type Pretimed
Natural Cycle 90

Offset: 59 (84%), Referenced to phase 4:SBT, Start of Yellow

Splits and Phases: 9: L St & 3rd St

ø2	₩ 04
39 s	31 s
	₀8 31 s

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					††† }		ሻ	ተተተ				77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		1.00	0.91				0.88
Frpb, ped/bikes					1.00		1.00	1.00				0.93
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
FIt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6289		1770	5085				2585
FIt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6289		1770	5085				2585
Volume (vph)	0	0	0	0	2066	220	440	813	0	0	0	240
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	2066	220	440	813	0	0	0	240
RTOR Reduction (vph)	0	0	0	0	12	0	6	0	0	0	0	8
Lane Group Flow (vph)	0	0	0	0	2274	0	434	813	0	0	0	232
Confl. Peds. (#/hr)						60	60					60
Turn Type							Split				C	custom
Protected Phases					2		1	1				
Permitted Phases												1
Actuated Green, G (s)					40.0		20.5	20.5				20.5
Effective Green, g (s)					41.0		21.0	21.0				21.0
Actuated g/C Ratio					0.59		0.30	0.30				0.30
Clearance Time (s)					5.0	****	4.5	4.5		\ <u>\</u>		4.5
Lane Grp Cap (vph)					3684		531	1526				776
v/s Ratio Prot					c0.36		c0.25	0.16				
v/s Ratio Perm					2.22							0.09
v/c Ratio					0.62		0.82	0.53				0.30
Uniform Delay, d1					9.4		22.7	20.4				18.8
Progression Factor					1.00		0.82	0.85				1.00
Incremental Delay, d2					0.8		11.7	1.2				1.0
Delay (s)					10.2		30.4	18.4				19.8
Level of Service		0.0			В		С	В			40.0	В
Approach Delay (s)		0.0			10.2			22.6			19.8	
Approach LOS		Α			В			С			В	
Intersection Summary												
HCM Volume to Consci			14.9		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.69 70.0		Sum of	loct time	\ (c)		0 0			
Actuated Cycle Length (e in the second				lost time el of Se			8.0			
Intersection Capacity Ut	ınzauon		84.9%		CO Lev	ei 0i 5e	rvice		E			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	NBTL	WBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	45	
Maximum Split (%)	35.7%		
Minimum Split (s)	25	45	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	1	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	11.5	31	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	37	62	
End Time (s)	62	37	
Yield/Force Off (s)	57.5	32	
Yield/Force Off 170(s)	48.5	23	
Local Start Time (s)	5	30	
Local Yield (s)	25.5		
Local Yield 170(s)	16.5	61	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 32 (46%), Referenced to phase 2:WBT, Start of Yellow

Splits and Phases: 10: L St & 5th St

4	♦ ø1	← ø2
2	5 s	45 s

	۶		*	†	<i>></i>	-	+	•	\	>	
Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	SEL2	SEL	SER	
Lane Configurations		414		7>	77	ሻ	44		<u> </u>		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0		4.0		
Lane Util. Factor		0.91		0.95	0.95	0.91	0.91		0.91		
Frpb, ped/bikes		0.99		1.00	1.00	1.00	1.00		0.97		
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00		1.00		
Frt		0.98		0.95	0.85	1.00	1.00		0.96		
Flt Protected		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (prot)		4920		1678	1504	1610	3365		6087		
Flt Permitted		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (perm)		4920		1678	1504	1610	3365		6087	-	
Volume (vph)	70	824	126	120	220	380	520	80	1686	653	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	70	824	126	120	220	380	520	80	1686	653	
RTOR Reduction (vph)	0	18	0	12	12	0	0	0	0	0	
Lane Group Flow (vph)	0	1002	0	171	145	290	610	0	2419	0	
Confl. Peds. (#/hr)			60							60	
Turn Type	Split				Perm	Split		Split			
Protected Phases	3	3		5		1	1	2	2		
Permitted Phases					5						
Actuated Green, G (s)		23.0		12.0	12.0	17.5	17.5		32.0		
Effective Green, g (s)		23.0		12.0	12.0	17.0	17.0		32.0		
Actuated g/C Ratio		0.23		0.12	0.12	0.17	0.17		0.32		
Clearance Time (s)		4.0		4.0	4.0	3.5	3.5		4.0		
Lane Grp Cap (vph)		1132		201	180	274	572		1948		
v/s Ratio Prot		c0.20		c0.10		0.18	c0.18		c0.40		
v/s Ratio Perm					0.10						
v/c Ratio		0.88		0.85	0.80	1.06	1.07		1.36dr		
Uniform Delay, d1		37.2		43.1	42.9	41.5	41.5		34.0		
Progression Factor		1.00		1.00	1.00	0.95	0.95		1.00		
Incremental Delay, d2		10.2		33.7	30.5	70.1	56.3		113.4		
Delay (s)		47.4		76.8	73.3	109.4	95.6		147.4		
Level of Service		D		E	Ε	F	F		F		
Approach Delay (s)		47.4		75.2			100.0		147.4		
Approach LOS		D		Е			F		F		
Intersection Summary											
HCM Average Control D	Delay		111.2	ł	HCM Le	vel of S	ervice		F		
HCM Volume to Capaci			1.05								
Actuated Cycle Length	(s)		100.0		Sum of I	ost time	e (s)		16.0		
Intersection Capacity Ut	tilization	r, Killia	98.4%		CU Lev	el of Se	rvice		F		
Analysis Period (min)			15								
dr Defacto Right Lane	. Reco	de with	1 thoug	h lane a	as a righ	it lane.					

c Critical Lane Group

	≯	4	4	Ť	ÁÀ	
Phase Number	1	2	3	5	6	
Movement	SBTL	SEL	EBTL	NBT	Ped	
Lead/Lag	Lead	Lag				
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max	Max	
Maximum Split (s)	21	36	27	16	73	
Maximum Split (%)	21.0%	36.0%	27.0%	16.0%	73.0%	
Minimum Split (s)	7.5	36	27	8	73	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0.5	0.5	0.5	0.5	
Minimum Initial (s)	4	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	3	
Minimum Gap (s)	3	3	3	3	3	
Time Before Reduce (s	s) 0	0	0	0	0	
Time To Reduce (s)	0	0	0	0	0	
Walk Time (s)		21	12		58	
Flash Dont Walk (s)		11	11		11	
Dual Entry	Yes	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	Yes	
Start Time (s)	85	6	58	42	85	
End Time (s)	6	42	85	58	58	
Yield/Force Off (s)	2.5	38	81	54	54	
Yield/Force Off 170(s)	2.5	27	70	54	43	

Local Start Time (s)

Local Yield 170(s)

Local Yield (s)

Cycle Length 100
Control Type Pretimed
Natural Cycle 130

Offset: 38 (38%), Referenced to phase 2:SEL, Start of Yellow

47

64.5

64.5

68

0

89

20

43

32

4

16

16

47

16

5

Splits and Phases: 11: J St & 3rd St

№ ø1	★ ø2	1 ø5	♣ ø3
21 s	36 s	16s	27.8
Á£ 06			
73 s			

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	♪		*	•	4	1	1	†	~	1	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	नाा	7"					ት ጮ	7			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.81	1.00					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.95					1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.96	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	6035	1498					3241	1441			
Flt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	6035	1498	-				3241	1441			
Volume (vph)	550	2330	240	0	0	0	0	513	520	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	550	2330	240	0	0	0	0	513	520	0	0	0
RTOR Reduction (vph)	128	0	139	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	422	2330	101	0	0	0	0	725	308	0	0	0
Confl. Peds. (#/hr)	60		60									
Parking (#/hr)	0						14					
Turn Type	Split		Perm						Perm			
Protected Phases	1	1						2				
Permitted Phases			1						2			
Actuated Green, G (s)	21.0	21.0	21.0					21.0	21.0			
Effective Green, g (s)	21.0	21.0	21.0					21.0	21.0			
Actuated g/C Ratio	0.42	0.42	0.42					0.42	0.42			
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Grp Cap (vph)	542	2535	629					1361	605			
v/s Ratio Prot	0.33	c0.39						c0.22				
v/s Ratio Perm			0.07						0.21			
v/c Ratio	0.78	0.92	0.16					0.53	0.51			
Uniform Delay, d1	12.5	13.7	9.0					10.8	10.7			
Progression Factor	0.73	0.80	0.58					1.00	1.00			
Incremental Delay, d2	1.0	0.7	0.0					1.5	3.0			
Delay (s)	10.2	11.6	5.3					12.3	13.7			
Level of Service	В	В	Α					В	В			
Approach Delay (s)		10.9			0.0			12.8			0.0	
Approach LOS		В			Α			В			Α	
Intersection Summary												
HCM Average Control D			11.4		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.73		_							
Actuated Cycle Length (50.0			lost time			8.0			
Intersection Capacity Ut	ilization	l Vitalia de la composición	85.1%		CU Lev	el of Se	rvice		E			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	25	25	
Yellow Time (s)	4	4	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	12	16	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	28	3	
End Time (s)	3	28	
Yield/Force Off (s)	49	24	
Yield/Force Off 170(s)	37	8	
Local Start Time (s)	29	4	
Local Yield (s)	0	25	
Local Yield 170(s)	38	9	

Cycle Length 50
Control Type Pretimed
Natural Cycle 60

Offset: 49 (98%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 12: J St & 5th St

♣ ø1	↑ ø2
25 s	25 s

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					tttp		N. J.	ተተ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		0.97	0.95				
Frpb, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6224		3433	3362				
FIt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)	No. 1 0	_			6224		3433	3362				
Volume (vph)	0	0	0	0	2940	60	500	563	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	2940	60	500	563	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	0	7	0	0	0	0	0
Lane Group Flow (vph)	0	U	U	U	2997	0 60	493	563	U	0	0	0
Confl. Peds. (#/hr) Parking (#/hr)					0	60		0				
Turn Type					U		Split	U				
Protected Phases							3piit 2	2				
Permitted Phases							4	4				
Actuated Green, G (s)					75.5		17.5	17.5				
Effective Green, g (s)					75.0		17.0	17.0				
Actuated g/C Ratio					0.75		0.17	0.17				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					4668		584	572				
v/s Ratio Prot					c0.48		0.14	c0.17				
v/s Ratio Perm												
v/c Ratio					0.64		0.84	0.98				
Uniform Delay, d1					6.0		40.2	41.4				
Progression Factor					1.00		1.05	1.05				
Incremental Delay, d2					0.7		10.4	28.4				
Delay (s)					6.7		52.5	71.6				
Level of Service					Α		D	E				
Approach Delay (s)		0.0			6.7			62.6			0.0	
Approach LOS		Α			Α			E			Α	
Intersection Summary												
HCM Average Control D	elay		21.3		HCM Le	vel of S	ervice		С			
HCM Volume to Capacit	y ratio		0.71									
Actuated Cycle Length (s)		100.0			lost time			8.0			
Intersection Capacity Ut	ilization	1	128.7%	I	CU Lev	el of Se	rvice		Н			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	WBT	NBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	79	21	
Maximum Split (%)	79.0%	21.0%	
Minimum Split (s)	79	21	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	근실 환경하다 하나 있는 전문 환경보다 그 얼마가 들었다. 그런 사람들은 사람들은 사람들이 살아 있다.
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	64.5	5.5	
Flash Dont Walk (s)	11	12	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	44.5	23.5	
End Time (s)	23.5	44.5	
Yield/Force Off (s)	20	41	
Yield/Force Off 170(s)	9	29	
Local Start Time (s)	24.5	3.5	
Local Yield (s)	0	21	
Local Yield 170(s)	89	9	

Cycle Length 100
Control Type Pretimed
Natural Cycle 100

Offset: 20 (20%), Referenced to phase 1:WBT, Start of Yellow

Splits and Phases: 13: I St & 5th St

-	44
ø1	~\ ø2
79 \$	21 s

	<u></u>	-	*	•	4	1	1	†	/	1	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተጉ		ሻ	ተተጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.91		0.86	0.86				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.97		1.00	1.00				
FIt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4860		1522	4806				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4860		1522	4806				***************************************
Volume (vph)	0	0	0	0	894	240	330	1730	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	894	240	330	1730	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	37	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1132	0	293	1730	0	0	0	0
Confl. Peds. (#/hr)						60						
Turn Type							Split					
Protected Phases					4		2	2				
Permitted Phases												
Actuated Green, G (s)					21.5		21.5	21.5				
Effective Green, g (s)					21.0		21.0	21.0				
Actuated g/C Ratio					0.42		0.42	0.42				
Clearance Time (s)					3.5		3.5	3.5	1000000			
Lane Grp Cap (vph)					2041		639	2019				
v/s Ratio Prot					c0.23		0.19	c0.36				
v/s Ratio Perm							2. 52.					
v/c Ratio					0.55		0.46	0.86				
Uniform Delay, d1					11.0		10.4	13.1				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					1.1		2.4	5.0				
Delay (s)					12.1		12.8	18.1				
Level of Service					В		В	В				
Approach Delay (s)		0.0			12.1			17.2			0.0	
Approach LOS		Α			В			В			Α	
Intersection Summary												
HCM Average Control [15.4	-	HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.71									
Actuated Cycle Length	` '.		50.0			lost time			8.0			
Intersection Capacity U	tilizatior	1 4 2	63.6%		CU Lev	el of Se	rvice		В			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	2	4	
Movement	NBTL	WBT	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)		50.0%	
Minimum Split (s)	21.5	21.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	10	10	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	48.5	23.5	
End Time (s)	23.5	48.5	
Yield/Force Off (s)	20	45	
Yield/Force Off 170(s)	12	37	
Local Start Time (s)	3.5	28.5	
Local Yield (s)	25	0	
Local Yield 170(s)	17	42	
	GERMANNE PERSON	New York (1985)	

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 45 (90%), Referenced to phase 4:WBT, Start of Yellow

Splits and Phases: 14: L St & 16th St

₩	←
25 s	25 s

301 Capitol Mall Near Term Plus Project MITIGATED - PM Peak

	•	>	7	1	4	*	1	†	-	1	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		††† }		- Committee of the Comm				- Annual Line Street College			ተተጉ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.99									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.97									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		6147									5005	
FIt Permitted		1.00									0.98	
Satd. Flow (perm)		6147									5005	
Volume (vph)	0	705	188	0	0	0	0	0	0	210	444	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	705	188	0	0	0	0	0	0	210	444	0
RTOR Reduction (vph)	0	72	0	0	0	0	0	0	0	0	139	0
Lane Group Flow (vph)	0	821	0	0	0	0	0	0	0	0	515	0
Confl. Peds. (#/hr)			60							60		
Parking (#/hr)										0		0
Turn Type	<u> </u>	in a second and a second as a second a	- Armania distribution	Miles de la companya			tam di minusum munusum manusum	elicazo de la financia como	*******************	Split		
Protected Phases		2								1	1	
Permitted Phases												
Actuated Green, G (s)		27.5									15.5	
Effective Green, g (s)		27.0									15.0	
Actuated g/C Ratio		0.54									0.30	
Clearance Time (s)		3.5									3.5	
Lane Grp Cap (vph)		3319									1502	
v/s Ratio Prot		c0.13									c0.10	
v/s Ratio Perm		000									000	
v/c Ratio		0.25									0.34	
Uniform Delay, d1		6.1									13.7	
Progression Factor		1.00									0.10	
Incremental Delay, d2		0.2									0.5	
Delay (s)		6.3									1.8	
Level of Service		Α									Α	
Approach Delay (s)		6.3			0.0			0.0			1.8	
Approach LOS		Α			A			A			Α	
Intersection Summary												
HCM Average Control D			4.4		HCM Le	vel of S	ervice		Α	HART.		
HCM Volume to Capaci			0.28									
Actuated Cycle Length			50.0			lost time			8.0			
Intersection Capacity Ut	tilization	1	42.0%		ICU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												

Phase Number	1	2	
Movement	SBTL	EBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	19	31	
Maximum Split (%)	38.0%	62.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	22.5	41.5	
End Time (s)	41.5	22.5	
Yield/Force Off (s)	38	19	
Yield/Force Off 170(s)		11	
Local Start Time (s)	3.5	22.5	
Local Yield (s)	19	0	
Local Yield 170(s)	11	42	

Cycle Length 50 Control Type Pretimed Natural Cycle 50

Offset: 19 (38%), Referenced to phase 2:EBT, Start of Yellow

Splits and Phases: 1: Q St & 3rd St

№ ø1	→ ø2
19 s	31 s

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	۶	-	*	•	4	1	1	†	~	-	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተጉ						ተተ	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	4.0
Lane Util. Factor					0.91						0.95	0.88
Frpb, ped/bikes					1.00						1.00	0.93
Flpb, ped/bikes					1.00						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					4903						3362	2595
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)				407	4903	anno estado e					3362	2595
Volume (vph)	1 00	1.00	0	137	2521	0	0	0	0	0	517	848
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	137	2521	0	0	0	0	0	517	848
RTOR Reduction (vph)	0	0 0	0	0	12	0	0	0	0	0	0	2
Lane Group Flow (vph) Confl. Peds. (#/hr)	0	U	U	0	2646	0	0	U	0	0	517	846
				60 0	0						0	60
Parking (#/hr) Turn Type				Split	U							Down
Protected Phases				Split 2	2						1	Perm
Permitted Phases				4								1
Actuated Green, G (s)					27.5						15.5	15.5
Effective Green, g (s)					27.0						15.0	15.0
Actuated g/C Ratio					0.54						0.30	0.30
Clearance Time (s)					3.5						3.5	3.5
Lane Grp Cap (vph)	w Nessel				2648						1009	779
v/s Ratio Prot					c0.54						0.15	,,,
v/s Ratio Perm					00.01						0.10	c0.33
v/c Ratio					1.00						0.51	1.09
Uniform Delay, d1					11.5						14.5	17.5
Progression Factor					1.00						1.00	1.00
Incremental Delay, d2					17.3						1.9	58.1
Delay (s)					28.8						16.3	75.6
Level of Service					С						В	Е
Approach Delay (s)		0.0			28.8			0.0			53.1	
Approach LOS		Α			С			Α			D	
Intersection Summary												
HCM Average Control D			37.1		HCM Le	vel of S	ervice		D			
HCM Volume to Capacit			1.03		en en en en		e e de con					
Actuated Cycle Length (50.0			lost time			8.0			
Intersection Capacity Ut	ilization	1	92.3%		CU Lev	el of Se	rvice		F			
Analysis Period (min)			15									
c Critical Lane Group												

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Phase Number	1	2	
Movement	SBT	WBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	19	31	
Maximum Split (%)	38.0%	62.0%	
Minimum Split (s)	19	31	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	7.5	19.5	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes		
Start Time (s)	13.5		
End Time (s)	32.5	13.5	
Yield/Force Off (s)	29	10	
Yield/Force Off 170(s)	21	2	
Local Start Time (s)	3.5	22.5	
Local Yield (s)	19	0	
Local Yield 170(s)	11	42	
Interpolition Cumman		E a salesanta e a la c	

Cycle Length 50
Control Type Pretimed
Natural Cycle 65

Offset: 10 (20%), Referenced to phase 2:WBTL, Start of Yellow

Splits and Phases: 2: P St & 3rd St

V Ø1	▼ ø2
19 s	31 s

Movement		_	*	-	‡	1	\	
Ideal Flow (vphpl)	Movement	EBT	EBR	SBL	SBT	SEL	SER	
Total Lost time (s)	Lane Configurations	f)			ተተቡ	KK		
Lane Util. Factor 1.00 0.91 0.97 Frpb, ped/bikes 0.98 1.00 1.00 Frpb, ped/bikes 1.00 1.00 1.00 Frt 0.97 1.00 0.91 Fit Protected 1.00 0.99 0.98 Satd. Flow (prot) 1777 5055 3224 Fit Permitted 1.00 0.99 0.98 Satd. Flow (perm) 1777 5055 3224 Volume (vph) 81 19 154 1138 154 232 Peak-hour factor, PHF 1.00 1.00 1.00 1.00 1.00 1.00 Adj. Flow (vph) 81 19 154 1138 154 232 RTOR Reduction (vph) 12 0 0 25 0 0 Lane Group Flow (vph) 88 0 0 1267 386 0 Confl. Peds. (#/hr) 0 50 Parking (#/hr) 0 5 Turn Type Split Protected Phases Actuated Green, G (s) 12.5 Scheit Green, G (s) 12.5 Scheit Green, G (s) 12.5 Scheit Green, G (s) 12.0 Actuated Green, G (s) 12.0 Actuated Green, G (s) 12.0 Actuated Green, G (s) 12.0 Scheit Green, G (s) 1	Ideal Flow (vphpl)	1900	1900	1900	1900		1900	
Frpb, ped/bikes	Total Lost time (s)	4.0			4.0	4.0		
Flpb, ped/bikes 1.00 1.00 1.00 Prt 0.97 1.00 0.91 Flt Protected 1.00 0.99 0.98 Satd. Flow (prot) 1777 5055 3224 Flt Permitted 1.00 0.99 0.98 Satd. Flow (perm) 1777 5055 3224 Flt Permitted 1.00 0.99 0.98 Satd. Flow (perm) 1777 5055 3224 Flt Permitted 1.00 0.99 0.98 Satd. Flow (perm) 1777 5055 3224 Flt Permitted 1.00 0.99 0.98 Satd. Flow (perm) 1777 5055 3224 Flt Permitted Post 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Lane Util. Factor	1.00			0.91	0.97		
Frit Protected 1.00 0.91 Fit Protected 1.00 0.99 0.98 Satd. Flow (prot) 1777 5055 3224 Fit Permitted 1.00 0.99 0.98 Satd. Flow (perm) 1777 5055 3224 Volume (vph) 81 19 154 1138 154 232 Peak-hour factor, PHF 1.00 1.00 1.00 1.00 1.00 Adj. Flow (vph) 81 19 154 1138 154 232 RTOR Reduction (vph) 12 0 0 25 0 0 Lane Group Flow (vph) 88 0 0 1267 386 0 Confl. Peds. (#/hr) 60 60 Parking (#/hr) 0 0 Turn Type Split Protected Phases Actuated Green, G (s) 12.5 32.5 14.5 Effective Green, g (s) 12.0 32.0 14.0 Actuated Green, G (s) 12.5 32.5 14.5 Effective Green, g (s) 12.0 32.0 14.0 Actuated Green, G (s) 12.5 32.5 14.5 Effective Green, g (s) 12.0 32.0 14.0 Actuated Green (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 305 2311 645 v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Perm v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Approach LOS C B C	Frpb, ped/bikes	0.98			1.00	1.00		
Fit Protected 1.00 0.99 0.98 Satd. Flow (prot) 1777 5055 3224 Fit Permitted 1.00 0.99 0.98 Satd. Flow (perm) 1777 5055 3224 Volume (vph) 81 19 154 1138 154 232 Peak-hour factor, PHF 1.00 1.00 1.00 1.00 1.00 Adj. Flow (vph) 81 19 154 1138 154 232 RTOR Reduction (vph) 12 0 0 25 0 0 Lane Group Flow (vph) 88 0 0 1267 386 0 Confl. Peds. (#/hr) 0 Turn Type Split Protected Phases Actuated Green, G (s) 12.5 32.5 14.5 Effective Green, g (s) 12.0 32.0 14.0 Actuated g/C Ratio 0.17 0.46 0.20 Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 305 2311 645 V/s Ratio Prot c0.05 0.05 V/s Ratio Prot v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Approach LOS C B B C	Flpb, ped/bikes	1.00			1.00	1.00		
Satd. Flow (prot) 1777 5055 3224 Fit Permitted 1.00 0.99 0.98 Satd. Flow (perm) 1777 5055 3224 Volume (vph) 81 19 154 1138 154 232 Peak-hour factor, PHF 1.00 1.00 1.00 1.00 1.00 1.00 Adj. Flow (vph) 81 19 154 1138 154 232 RTOR Reduction (vph) 12 0 0 25 0 0 Cane Group Flow (vph) 88 0 0 1267 386 0 Confi. Peds. (#/hr) 60 60 Parking (#/hr) 0 0 Turn Type Split Protected Phases Actuated Green, G (s) 12.5 32.5 14.5 Effective Green, g (s) 12.0 32.0 14.0 Actuated g/C Ratio 0.17 0.46 0.20 Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 305 2311 645 v/s Ratio Prot Delay (d) 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay (2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach LOS C B C	Frt	0.97			1.00	0.91		
Fit Permitted 1.00	Flt Protected	1.00			0.99	0.98		
Satd. Flow (perm) 1777 5055 3224 Volume (vph) 81 19 154 1138 154 232 Peak-hour factor, PHF 1.00 1.00 1.00 1.00 1.00 Adj. Flow (vph) 81 19 154 1138 154 232 RTOR Reduction (vph) 12 0 0 25 0 0 Lane Group Flow (vph) 88 0 0 1267 386 0 Confl. Peds. (#/hr) 60 60 60 60 60 60 Parking (#/hr) 0 0 1267 386 0 0 Turn Type Split Split 5 5 14.5 5 Permitted Phases 6 4 4 5 5 6 4 4 5 5 6 14.0 A 4 5 6 14.0 A 14.0 A 14.0 A 14.0 A 14.0	Satd. Flow (prot)	1777			5055	3224		
Volume (vph) 81 19 154 1138 154 232 Peak-hour factor, PHF 1.00 1.00 1.00 1.00 1.00 1.00 Adj. Flow (vph) 81 19 154 1138 154 232 RTOR Reduction (vph) 12 0 0 25 0 0 Lane Group Flow (vph) 88 0 0 1267 386 0 Confl. Peds. (#/hr) 60 60 60 60 60 Parking (#/hr) 0 0 1267 386 0 Turn Type Split 5 50 0	FIt Permitted	1.00			0.99	0.98		
Peak-hour factor, PHF 1.00	Satd. Flow (perm)	1777			5055	3224		
Peak-hour factor, PHF 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Adj. Flow (vph) 81 19 154 1138 154 232	Volume (vph)	81	19	154	1138	154	232	
Adj. Flow (vph) 81 19 154 1138 154 232 RTOR Reduction (vph) 12 0 0 25 0 0 Lane Group Flow (vph) 88 0 0 1267 386 0 Confl. Peds. (#/hr) 60 60 Parking (#/hr) 0 Turn Type Split Protected Phases 6 4 4 5 Permitted Phases Actuated Green, G (s) 12.5 32.5 14.5 Effective Green, g (s) 12.0 32.0 14.0 Actuated g/C Ratio 0.17 0.46 0.20 Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 305 2311 645 v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Perm v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Approach LOS C B C		1.00	1.00	1.00				
RTOR Reduction (vph) 12 0 0 25 0 0 Lane Group Flow (vph) 88 0 0 1267 386 0 Confl. Peds. (#/hr) 60 60 Parking (#/hr) 0 Turn Type Split Protected Phases 6 4 4 5 Permitted Phases Actuated Green, G (s) 12.5 32.5 14.5 Effective Green, g (s) 12.0 32.0 14.0 Actuated g/C Ratio 0.17 0.46 0.20 Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 305 2311 645 v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Perm v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach LOS C B C								
Lane Group Flow (vph) 88 0 0 1267 386 0 Confl. Peds. (#/hr) 0 Turn Type Split Protected Phases 6 4 4 5 Permitted Phases Actuated Green, G (s) 12.5 32.5 14.5 Effective Green, g (s) 12.0 32.0 14.0 Actuated g/C Ratio 0.17 0.46 0.20 Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 305 2311 645 v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Perm v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C								
Confl. Peds. (#/hr) 60 60 Parking (#/hr) 0 Turn Type Split Protected Phases 6 4 4 5 Permitted Phases Actuated Green, G (s) 12.5 32.5 14.5 Effective Green, g (s) 12.0 32.0 14.0 Actuated g/C Ratio 0.17 0.46 0.20 Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 305 2311 645 v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Perm v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C			0					
Parking (#/hr) 0 Turn Type Split Protected Phases 6 4 4 5 Permitted Phases Actuated Green, G (s) 12.5 32.5 14.5 Effective Green, g (s) 12.0 32.0 14.0 Actuated g/C Ratio 0.17 0.46 0.20 Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 305 2311 645 v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Perm v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C				60				
Turn Type								
Protected Phases 6 4 4 5 Permitted Phases Actuated Green, G (s) 12.5 32.5 14.5 Effective Green, g (s) 12.0 32.0 14.0 Actuated g/C Ratio 0.17 0.46 0.20 Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 305 2311 645 v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Perm v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C			unimentura animini madi	Split				-
Actuated Green, G (s) 12.5 32.5 14.5 Effective Green, g (s) 12.0 32.0 14.0 Actuated g/C Ratio 0.17 0.46 0.20 Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 305 2311 645 v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Perm v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C		6			4	5		
Effective Green, g (s) 12.0 32.0 14.0 Actuated g/C Ratio 0.17 0.46 0.20 Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 305 2311 645 v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Perm v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C	Permitted Phases							
Effective Green, g (s) 12.0 32.0 14.0 Actuated g/C Ratio 0.17 0.46 0.20 Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 305 2311 645 v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Perm v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C	Actuated Green, G (s)	12.5			32.5	14.5		
Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 305 2311 645 v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Perm v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C		12.0			32.0	14.0		
Clearance Time (s) 3.5 3.5 3.5 Lane Grp Cap (vph) 305 2311 645 v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Perm v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C		0.17			0.46	0.20		
v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Perm v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C		3.5			3.5	3.5		
v/s Ratio Prot c0.05 c0.25 c0.12 v/s Ratio Perm c0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C	Lane Grp Cap (vph)	305			2311	645		
v/s Ratio Perm v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C								
v/c Ratio 0.29 0.55 0.60 Uniform Delay, d1 25.3 13.8 25.4 Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C	v/s Ratio Perm							
Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C	v/c Ratio	0.29			0.55	0.60		
Progression Factor 1.00 0.89 1.00 Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C	Uniform Delay, d1	25.3			13.8	25.4		
Incremental Delay, d2 2.4 0.2 4.1 Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C	The control of the co	1.00			0.89	1.00		
Delay (s) 27.6 12.5 29.5 Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C		2.4			0.2	4.1		
Level of Service C B C Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C								
Approach Delay (s) 27.6 12.5 29.5 Approach LOS C B C		С						
Approach LOS C B C					12.5			
Intersection Summary								
	Intersection Summary							
HCM Volume to Capacity ratio 0.51	Actuated Cycle Length (70.0		Sum of I	ost time (s) 12.0	

15

Analysis Period (min)

c Critical Lane Group

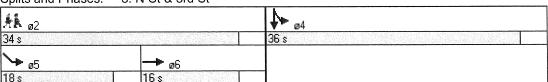
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Phase Number	2	4	5	6	
Movement	Ped	SBTL	SEL	EBT	
Lead/Lag			Lead	Lag	
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	34	36	18	16	
Maximum Split (%)	48.6%	51.4%	25.7%	22.9%	
Minimum Split (s)	34	36	7.5	16	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	0	0	
Minimum Initial (s)	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s) 0	0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)	19.5	23.5		4.5	
Flash Dont Walk (s)	11	9		8	
Dual Entry	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	
Start Time (s)	12.5	46.5	12.5	30.5	
End Time (s)	46.5	12.5	30.5	46.5	
Yield/Force Off (s)	43	9	27	43	
Yield/Force Off 170(s)	32		·		
Local Start Time (s)	3.5	37.5	3.5	21.5	
Local Yield (s)	34		18	34	
Local Yield 170(s)	23	61	18	26	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

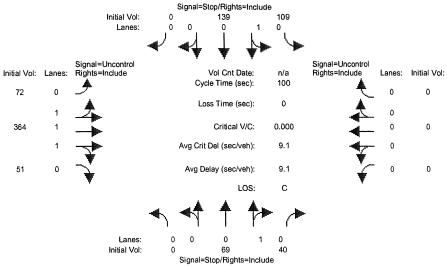
Offset: 9 (13%), Referenced to phase 4:SBTL, Start of Yellow

Splits and Phases: 3: N St & 3rd St



Level Of Service Computation Report 2000 HCM Unsignalized (Future Volume Alternative) Near Term+Project PM

Intersection #4: N St./4th St.



		otopinagine menane					
Street Name:	4th	st St			N St		
Approach: Nort	th Bound	South Bo	ound	East Bo	ound V	lest Bound	
Movement: L -	T - R	L - T	- R	L - T	- R L	~ T - R	
							1
Volume Module:							
Base Vol: 0	69 40	109 139	0	72 364	51 (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	69 40	109 139	0	72 364	51 (0 0	
Added Vol: 0	0 0	0 0	0	0 0	0 (0 0	
PasserByVol: 0		0 0	0	0 0	0 (0 0	
Initial Fut: 0	69 40	109 139	0	72 364	51 (0 0	
User Adj: 1.00	1.00 1.00	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00	
PHF Adj: 1.00	1.00 1.00	1.00 1.00	1.00	1.00 1.00	1.00 1.00	1.00 1.00	
PHF Volume: 0	69 40	109 139	0	72 364	51	0 0	
Reduct Vol: 0	0 0	0 0	0	0 0	0 (0 0	
Final Vol.: 0	69 40	109 139	0	72 364	51	0 0	
Critical Gap Modul	e:						
Critical Gp:xxxxx		7.1 6.5	XXXXX	4.1 xxxx	xxxxx xxxx	xxxx xxxxx	
FollowUpTim:xxxxx						xxxx xxxxx	
							1
Capacity Module:							
Cnflict Vol: xxxx	549 147	315 574	XXXXX	15 xxxx	xxxxx xxx	xxxx xxxxx	
Potent Cap.: xxxx			XXXXX	1616 xxxx	xxxxx xxx	x xxxx xxxxx	
Move Cap.: xxxx						x xxxx xxxxx	
Volume/Cap: xxxx	0.16 0.04	0.21 0.34	XXXX	0.05 xxxx	xxxx xxx	x xxxx xxxx	
							.
Level Of Service M	Iodule:						
Queue: xxxxx	xxxx xxxxx	xxxx xxxx	XXXXX	0.1 xxxx	XXXXX XXXX	x xxxx xxxxx	
Stopped Del:xxxxx	xxxx xxxxx	xxxxx xxxx	XXXXX	7.4 xxxx	xxxx xxxx	x xxxx xxxxx	
LOS by Move: *	* *	* *	*	A *	* *	* *	
Movement: LT -		LT - LTR	- RT	LT - LTR	- RT LT	- LTR - RT	
Shared Cap.: xxxx	xxxx 522	446 xxxx	XXXXX	xxxx xxxx	xxxxx xxx	x xxxx xxxxx	2
SharedQueue:xxxxx				0.1 xxxx	xxxx xxxx	x xxxx xxxx	Ĺ
Shrd StpDel:xxxxx				7.4 xxxx	xxxxx xxxx	x xxxx xxxx	2
Shared LOS: *			*	A *	* *	* *	
	13.7	22.7		xxxxxx		XXXXX	
ApproachLOS:		С		*		*	
<u> </u>		_					

	<i>></i>	-	*	•	4	1	1	†	*	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተኩ						ተተ _ጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.98				
Fit Protected		0.99						1.00				
Satd. Flow (prot)		5050						4960				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		5050				····		4960				
Volume (vph)	72	443	0	0	0	0	0	896	125	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	72	443	0	0	0	0	0	896	125	0	0	0
RTOR Reduction (vph)	0	32	0	0	0	0	0	26	0	0	0	0
Lane Group Flow (vph)	0	483	0	0	0	0	0	995	0	0	0	0
Confl. Peds. (#/hr)	60								60			
Parking (#/hr)	0		0						0			
Turn Type	Split			***************************************								
Protected Phases	1	1						2				
Permitted Phases												
Actuated Green, G (s)		31.5						31.5				
Effective Green, g (s)		31.0						31.0				
Actuated g/C Ratio		0.44						0.44				
Clearance Time (s)		3.5						3.5				
Lane Grp Cap (vph)		2236						2197				
v/s Ratio Prot		c0.10						c0.20				
v/s Ratio Perm												
v/c Ratio		0.22						0.45				
Uniform Delay, d1		12.0						13.6				
Progression Factor		1.22						1.00				
Incremental Delay, d2		0.2						0.7				
Delay (s)		14.9						14.3				
Level of Service		В						В				
Approach Delay (s)		14.9			0.0			14.3			0.0	
Approach LOS		В			A			В			A	
Intersection Summary								100				
HCM Average Control D			14.5		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.33	to a second	_	e nous vieto do			0.0			
Actuated Cycle Length			70.0			lost time			8.0			
Intersection Capacity U	tilization	l	42.5%		ICU Lev	el of Se	rvice		A			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	35	35	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	34.5	34.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	22	22	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	65.5	30.5	
End Time (s)	30.5	65.5	
Yield/Force Off (s)	27	62	
Yield/Force Off 170(s)	18	53	
Local Start Time (s)	38.5	3.5	
Local Yield (s)	0	35	
Local Yield 170(s)	61	26	

Cycle Length

70

Control Type

Pretimed

Natural Cycle

70

Offset: 27 (39%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 5: N St & 5th St

♣ ø1	↑ ø2
35 s	35 s

	<i>></i>	-	*	•	4	4	•	†	~	-	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	ተተ _ጉ		¥	44				and the second	ሻ	ት ጮ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0					4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95					1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00					1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00					1.00	1.00	
Frt	1.00	0.99		1.00	0.99					1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)	1770	5018		1770	3519					1593	3302	
Flt Permitted	0.95	1.00		0.95	1.00					0.95	1.00	
Satd. Flow (perm)	1770	5018		1770	3519				•	1593	3302	
Volume (vph)	123	577	31	311	677	27	0	0	0	173	972	788
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	123	577	31	311	677	27	0	0	0	173	972	788
RTOR Reduction (vph)	0	8	0	0	4	0	0	0	0	0	181	0
Lane Group Flow (vph)	123	600	0	311	700	0	0	0	0	173	1579	0
Confl. Peds. (#/hr)			60							60		
Parking (#/hr)										0		
Turn Type	Prot			Prot						Split		
Protected Phases	1	6		5	2					4	4	
Permitted Phases												
Actuated Green, G (s)	6.5	12.5		12.5	18.5					33.0	33.0	
Effective Green, g (s)	6.0	12.0		12.0	18.0					34.0	34.0	
Actuated g/C Ratio	0.09	0.17		0.17	0.26					0.49	0.49	
Clearance Time (s)	3.5	3.5		3.5	3.5					5.0	5.0	
Lane Grp Cap (vph)	152	860		303	905					774	1604	
v/s Ratio Prot	0.07	0.12		c0.18	c0.20					0.11	c0.48	
v/s Ratio Perm												
v/c Ratio	0.81	0.70		1.03	0.77					0.22	0.98	
Uniform Delay, d1	31.4	27.3		29.0	24.1					10.4	17.7	
Progression Factor	1.00	1.00		0.78	0.76					0.74	0.82	
Incremental Delay, d2	35.5	4.7		57.3	6.1					0.6	17.5	
Delay (s)	67.0	32.0		79.9	24.5					8.3	32.1	
Level of Service	E	С		Е	С					Α	С	
Approach Delay (s)		37.8			41.5			0.0			29.9	
Approach LOS		D			D			Α			С	
Intersection Summary												
HCM Average Control D			34.7		HCM Le	vel of S	ervice		С			
HCM Volume to Capaci			0.92									
Actuated Cycle Length			70.0			lost time			8.0			
Intersection Capacity Ut	tilization	ì	91.5%	1	CU Lev	el of Se	rvice		F			
Analysis Period (min)			15									
c Critical Lane Group												

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Phase Number	1	2	4	5	6	
Movement	EBL	WBT	SBTL	WBL	EBT	
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max	Max	
Maximum Split (s)	10	22	38	16	16	
Maximum Split (%)	14.3%		54.3%	22.9%	22.9%	
Minimum Split (s)	8	22	38	7.5	16	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	1.5	0	0	
Minimum Initial (s)	4	4	4	4		
Vehicle Extension (s)	3	3	3	3	3	
Minimum Gap (s)	3	3	3	3	3	
Time Before Reduce (s)	0	0	0	0	0	
Time To Reduce (s)	0	0	0	0	0	
Walk Time (s)		6.5			0.5	
Flash Dont Walk (s)		12	18		12	
Dual Entry	No	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	Yes	
Start Time (s)	10.5	20.5	42.5	10.5	26.5	
End Time (s)	20.5	42.5	10.5	26.5	42.5	
Yield/Force Off (s)	17	39	5.5	23		
Yield/Force Off 170(s)	17	27	57.5	23	27	
Local Start Time (s)	57.5	67.5	19.5	57.5	3.5	
Local Yield (s)	64				16	
Local Yield 170(s)	64	4	34.5	0	4	
4. 6						

Cycle Length 70
Control Type Pretimed
Natural Cycle 80

Offset: 23 (33%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow

Splits and Phases: 6: Capitol Mall & 3rd St

<i>▶</i> ⊘1	← ø2	₽ 04
10s	22 s	38 s
√ ø5	→ ø6	
16 s	168	

3/16/2005 Fehr & Peers Associates, Inc.

301 Capitol Mall Near Term Plus Project MITIGATED - PM Peak

Lane Configurations	SBR 1900
Ideal Flow (vphpl) 1900 <th>1900</th>	1900
Total Lost time (s) 4.0 1.00 1.00 1.00 1.00 1.00 9.99 0.99 0.99 0.99 0.99 0.99 0.98 0.99 0.98 0.99 0.99 0.98 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.98 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0.99	1900
Lane Util. Factor 1.00 0.95 1.00 0.91 1.00 1.00 Frpb, ped/bikes 1.00 1.00 0.87 0.99 0.99 0.97 Flpb, ped/bikes 0.97 1.00 1.00 1.00 0.99 0.99 Frt 1.00 1.00 0.85 0.99 0.98 0.96 Flt Protected 0.95 1.00 1.00 1.00 0.98 0.99 Satd. Flow (prot) 1720 3539 1380 5000 1581 1519 Flt Permitted 0.27 1.00 1.00 1.00 0.84 0.90	
Frpb, ped/bikes 1.00 1.00 0.87 0.99 0.99 0.97 Flpb, ped/bikes 0.97 1.00 1.00 1.00 0.99 0.99 Frt 1.00 1.00 0.85 0.99 0.98 0.96 Flt Protected 0.95 1.00 1.00 1.00 0.98 0.99 Satd. Flow (prot) 1720 3539 1380 5000 1581 1519 Flt Permitted 0.27 1.00 1.00 1.00 0.84 0.90	
Flpb, ped/bikes 0.97 1.00 1.00 1.00 0.99 Frt 1.00 1.00 0.85 0.99 0.98 0.96 Flt Protected 0.95 1.00 1.00 1.00 0.98 0.99 Satd. Flow (prot) 1720 3539 1380 5000 1581 1519 Flt Permitted 0.27 1.00 1.00 1.00 0.84 0.90	
Frt 1.00 1.00 0.85 0.99 0.98 0.96 Flt Protected 0.95 1.00 1.00 1.00 0.98 0.99 Satd. Flow (prot) 1720 3539 1380 5000 1581 1519 Flt Permitted 0.27 1.00 1.00 0.84 0.90	
Flt Protected 0.95 1.00 1.00 0.98 0.99 Satd. Flow (prot) 1720 3539 1380 5000 1581 1519 Flt Permitted 0.27 1.00 1.00 0.84 0.90	
Satd. Flow (prot) 1720 3539 1380 5000 1581 1519 Flt Permitted 0.27 1.00 1.00 1.00 0.84 0.90	
Flt Permitted 0.27 1.00 1.00 1.00 0.84 0.90	enn, i
	en no o
Satd Flow (nerm) 493 3539 1380 5000 1355 1379	
Edita: Flow (perm) 400 0000 1000 0000 1000 1070	
Volume (vph) 127 597 25 0 859 55 63 110 25 60 130	93
Peak-hour factor, PHF 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00
Adj. Flow (vph) 127 597 25 0 859 55 63 110 25 60 130	93
RTOR Reduction (vph) 0 0 12 0 10 0 0 7 0 0 25	0
Lane Group Flow (vph) 127 597 13 0 904 0 0 191 0 0 258	0
Confl. Peds. (#/hr) 60 60 60 60 60 60	60
Parking (#/hr) 0 0 0 0 0	0
Turn Type Perm Perm Perm Perm Perm	
Protected Phases 2 2 4 4	
Permitted Phases 2 2 2 4 4	
Actuated Green, G (s) 38.0 38.0 38.0 23.5 23.5	
Effective Green, g (s) 37.5 37.5 37.5 24.5 24.5	
Actuated g/C Ratio 0.54 0.54 0.54 0.54 0.35 0.35	
Clearance Time (s) 3.5 3.5 3.5 5.0 5.0	
Lane Grp Cap (vph) 264 1896 739 2679 474 483	
v/s Ratio Prot 0.17 0.18	
v/s Ratio Perm c0.26 0.01 0.14 c0.19	
v/c Ratio 0.48 0.31 0.02 0.34 0.40 0.53	
Uniform Delay, d1 10.2 9.1 7.6 9.2 17.2 18.2	
Progression Factor 2.18 2.22 3.69 0.24 0.91 0.98	
Incremental Delay, d2 5.0 0.4 0.0 0.3 2.5 4.0	
Delay (s) 27.2 20.5 28.2 2.6 18.1 21.9	
Level of Service C C C A B C	
Approach Delay (s) 21.9 2.6 18.1 21.9	
Approach LOS C A B C	
Intersection Summary	
HCM Average Control Delay 13.3 HCM Level of Service B	
HCM Volume to Capacity ratio 0.50	
Actuated Cycle Length (s) 70.0 Sum of lost time (s) 8.0	
Intersection Capacity Utilization 64.7% ICU Level of Service C	
Analysis Period (min) 15	
c Critical Lane Group	



Phase Number	2	4	
Movement	EBWB	NBSB	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	41.5	28.5	
Maximum Split (%)	59.3%	40.7%	
Minimum Split (s)	22.5	20	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	10	10	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	59		
End Time (s)	30.5	59	
Yield/Force Off (s)	27	54	
Yield/Force Off 170(s)	17		
Local Start Time (s)	32		
Local Yield (s)	0		
Local Yield 170(s)	60	17	
Intersection Summary			

Cycle Length 70
Control Type Pretimed
Natural Cycle 50

Offset: 27 (39%), Referenced to phase 2:EBWB, Start of Yellow

Splits and Phases: 7: Capitol Mall & 4th St

ø2	₩ 04
41.5 s	28.5 s

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ليوليو	ተተ			ተተጮ		P	ተተጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	0.97	0.95			0.91		0.97	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			4983		3433	4922				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			4983		3433	4922				
Volume (vph)	274	409	0	0	582	55	331	675	94	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	274	409	0	0	582	55	331	675	94	0	0	0
RTOR Reduction (vph)	0	0	0	0	16	0	0	26	0	0	0	0
Lane Group Flow (vph)	274	409	Ō	ő	621	Ö	331	743	Ö	Ö	Ö	0
Confl. Peds. (#/hr)			:		· • • • • • • • • • • • • • • • • • • •	60			60			
Turn Type	Prot						Split					
Protected Phases	1	6			2		8	8				
Permitted Phases												
Actuated Green, G (s)	14.5	36.5			18.5		25.0	25.0				
Effective Green, g (s)	14.0	36.0			18.0		26.0	26.0				
Actuated g/C Ratio	0.20	0.51			0.26		0.37	0.37				
Clearance Time (s)	3.5	3.5			3.5		5.0	5.0				
Lane Grp Cap (vph)	687	1820	-		1281		1275	1828				
v/s Ratio Prot	c0.08	0.12			c0.12		0.10	c0.15				
v/s Ratio Prot v/s Ratio Perm	CU.UU	0.12			00.12		0.10	CO. 13				
v/c Ratio	0.40	0.22			0.49		0.26	0.41				
Uniform Delay, d1	24.3	9.3			22.1		15.3	16.3				
Progression Factor	0.87	0.27			1.00		0.47	0.42				
Incremental Delay, d2	1.7	0.27			1.00		0.47	0.42				
Delay (s)	22.8	2.8			23.4		7.6	7.5				
Level of Service	22.0 C	2.0 A			23.4 C			7.5 A				
		10.8			23.4		A	7.5			0.0	
Approach Delay (s) Approach LOS		10.8 B			23.4 C			7.5 A			0.0 A	
Intersection Summary												
HCM Average Control [12.6		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.43									
Actuated Cycle Length			70.0			lost time			12.0			
Intersection Capacity U	tilization		47.7%		CU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												

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Phase Number	1	2	6	8	
Movement	EBL	WBT	EBT	NBTL	,
Lead/Lag	Lag	Lead			
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	18	22	40	30	
Maximum Split (%)			57.1%	42.9%	
Minimum Split (s)	7.5	20.5	20.5	17	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	0	1.5	
Minimum Initial (s)	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s)		0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)		7	7	7	
Flash Dont Walk (s)		10	10	5	igus 하게 하고 하느낌이다. 나는 하는데 보고 있는데 그 사람이 모르게 하는데 하는데 없었다.
Dual Entry	No	Yes	Yes	Yes	
Inhibit Max	Yes	Yes		Yes	
Start Time (s)	20.5	68.5			
End Time (s)	38.5	20.5		68.5	
Yield/Force Off (s)	35	17			
Yield/Force Off 170(s)	35		25	58.5	
Local Start Time (s)	55.5				
Local Yield (s)	0	52	10 to	100000	
Local Yield 170(s)	0	42	60	23.5	

Cycle Length 70
Control Type Pretimed
Natural Cycle 45

Offset: 35 (50%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow

Splits and Phases: 8: Capitol Mall & 5th St

← ø2	ø1	★ ₈₈	
22 s	18 s	30 s	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				K	44	ď	ř	†			ሳ ጐ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor				0.91	0.91	1.00	1.00	1.00			0.95	
Frt				1.00	1.00	0.85	1.00	1.00			0.99	
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)				1610	3390	1583	1770	1863			3515	
Flt Permitted				0.95	1.00	1.00	0.15	1.00			1.00	
Satd. Flow (perm)				1610	3390	1583	276	1863			3515	
Volume (vph)	0	0	0	517	1260	193	37	70	0	0	953	46
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	517	1260	193	37	70	0	0	953	46
RTOR Reduction (vph)	0	0	0	0	0	97	0	0	0	0	5	0
Lane Group Flow (vph)	0	0	0	517	1260	97	37	70	0	0	994	0
Turn Type			C	ustom	C	custom c	ustom					
Protected Phases											4	
Permitted Phases				2	2	2	8	8				
Actuated Green, G (s)				35.5	35.5	35.5	27.5	27.5			27.5	
Effective Green, g (s)				35.0	35.0	35.0	27.0	27.0			27.0	
Actuated g/C Ratio				0.50	0.50	0.50	0.39	0.39			0.39	
Clearance Time (s)				3.5	3.5	3.5	3.5	3.5			3.5	
Lane Grp Cap (vph)				805	1695	792	106	719			1356	
v/s Ratio Prot											c0.28	
v/s Ratio Perm				0.32	c0.37	0.06	0.13	0.04				
v/c Ratio				0.64	0.74	0.12	0.35	0.10			0.73	
Uniform Delay, d1				12.9	13.9	9.3	15.3	13.7			18.4	
Progression Factor				0.71	0.70	0.47	0.77	0.57			1.00	
Incremental Delay, d2				3.6	2.7	0.3	5.1	0.2			3.5	
Delay (s)				12.8	12.5	4.6	16.9	8.0			22.0	
Level of Service				В	В	Α	В	Α			С	
Approach Delay (s)		0.0			11.8			11.0			22.0	
Approach LOS		Α			В			В			С	
Intersection Summary												
	Delav		15.1	I	-ICM Le	vel of S	ervice		В			
				•					e e e e			
			70.0		Sum of I	ost time	e (s)		8.0			
		: 20. e }			CU Lev							
			15		,		·					
c Critical Lane Group												
Intersection Summary HCM Average Control I HCM Volume to Capac Actuated Cycle Length Intersection Capacity U Analysis Period (min)	ity ratio (s)		0.74 70.0 72.2%		HCM Le	ost time	e (s)	В	8.0 C		C	

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w	

Phase Number	2	4	8
Movement W	/BTL	SBT	NBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	Max
Maximum Split (s)	39	31	31
Fig. 1. And the first of the control	5.7%	44.3%	
Minimum Split (s)	7.5	7.5	31
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	0	0	0
Minimum Initial (s)	4	4	4
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			15.5
Flash Dont Walk (s)		V	12
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	
Start Time (s)	62.5	31.5	31.5
End Time (s)	31.5 28	62.5 59	62.5 59
Yield/Force Off (s)		59 59	
Yield/Force Off 170(s) Local Start Time (s)	28 3.5		49 (17)
	39	42.5	
Local Yield (s)	აუ	U	58

Cycle Length 70
Control Type Pretimed
Natural Cycle 60

Offset: 59 (84%), Referenced to phase 4:SBT, Start of Yellow

Splits and Phases: 9: L St & 3rd St

ø2	₩ ø4
39 s	31.8
	ø8
	31 8

	۶	-	*	1	4	*	4	†	*	1	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ttt≯		ħ	ተተተ				ሻሻ
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		1.00	0.91				0.88
Frpb, ped/bikes					1.00		1.00	1.00				0.93
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6311		1770	5085				2585
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6311		1770	5085				2585
Volume (vph)	0	0	0	0	1812	155	320	683	0	0	0	188
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	1812	155	320	683	0	0	0	188
RTOR Reduction (vph)	0	0	0	0	19	0	11	0	0	0	0	15
Lane Group Flow (vph)	0	0	0	0	1948	0	309	683	0	0	0	173
Confl. Peds. (#/hr)			TO STATE OF THE STATE OF			60	60	San Land St.				60
Turn Type							Split				C	ustom
Protected Phases					2		1	1				Section 1
Permitted Phases					40.0							1
Actuated Green, G (s)					40.0		20.5	20.5				20.5
Effective Green, g (s)					41.0		21.0	21.0				21.0
Actuated g/C Ratio					0.59		0.30	0.30				0.30
Clearance Time (s)					5.0		4.5	4.5				4.5
Lane Grp Cap (vph)					3696		531	1526				776
v/s Ratio Prot					c0.31		c0.17	0.13				
v/s Ratio Perm												0.07
v/c Ratio					0.53		0.58	0.45				0.22
Uniform Delay, d1					8.7		20.8	19.8				18.4
Progression Factor					1.00		0.68	0.70				1.00
Incremental Delay, d2					0.5		4.3	0.9				0.7
Delay (s)					9.2		18.4	14.7				19.0
Level of Service					Α		В	В				E
Approach Delay (s)		0.0			9.2			15.9			19.0	
Approach LOS		Α			Α			В			В	
Intersection Summary									_			
HCM Average Control I HCM Volume to Capaci			11.9 0.55		HCM Le	evel of S	ervice		В			
Actuated Cycle Length			70.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity U			77.3%			el of Se			D			
Analysis Period (min) c Critical Lane Group			15									



Phase Number	1	2	
Movement	NBTL	WBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	45	
Maximum Split (%)	35.7%	64.3%	
Minimum Split (s)	25	45	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	1	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	11.5	31	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	37	62	
End Time (s)	62	37	
Yield/Force Off (s)	57.5	32	
Yield/Force Off 170(s)	48.5	23	
Local Start Time (s)	5	30	
Local Yield (s)	25.5	0	
Local Yield 170(s)	16.5	61	
Internation Comment			

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 32 (46%), Referenced to phase 2:WBT, Start of Yellow

Splits and Phases: 10: L St & 5th St

★ ø1	← _{ø2}
25 s	45 s

	≯		*	†	1	-	↓	•	\	7	
Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	SEL2	SEL	SER	
Lane Configurations		ፈተኩ		ĵ»	7	7	44		አ ነነነላ		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0		4.0		
Lane Util. Factor		0.91		0.95	0.95	0.91	0.91		0.91		
Frpb, ped/bikes		0.99		1.00	1.00	1.00	1.00		0.97		
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00		1.00		
Frt		0.98		0.94	0.85	1.00	1.00		0.96		
Flt Protected		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (prot)		4952		1660	1504	1610	3372		6090		
Flt Permitted		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (perm)		4952		1660	1504	1610	3372		6090		
Volume (vph)	1	687	85	70	161	229	350	7	1235	454	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	1	687	85	70	161	229	350	7	1235	454	
RTOR Reduction (vph)	0	15	0	26	43	0	0	0	0	0	
Lane Group Flow (vph)	0	758	0	93	69	187	392	0	1696	0	
Confl. Peds. (#/hr)			60							60	
Turn Type	Split				Perm	Split		Split			
Protected Phases	3	3		5		1	1	2	2		
Permitted Phases					5						
Actuated Green, G (s)		23.0		12.0	12.0	17.5	17.5		32.0		
Effective Green, g (s)		23.0		12.0	12.0	17.0	17.0		32.0		
Actuated g/C Ratio		0.23		0.12	0.12	0.17	0.17		0.32		
Clearance Time (s)	nghui j	4.0		4.0	4.0	3.5	3.5		4.0		
Lane Grp Cap (vph)		1139		199	180	274	573		1949		
v/s Ratio Prot		c0.15		c0.06		0.12	c0.12		c0.28		
v/s Ratio Perm					0.05						
v/c Ratio		0.67		0.47	0.38	0.68	0.68		0.94dr		
Uniform Delay, d1		35.0		41.0	40.6	39.0	39.0		32.0		
Progression Factor		1.00		1.00	1.00	0.92	0.92		1.00		
Incremental Delay, d2		3.1		7.8	6.1	12.5	6.3		5.6		
Delay (s)		38.1		48.8	46.6	48.4	42.2		37.7		
Level of Service		D		D	D	D	D		D		
Approach Delay (s)		38.1		47.8			44.2		37.7		
Approach LOS		D		D			D		D		
Intersection Summary											
HCM Average Control D			39.6	ŀ	HCM Le	vel of S	ervice		D		
HCM Volume to Capaci			0.72	San A							
Actuated Cycle Length			100.0		Sum of I				16.0		
Intersection Capacity Utilization 77.0% ICU Level of Service D											
Analysis Period (min)	. D	المائدة مام	15	h lana -		t lan-					
dr Defacto Right Lane	. Keco	ae with	i thoug	n iane a	as a rigr	ıı ıane.					

3/16/2005 Fehr & Peers Associates, Inc.

c Critical Lane Group

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Phase Number	1	2	3	5	6	
Movement	SBTL	SEL	EBTL	NBT	Ped	
Lead/Lag	Lead	Lag				
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max	Max	
Maximum Split (s)	21	36	27	16	73	
Maximum Split (%)	21.0%	36.0%	27.0%	16.0%	73.0%	
Minimum Split (s)	7.5	36	27	8	73	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0.5	0.5	0.5	0.5	
Minimum Initial (s)	4	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	3	
Minimum Gap (s)	3	3	3	3	3	
Time Before Reduce (s)		0	0	0	0	
Time To Reduce (s)	0	0	0	0	0	
Walk Time (s)		21	12		58	
Flash Dont Walk (s)		11	11		11	
Dual Entry	Yes	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	Yes	
Start Time (s)	85	6	58	42		
End Time (s)	6	42		58	58	
Yield/Force Off (s)	2.5	38		54	54	
Yield/Force Off 170(s)	2.5	27	70	54		
Local Start Time (s)	47	68				
Local Yield (s)	64.5	0				
Local Yield 170(s)	64.5	89	32	16	5	

Cycle Length 100
Control Type Pretimed
Natural Cycle 100

Offset: 38 (38%), Referenced to phase 2:SEL, Start of Yellow

Splits and Phases: 11: J St & 3rd St

№ ø1	★ ø2	1 ø5	♣ ø3
21 s	36 s	16 s	27 s
Á\$ ø6			
73 s			

	۶		*	*	4	*	4	†	~	1	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ř	नाा	7					ተ ኁ	7			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.81	1.00					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.95					1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.96	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	6035	1498					3254	1441			
Flt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	6035	1498					3254	1441			
Volume (vph)	324	1583	188	0	0	0	0	431	408	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	324	1583	188	0	0	0	0	431	408	0	0	0
RTOR Reduction (vph)	167	0	109	0	0	0	0	2	2	0	0	0
Lane Group Flow (vph)	157	1583	79	0	0	0	0	586	249	0	0	0
Confl. Peds. (#/hr)	60		60									
Parking (#/hr)	0											
Turn Type	Split		Perm						Perm			
Protected Phases	1	1						2				
Permitted Phases			1					· · · · · · · · · · · · · · · · · · ·	2			
Actuated Green, G (s)	21.0	21.0	21.0					21.0	21.0			
Effective Green, g (s)	21.0	21.0	21.0					21.0	21.0			
Actuated g/C Ratio	0.42	0.42	0.42					0.42	0.42			
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Grp Cap (vph)	542	2535	629				. Vita 149	1367	605	100000		
v/s Ratio Prot	0.12	c0.26	020					c0.18	000			
v/s Ratio Perm	0.12	00.20	0.05					00.10	0.17			
v/c Ratio	0.29	0.62	0.13					0.43	0.41			
Uniform Delay, d1	9.6	11.4	8.9					10.3	10.2			
Progression Factor	0.36	0.56	0.42					1.00	1.00			
Incremental Delay, d2	0.8	0.7	0.3					1.0	2.1			
Delay (s)	4.3	7.1	4.0					11.2	12.2			
Level of Service	Α	Α	A					В	В.			
Approach Delay (s)		6.4			0.0			11.5	_		0.0	
Approach LOS		A			A			В			Α	
Intersection Summary												
HCM Average Control D			7.9		HCM Le	vel of S	ervice		Α			
HCM Volume to Capaci			0.53									
Actuated Cycle Length			50.0		Sum of I				8.0			
Intersection Capacity Ut	tilization	١	80.6%		ICU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	25	25	
Yellow Time (s)	4	4	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (. •	0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	12	16	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	28	3	
End Time (s)	3	28	
Yield/Force Off (s)	49	24	
Yield/Force Off 170(s)		8	
Local Start Time (s)	29	4	
Local Yield (s)	0	25	
Local Yield 170(s)	38	9	
displaced control from the control and a supplementation of the control and th	Managara and a substitute and a state of the		

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 49 (98%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 12: J St & 5th St

♣ ø1	↑ ø2
25 s	25 s

	<u></u>	-	*	1		1	1	†	*	1	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				,	tttp		44	ተተ				*
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		0.97	0.95				
Frpb, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6224		3433	3362				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6224		3433	3362				
Volume (vph)	0	0	0	0	2640	55	349	399	× 0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	2640	55	349	399	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	0	14	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2692	0	335	399	0	0	0	0
Confl. Peds. (#/hr)						60						
Parking (#/hr)					0			0				
Turn Type			·			·	Split					
Protected Phases					1		· 2	2				
Permitted Phases												
Actuated Green, G (s)					75.5		17.5	17.5				
Effective Green, g (s)					75.0		17.0	17.0		- 391		
Actuated g/C Ratio					0.75		0.17	0.17				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					4668		584	572				
v/s Ratio Prot					c0.43		0.10	c0.12				
v/s Ratio Perm												
v/c Ratio					0.58		0.57	0.70				
Uniform Delay, d1					5.5		38.2	39.1				
Progression Factor					1.00		1.02	1.02				
Incremental Delay, d2					0.5		3.7	6.3				
Delay (s)					6.0		42.8	46.3				
Level of Service					Α		D	D				
Approach Delay (s)		0.0			6.0			44.7			0.0	
Approach LOS		Α			Α			D			Α	
Intersection Summary												
HCM Average Control [14.4		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.60		±200 acciones (1 − 000)	2 07 of 2084 1977	and the second		. v. ±0.00			
Actuated Cycle Length			100.0			lost time			8.0			
Intersection Capacity U	tilizatior	ָר יַר	112.1%		CU Lev	el of Se	rvice		Н			
Analysis Period (min)			15									
c Critical Lane Group												

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Phase Number	1	2	
Movement	WBT	NBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	79	21	
	79.0%	21.0%	
Minimum Split (s)	79	21	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s)		0	
Time To Reduce (s)	0	0	
Walk Time (s)	64.5	5.5	
Flash Dont Walk (s)	11	12	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	44.5		
End Time (s)	23.5	44.5	
Yield/Force Off (s)	20		
Yield/Force Off 170(s)	9	29	
Local Start Time (s)	24.5		
Local Yield (s)	0	- 1 1 1 1 Table 1	
Local Yield 170(s)	89	9	

Cycle Length 100
Control Type Pretimed
Natural Cycle 100

Offset: 20 (20%), Referenced to phase 1:WBT, Start of Yellow

Splits and Phases: 13: I St & 5th St

<u>Φ</u>	₹ ø2
79 s	21 s

	<u></u>	-	*	•	-	•	4	†	~	1	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተ _ጉ		ሻ	ተተኩ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.91		0.86	0.86				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00 1.00	1.00 1.00				
Frt					0.97 1.00		0.95	1.00				
Fit Protected					4846		1522	4806				
Satd. Flow (prot) Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4846		1522	4806				
Volume (vph)	0	0	0	0	682	198	260	1538	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0.00	0.00	0.00	682	198	260	1538	0	0.00	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	74	0	0	0	0	0
Lane Group Flow (vph)	Ő	ő	ő	ő	876	0	186	1538	Ö	Ö	Ö	ŏ
Confl. Peds. (#/hr)					0,0	60				· · · · · · · · · · · · · · · · · · ·	na na na a n	
Turn Type							Split					
Protected Phases					4		2	2				
Permitted Phases												
Actuated Green, G (s)					21.5		21.5	21.5				
Effective Green, g (s)					21.0		21.0	21.0				
Actuated g/C Ratio					0.42		0.42	0.42				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					2035		639	2019				
v/s Ratio Prot					c0.18		0.12	c0.32				
v/s Ratio Perm												
v/c Ratio					0.43		0.29	0.76				
Uniform Delay, d1					10.3		9.6	12.4				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.7		1.2	2.8				
Delay (s)					10.9		10.7	15.1				
Level of Service		0.0			B 10.9		В	B 14.5			0.0	
Approach LOS		0.0 A			10.9 B			14.5 B			0.0 A	
Approach LOS		^			ט			U			Α	
Intersection Summary) olov		42.2		HCM Le	wol of C	ondoo		В			
HCM Average Control E HCM Volume to Capaci			13.3 0.60		HOW LE	evel of S	ei vice		D			
Actuated Cycle Length			50.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity U		1875	54.8%		ICU Lev				Α			
Analysis Period (min)	03.00m (17.57° T.S.	and the second of the	15									
c Critical Lane Group												



Phase Number	2	4	
Movement	NBTL	WBT	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	21.5	21.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	*	0	
Time To Reduce (s)	0	0	
Walk Time (s)	10	10	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	48.5	23.5	
End Time (s)	23.5	48.5	
Yield/Force Off (s)	20	45	
Yield/Force Off 170(s)	12	37	
Local Start Time (s)	3.5	28.5	
Local Yield (s)	25	0	
Local Yield 170(s)	17	42	

Cycle Length 50
Control Type Pretimed
Natural Cycle 45

Offset: 45 (90%), Referenced to phase 4:WBT, Start of Yellow

Splits and Phases: 14: L St & 16th St

↑ ø2	← ø4
25 s	25 s

Page 1

301 Capitol Mall 2025 Plus Project MITIGATED - AM Peak 1: Q St & 3rd St

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		tttp:									ተተቡ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.98									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.95									1.00	
Flt Protected		1.00									0.98	
Satd. Flow (prot)		5973									4984	
FIt Permitted		1.00									0.98	
Satd. Flow (perm)		5973									4984	
Volume (vph)	0	2410	1050	0	0	0	0	0	0	234	340	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2410	1050	0	0	0	0	0	0	234	340	0
RTOR Reduction (vph)	0	37	0	0	0	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	3423	0	0	0	0	0	0	0	0	566	0
Confl. Peds. (#/hr)			60							60		
Parking (#/hr)										0		0
Turn Type		and the second second second second								Split		
Protected Phases		2								1	1	
Permitted Phases										101 - 11 J - 151	10m 14 m + 510	
Actuated Green, G (s)		71.5									21.5	
Effective Green, g (s)		71.0									21.0	
Actuated g/C Ratio		0.71									0.21	
Clearance Time (s)		3.5									3.5	
Lane Grp Cap (vph)		4241									1047	
v/s Ratio Prot		c0.57									c0.11	
v/s Ratio Perm		00.01										
v/c Ratio		0.96dr									0.54	
Uniform Delay, d1		9.8									35.2	
Progression Factor		1.00									0.82	
Incremental Delay, d2		1.7									1.8	
Delay (s)		11.6									30.7	
Level of Service		В									C	
Approach Delay (s)		11.6			0.0			0.0			30.7	
Approach LOS		В			A			A			C	
Intersection Summary												
HCM Average Control E			14.3		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.75			40 04 44	2: - 3					
Actuated Cycle Length			100.0			lost time			8.0			
Intersection Capacity Ut	ilizatior	1	73.5%		ICU Lev	el of Se	rvice		D			
Analysis Period (min)			15	Paris								
dr Defacto Right Lane	. Reco	de with	1 thoug	ih lane a	as a righ	nt lane.						

c Critical Lane Group



Phase Number	1	2	
Movement	SBTL	EBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	75	
Maximum Split (%)	25.0%	75.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	90.5	15.5	
End Time (s)	15.5	90.5	
Yield/Force Off (s)	12	87	
Yield/Force Off 170(s)	4		
Local Start Time (s)	3.5	28.5	
Local Yield (s)	25	0	
Local Yield 170(s)	17	92	
	san contract and an application of the	talograma salah dari dari dari	

Cycle Length 100
Control Type Pretimed
Natural Cycle 60

Offset: 87 (87%), Referenced to phase 2:EBT, Start of Yellow

Splits and Phases: 1: Q St & 3rd St

▶ ø1	→ ø2
25 s	75 s

	۶		*	1	4-	•	4	†	<i>></i>	1	↓	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተጉ						†	7
	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	4.0
Lane Util. Factor					0.91						0.91	0.91
Frpb, ped/bikes					1.00						0.98	0.93
Flpb, ped/bikes					1.00						1.00	1.00
Frt					1.00						0.97	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					4863						3071	1205
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					4863						3071	1205
Volume (vph)	0	0	0	170	620	0	0	0	0	0	404	379
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	170	620	0	0	0	0	0	404	379
RTOR Reduction (vph)	0	0	0	0	78	0	0	0	0	0	46	171
Lane Group Flow (vph)	0	0	0	0	712	0	0	0	0	0	468	99
Confl. Peds. (#/hr)				60								60
Parking (#/hr)				0	0						0	0
Turn Type				Split				·				Perm
Protected Phases				. 2	2						1	
Permitted Phases												1
Actuated Green, G (s)					27.5						15.5	15.5
Effective Green, g (s)					27.0						15.0	15.0
Actuated g/C Ratio					0.54						0.30	0.30
Clearance Time (s)					3.5						3.5	3.5
Lane Grp Cap (vph)					2626						921	362
v/s Ratio Prot					c0.15						c0.15	1000 Nation 170
v/s Ratio Perm												0.08
v/c Ratio					0.27						0.51	0.27
Uniform Delay, d1					6.2						14.5	13.3
Progression Factor					1.00						1.00	1.00
Incremental Delay, d2					0.3						2.0	1.9
Delay (s)					6.5						16.4	15.2
Level of Service					Α						В	В
Approach Delay (s)		0.0			6.5			0.0			16.0	
Approach LOS		Α			Α			Α			В	
Intersection Summary												
HCM Average Control De HCM Volume to Capacity			11.2 0.36		HCM Le	vel of S	ervice		В			
Actuated Cycle Length (s			50.0		Sum of	lost time	(s)		8.0			
Intersection Capacity Util		e esta esta esta esta esta esta esta est	42.2%			el of Se			Α.			
Analysis Period (min)			15		. 30 200	2. 3. 30			, ,			
c Critical Lane Group			.0									





Phase Number	1	2	
Movement	SBT	WBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	19	31	
Maximum Split (%)	38.0%	62.0%	
Minimum Split (s)	18.5	30.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	40.5	9.5	
End Time (s)	9.5	40.5	
Yield/Force Off (s)	6	37	
Yield/Force Off 170(s)	48	29	
Local Start Time (s)	3.5	22.5	
Local Yield (s)	19	0	
Local Yield 170(s)	11	42	

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 37 (74%), Referenced to phase 2:WBTL, Start of Yellow

Splits and Phases: 2: P St & 3rd St

↓ ø1	₹ ø2
19 s	31 8

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		*	1	+	\ *	\	
Movement	EBT	EBR	SBL	SBT	SEL	SER	
Lane Configurations	ĵ₃			ተተኩ	MM		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0			4.0	4.0		
Lane Util. Factor	1.00			0.91	0.97		
Frpb, ped/bikes	0.98			1.00	1.00		
Flpb, ped/bikes	1.00			1.00	1.00		
Frt	0.98			1.00	0.96		
Flt Protected	1.00			0.98	0.96		
Satd. Flow (prot)	1780			4980	3347		
Flt Permitted	1.00			0.98	0.96		
Satd. Flow (perm)	1780			4980	3347		
Volume (vph)	90	20	405	552	470	170	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	90	20	405	552	470	170	
RTOR Reduction (vph)	12	0	0	164	0	0	
Lane Group Flow (vph)	98	0	0	793	640	0	
Confl. Peds. (#/hr)		60	60				
Parking (#/hr)			0				
Turn Type	_		Split				
Protected Phases	6		4	4	5		
Permitted Phases	40.5			00.5			
Actuated Green, G (s)	12.5			29.5	17.5		
Effective Green, g (s)	12.0			29.0	17.0		
Actuated g/C Ratio	0.17			0.41	0.24		
Clearance Time (s)	3.5	10210144		3.5	3.5	and the second second	
Lane Grp Cap (vph)	305			2063	813		
v/s Ratio Prot v/s Ratio Perm	c0.06			c0.16	c0.19		
v/s Ratio Perm	0.32			0.20	0.79		
Uniform Delay, d1	25.4			0.38 14.3	24.8		
Progression Factor	1.00			1.37	1.00		
Incremental Delay, d2	2.8			0.4	7.6		
Delay (s)	28.2			20.1	32.4		
Level of Service	20.2 C			20.1 C	32.4 C		
Approach Delay (s)	28.2			20.1	32.4		
Approach LOS	20.2 C			20.1 C	02.4 C		
Intersection Summary							
HCM Average Control D			25.2		HCM Le	vel of Service	Carrier Carrier
HCM Volume to Capaci	ty ratio		0.49				
Actuated Cycle Length			70.0			ost time (s)	12.0
Intersection Capacity U	tilizatior	1	61.6%		ICU Lev	el of Service	В
Analysis Period (min)			15				
c Critical Lane Group							

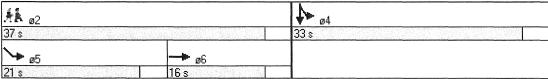
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	ÁŘ	4	1		
Phase Number	2	4	5	6	
Movement	Ped	SBTL	SEL	EBT	
Lead/Lag			Lead	Lag	
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	37	33	21	16	
Maximum Split (%)	52.9%		30.0%	22.9%	
Minimum Split (s)	37	33	7.5	16	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	0	0	
Minimum Initial (s)	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s	s) 0	0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)	22.5	20.5		4.5	
Flash Dont Walk (s)	11	9		8	
Dual Entry	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	
Start Time (s)	20.5	57.5	20.5	41.5	
End Time (s)	57.5	20.5	41.5	57.5	
Yield/Force Off (s)	54	17	38	54	
Yield/Force Off 170(s)	43	8	38	46	
Local Start Time (s)	3.5	40.5	3.5	24.5	
Local Yield (s)	37	0	21	37	
Local Yield 170(s)	26	61	21	29	
Intersection Summary					
	Mark Street Mark Street			CONTRACTOR OF THE PARTY.	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

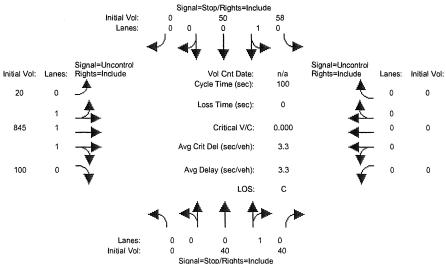
Offset: 17 (24%), Referenced to phase 4:SBTL, Start of Yellow

Splits and Phases: 3: N St & 3rd St



Level Of Service Computation Report 2000 HCM Unsignalized (Future Volume Alternative) 2025+Project AM

Intersection #4: N St./4th St.



	Initial	Vol:	0 Signal	40 =Stop/Right	s=Include	40						
Street Name:			4th	st					N	St		
Approach:	Nor	th Bo	und	Sou	ith Bo	und	Εá	ast Bo	und	W∈	st Bo	und
Movement:		- T				- R		- T			- T	
				1								
Volume Module	e:											
Base Vol:	0	40	40	58	50	0	20	845	100	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	40	40	58	50	0	20	845	100	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:	0	40	40	58	50	0	20	845	100	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	40	40	58	50	0	20	845	100	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	40	40	58	50	0	20	84.5	100	0	0	0
Critical Gap	Modu.	le:										
Critical Gp:	XXXXX	6.5	6.2	7.1	6.5	XXXXX	4.1	XXXX	XXXXX	XXXXX	xxxx	XXXXX
FollowUpTim:	XXXXX	4.0	3.3	3.5	4.0	XXXXX	2.2	XXXX	XXXXX	XXXXX	XXXX	XXXXX
							1					
Capacity Modu	ıle:											
Cnflict Vol:			332	357	1000	XXXXX	15	XXXX	XXXXX	XXXX	XXXX	XXXXX
Potent Cap.:	XXXX	262	715	602	245	XXXXX	1616	XXXX	XXXXX	XXXX	XXXX	XXXXX
Move Cap.:	XXXX	255	715	489	239	XXXXX	1596	XXXX	XXXXX	XXXX	XXXX	XXXXX
Volume/Cap:						XXXX			XXXX			XXXX
	1											
Level Of Ser	vice D	Module	∋:									
Queue:							0.0	XXXX	XXXXX	XXXXX	XXXX	XXXXX
Stopped Del:							7.3	XXXX		XXXXX		
LOS by Move:		*		*		*	Α	*		*	*	*
Movement:		- LTR			- LTR		LT	- LTR	- RT	LT .	- LTR	- RT
Shared Cap.:						xxxxx			XXXXX			XXXXX
SharedQueue:								XXXX	XXXXX	XXXXX	XXXX	XXXXX
Shrd StpDel:			17.1			XXXXX	7.3			XXXXX		XXXXX
Shared LOS:	*	*	C	С		*	Α	*	*	*	*	*
ApproachDel:		17.1			21.2		X	XXXXX		X	XXXXX	
ApproachLOS:		С			С			*			*	

	<i>></i>		*	1	4	4	1	†	/	1	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተጉ						ተተ _ጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.97				
Flt Protected		1.00						1.00				
Satd. Flow (prot)		5066						4866				
Flt Permitted		1.00						1.00				
Satd. Flow (perm)		5066						4866				
Volume (vph)	70	873	0	0	0	0	0	1059	290	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	70	873	0	0	0	0	0	1059	290	0	0	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	44	0	0	0	0
Lane Group Flow (vph)	0	930	0	0	0	0	0	1305	0	0	0	0
Confl. Peds. (#/hr)	60								60			
Parking (#/hr)	0		0						0			
Turn Type	Split											
Protected Phases	1	1						2				
Permitted Phases												
Actuated Green, G (s)		31.5						31.5				
Effective Green, g (s)		31.0						31.0				
Actuated g/C Ratio		0.44						0.44				
Clearance Time (s)		3.5						3.5				
Lane Grp Cap (vph)		2244				espirit in the		2155				
v/s Ratio Prot		c0.18						c0.27				
v/s Ratio Perm												
v/c Ratio		0.41						0.61				
Uniform Delay, d1		13.3						14.8				
Progression Factor		0.99						1.00				
Incremental Delay, d2		0.5						1.3				
Delay (s)		13.6						16.1				
Level of Service		В						В				
Approach Delay (s)		13.6			0.0			16.1			0.0	
Approach LOS		В			Α			В			A	
Intersection Summary								1				
HCM Average Control I			15.1		HCM Le	evel of S	ervice		В			
HCM Volume to Capac	•		0.51		C	المالة المالة	. /->					
Actuated Cycle Length			70.0			lost time			8.0			
Intersection Capacity U	tilization	l Sporter of	52.9%		ICU Lev	el of Se	rvice		А			
Analysis Period (min)			15									
c Critical Lane Group	•											



Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	35	35	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	34.5	34.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	•	0	
Time To Reduce (s)	0	0	
Walk Time (s)	22	22	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	65.5	30.5	
End Time (s)	30.5	65.5	
Yield/Force Off (s)	27	62	
Yield/Force Off 170(s)	18	53	
Local Start Time (s)	38.5	3.5	
Local Yield (s)	0	35	
Local Yield 170(s)	61	26	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 27 (39%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 5: N St & 5th St

♣ ø1	† ø2
35 s	35 s

6: Capitol Mall & 3rd St

HCM Signalized Intersection Capacity Analysis

6: Capitol Mall & 3rd St

2025 Plus Project Conditions - AM Peak No 2-Way Conversion L-Capitol

	۶	-	7	•	4	1	1	Ť	~	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተ _ጉ		ሻ	个个						नाक	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	1 (2 - 9) LBB(1 1 (2 9) DB(1) L + 10 9	4.0	74.0001000000000000000000000000000000000	4.0	4.0			SCHOOL SHOOT SCHOOL SCHOOL SCHOOL			4.0	
Lane Util. Factor		0.91		1.00	0.95						0.86	
Frpb, ped/bikes		1.00		1.00	1.00			000000000000000000000000000000000000000		2-10000-0-10000-0-2-100	1.00	52/C685/III/88/86/E454/E46
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt	0A-SEARCH (1950) AN THE SERVICE AND	0.99		1.00	1.00						0.96	citizato aprica apost NV
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		5044		1770	3539	100 <u>0</u> Pt. 2 2710 Pt - 10 14 C 6 0 0 1 4 - 6 1 1 1 2	5686491 Ono 71 (7007g44. R				6073	
FIt Permitted		1.00		0.95	1.00						0.99	
Satd. Flow (perm)		5044	0.0000	1770	3539						6073	
Volume (vph)	0	1068	40	120	485	0	0	0	0	401	777	435
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1068	40	120	485	0	0	0	0	401	777	435
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	95	0
Lane Group Flow (vph)	0	1102	0	120	485	0	0	0	0	0	1518	0
Confl. Peds. (#/hr)			60									
Parking (#/hr)										0		
Turn Type				Prot						Split		
Protected Phases		6		5	2					4	4	
Permitted Phases												
Actuated Green, G (s)		20.0		12.5	36.0						25.5	
Effective Green, g (s)		19.5		12.0	35.5						26.5	023108C (04269-30) (0-50)
Actuated g/C Ratio		0.28		0.17	0.51						0.38	
Clearance Time (s)		3.5		3.5	3.5						5.0	information of the first of the
Lane Grp Cap (vph)		1405		303	1795						2299	
v/s Ratio Prot		c0.22		c0.07	0.14						c0.25	ENTRESCLUSION ASSULES
v/s Ratio Perm												
v/c Ratio		0.78		0.40	0.27						0.66	KIR SOME LINES AND THE OLD HE
Uniform Delay, d1		23.3		25.8	9.9						18.0	
Progression Factor		1.00		0.88	1.77		D E CORO NOBELLA CONTRACTOR DE	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			0.84	
Incremental Delay, d2		4.5		3.7	0.4						1.3	
Delay (s)		27.8		26.5	17.8						16.5	
Level of Service		С		С	В						В	
Approach Delay (s)		27.8			19.6	Land Management Street, A. C. Star, A. Sandhill S. S. Land Street, Commence		0.0			16.5	
Approach LOS		С			В	100		Α			В	
Intersection Summary												
HCM Average Control D	Delay		20.8	}	-ICM Le	vel of Se	rvice		С			
HCM Volume to Capaci	ty ratio		0.65		ngeren soudiade sin et alle et al 1807/1906							~~~~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
Actuated Cycle Length	(s)		70.0			lost time			12.0			
Intersection Capacity U	tilization		63.0%		CU Lev	el of Ser	vice		В			
Analysis Period (min)			15									
c Critical Lane Group												

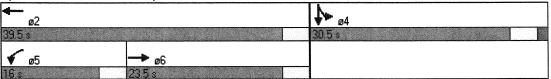


Phase Number	2	4	5	6
Movement	WBT	SBTL	WBL	EBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize		2-800 (BROMEN BROWN BROWN)		2014 Creations 600-90 real violations/
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	39.5	30.5	16	23.5
Maximum Split (%)	56.4%	43.6%	22.9%	33.6%
Minimum Split (s)	39.5	30.5	7.5	23.5
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0	1.5	0	0
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s) 0	0	0	0
Time To Reduce (s)	.0	0	0	0
Walk Time (s)	26	20.5		10
Flash Dont Walk (s)	10	5		10
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	22.5	62	22.5	38.5
End Time (s)	62	22.5	38.5	62
Yield/Force Off (s)	58.5	17.5	35	58.5
Yield/Force Off 170(s)	48.5	12.5	35	48.5
Local Start Time (s)	57.5	27	57.5	3.5
Local Yield (s)	23.5	52.5	0	23.5
Local Yield 170(s)	13.5	47.5	0	13.5
	SENSON STREET			

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 35 (50%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow

Splits and Phases: 6: Capitol Mall & 3rd St



7: Capitol Mall & 4th St

2025 Plus Project Conditions - AM Peak No 2-Way Conversion L-Capitol

7. Capitol Mail & 4th	<u> </u>		•		4	4	4	\$.	1.		1
			¥	•	•	•	7	l		*	+	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	^	7		4 † }			₩	4000	1000	4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95	1.00		0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.87		0.98		energia de la companio	0.96			0.97	TWO THE MEDICAL CO.
Flpb, ped/bikes	0.95	1.00	1.00		1.00			0.99			0.98	
Frt	1.00	1.00	0.85		0.98			0.95			0.96	7034752686686000000
FIt Protected	0.95	1.00	1.00		1.00			0.99			0.99	
Satd. Flow (prot)	1687	3539	1380		4900			1498			1535	vegetilerookst op over 4 voor
Flt Permitted	0.40	1.00	1.00		0.92			0.93			0.94	
Satd. Flow (perm)	718	3539	1380		4517			1413			1452	
Volume (vph)	84	1185	200	10	520	78	10	20	20	55	148	75
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	84	1185	200	10	520	78	10	20	20	55	148	75
RTOR Reduction (vph)	0	0	93	0	28	0	0	13	0	0	19	0
Lane Group Flow (vph)	84	1185	107	0	580	0	0	37	0	0	259	0
Confl. Peds. (#/hr)	60		60	60		60	60		60	60		60
Parking (#/hr)							0	0	0	0	0	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)	38.0	38.0	38.0		38.0			23.5			23.5	
Effective Green, g (s)	37.5	37.5	37.5		37.5			24.5			24.5	
Actuated g/C Ratio	0.54	0.54	0.54		0.54			0.35			0.35	
Clearance Time (s)	3.5	3.5	3.5		3.5			5.0			5.0	
Lane Grp Cap (vph)	385	1896	739		2420			495			508	
v/s Ratio Prot		c0.33										
v/s Ratio Perm	0.12	00.00	0.08		0.13			0.03			c0.18	
v/c Ratio	0.22	0.62	0.14		0.24			0.07			0.51	
Uniform Delay, d1	8.5	11.3	8.2		8.7			15.2			18.0	
Progression Factor	0.62	0.86	2.30		0.52			0.81			0.83	
Incremental Delay, d2	0.8	1.0	0.3		0.2			0.3			3.5	
Delay (s)	6.2	10.8	19.1		4.7			12.6			18.4	
Level of Service	A	В.	В		Α			В			В	
Approach Delay (s)		11.6			4.7			12.6			18.4	
Approach LOS		В			A			В			В	
Intersection Summary												
HCM Average Control D			10.7	-	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.58									
Actuated Cycle Length	(s)		70.0		Sum of				8.0			
Intersection Capacity U)	80.4%		CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												

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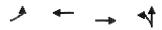
	5	
Phase Number	<u>2</u>	4
	EBWB	MRZR
Lead/Lag		
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	41.5	28.5
Maximum Split (%)	59.3%	
Minimum Split (s)	22.5	20
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	1.5
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s		0
Time To Reduce (s)	0	0
Walk Time (s)	9	5
Flash Dont Walk (s)	10	10
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes
Start Time (s)	59	30.5
End Time (s)	30.5	59
Yield/Force Off (s)	27	54
Yield/Force Off 170(s)	17	44
Local Start Time (s)	32	
Local Yield (s)	0	27
Local Yield 170(s)	60	17
Intersection Summary		
Cycle Length		
Control Type		Pre
Natural Cycle		116
Offset: 27 (39%), Refe	renced	o phase 2
Onset. 21 (0070), Itele	i onicou	o pridoc z

Splits and Phases: 7: Capitol Mall & 4th St

14	ø2	₩ 04
4	15.	285:

3/31/2005 Fehr & Peers Associates, Inc.

	۶	-	*	1	-	1	4	†	*	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	الوالم	ተተ			ሶ ቀڼ		44	ተተ _ጉ				
ldeal Flow (vphpl)	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				
₋ane Util. Factor	0.97	0.95			0.91		0.97	0.91				
Frpb, ped/bikes	1.00	1.00			0.98		1.00	0.95				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
=rt	1.00	1.00			0.97		1.00	0.94				
FIt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			4817		3433	4567				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			4817		3433	4567				
Volume (vph)	582	678	0	0	170	50	439	460	300	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	582	678	0	0	170	50	439	460	300	0	0	0
RTOR Reduction (vph)	0	0	0	0	37	0	0	122	0	0	0	0
Lane Group Flow (vph)	582	678	0	0	183	0	439	638	0	0	0	0
Confl. Peds. (#/hr)						60			60			
Turn Type	Prot						Split					
Protected Phases	1	6			2		8	8				
Permitted Phases							gas B					
Actuated Green, G (s)	14.5	36.5			18.5		25.0	25.0				
Effective Green, g (s)	14.0	36.0			18.0		26.0	26.0				
Actuated g/C Ratio	0.20	0.51			0.26		0.37	0.37				
Clearance Time (s)	3.5	3.5			3.5		5.0	5.0				
Lane Grp Cap (vph)	687	1820			1239		1275	1696				
v/s Ratio Prot	c0.17	c0.19			0.04		0.13	c0.14				
v/s Ratio Perm					0.0		7,.9					
v/c Ratio	0.85	0.37			0.15		0.34	0.38				
Uniform Delay, d1	27.0	10.2			20.1		15.9	16.1				
Progression Factor	0.47	0.20			1.00		0.41	0.24				
Incremental Delay, d2	10.0	0.5			0.3		0.6	0.5				
Delay (s)	22.6	2.5			20.3		7.1	4.4				
Level of Service	C	Α.			20.0 C		Α	Α				
Approach Delay (s)		11.8			20.3			5.4			0.0	
Approach LOS		В			20.0 C			Α			A	
Intersection Summary												
HCM Volume to Consol		1	9.6		HCM Le	vel of S	ervice		Α			
HCM Volume to Capaci			0.50		Cum of	loot time	· (c)		12.0			
Actuated Cycle Length	• •		70.0		Sum of				12.0			
Intersection Capacity Ut Analysis Period (min)	unzation		58.1% 15		ICU Lev	ei oi se	rvice		В			
c Critical Lane Group			10									



Phase Number	1	2	6	8		
Movement	EBL	WBT	EBT	NBTL		
Lead/Lag	Lag	Lead				
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max		
Maximum Split (s)	18	22	40	30		
Maximum Split (%)	25.7%	31.4%	57.1%	42.9%		
Minimum Split (s)	7.5	20.5	20.5	17		
Yellow Time (s)	3.5	3.5	3.5	3.5		
All-Red Time (s)	0	0	0	1.5		
Minimum Initial (s)	4	4	4	4		
Vehicle Extension (s)	3	3	3	3		
Minimum Gap (s)	3	3	3	3		
Time Before Reduce (s) 0	0	0	0		
Time To Reduce (s)	0	0	0	0		
Walk Time (s)		7	7	7		
Flash Dont Walk (s)		10	10	5		
Dual Entry	No	Yes	Yes	Yes		
Inhibit Max	Yes	Yes	Yes	Yes		
Start Time (s)	20.5	68.5	68.5	38.5		
End Time (s)	38.5	20.5	38.5	68.5		
Yield/Force Off (s)	35	17	35	63.5		
Yield/Force Off 170(s)	35	7	25	58.5		
Local Start Time (s)	55.5		33.5	3.5		
Local Yield (s)	0	52	0	28.5		
Local Yield 170(s)	0	42	60	23.5		

Cycle Length 70
Control Type Pretimed
Natural Cycle 55

Offset: 35 (50%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow

Splits and Phases: 8: Capitol Mall & 5th St

← ø2	ø1	√ ↑ ø8
22 s	18 s	30 s
→ ø6		
40 s		

9: L St & 3rd St

2025 Plus Project Conditions - AM Peak No 2-Way Conversion L-Capitol

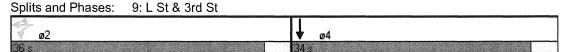
	•		1	1	•	1	1	Ť	<i>></i>	-	ţ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				ኻ	44	ď					ተተጉ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	WW			us emocrativos conjugados	4.0	
Lane Util. Factor				0.91	0.91	1.00					0.91	
Fr	Sales (2010 / 102 - 104 / 104 / 104 / 104 / 104 / 104 / 104 / 104 / 104 / 104 / 104 / 104 / 104 / 104 / 104 /		C-162-7-68-62 (0-23-6-7-28-6-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-	1.00	1.00	0.85	CONTRACTOR				0.99	
Flt Protected				0.95	0.99	1.00					1.00	
Satd. Flow (prot)				1610	3359	1583	STATES HE REPRESENTED TO		NATIONAL CONTRACTOR OF THE PROPERTY OF THE PRO	National SESSOCIAE 1984 (488)	5051	55.500.2530.741.455.
Flt Permitted				0.95	0.99	1.00					1.00	
Satd. Flow (perm)			KESTERENS ACCESSORATION	1610	3359	1583					5051	
Volume (vph)	0	0	0	498	610	180	0	0	0	0	1052	50
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	498	610	180	0	0	0	0	1052	50
RTOR Reduction (vph)	0	0	0	22	22	98	0	0	0	0	7	0
Lane Group Flow (vph)	0	0	0	339	725	82	0	0	0	0	1095	0
Turn Type			C	ustom	C	ustom						The Control of the Co
Protected Phases											4	
Permitted Phases				2	2	2						
Actuated Green, G (s)				32.5	32.5	32.5					30.5	
Effective Green, g (s)				32.0	32.0	32.0					30.0	
Actuated g/C Ratio				0.46	0.46	0.46					0.43	
Clearance Time (s)			1000-1000000000000000000000000000000000	3.5	3.5	3.5					3.5	
Lane Grp Cap (vph)	No. of the last of			736	1536	724					2165	
v/s Ratio Prot											c0.22	
v/s Ratio Perm				0.21	c0.22	0.05						
v/c Ratio				0.46	0.47	0.11					0.51	
Uniform Delay, d1				13.1	13.2	10.9					14.6	
Progression Factor				1.05	1.04	1.44					1.00	
Incremental Delay, d2				2.1	1.0	0.3					0.8	
Delay (s)			-1967, 5705, 1704, 1804	15.7	14.7	16.0					15.4	
Level of Service				В	В	В					В	
Approach Delay (s)		0.0			15.1			0.0			15.4	
Approach LOS		Α			В			Α			В	
Intersection Summary												
HCM Average Control D	elay		15.3	7	ICM Le	vel of Se	ervice		В			
HCM Volume to Capaci	ty ratio		0.49				e ne en			an ang ting ting ting ting ting ting ting ti	e., ee - construence 25 (1500	
Actuated Cycle Length (s)		70.0	5	Sum of I	ost time	(s)		8.0			
Intersection Capacity Ut	ilization		49.0%		CU Lev	el of Ser	vice		Α			
Analysis Period (min)			15									
c Critical Lane Group		ne-rom address our to some side with	rgen on									



Phase Number	2	4
Movement	WBTL	SBT
Lead/Lag		
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	36	34
Maximum Split (%)	51.4%	
Minimum Split (s)	7.5	
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	0
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s		0
Time To Reduce (s)	0	0
Walk Time (s)		22.5
Flash Dont Walk (s)		8
Dual Entry	Yes	Yes
Inhibit Max	Yes	
Start Time (s)	2.5	
End Time (s)	38.5	2.5
Yield/Force Off (s)	35	
Yield/Force Off 170(s)	35	
Local Start Time (s)	3.5	
Local Yield (s)	36	0
Local Yield 170(s)	36	62
Intersection Summary		
Cycle Length		
Control Type		Pre
Natural Cycle		

_ ...

Offset: 69 (99%), Referenced to phase 4:SBT, Start of Yellow



	۶	_	*	•	4	*	1	†	<i>p</i>	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					#ttt		7	ተተተ				77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		1.00	0.91				0.88
Frpb, ped/bikes					0.99		1.00	1.00				0.95
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.97		1.00	1.00				0.85
FIt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6177		1770	5085				2656
FIt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)		20 1 10 10 10 2 10	Tenvae, u s		6177	Andrew Edward	1770	5085	alifant acia 🗻 in		avg. apple of the	2656
Volume (vph)	0	0	0	0	1156	240	160	932	0	0	0	380
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	1156	240	160	932	0	0	0	380
RTOR Reduction (vph)	0	0	0	0	53	0	450	0	0	0	0	8
Lane Group Flow (vph)	0	U	U	0	1343	0	152 60	932	0	0	0	372
Confl. Peds. (#/hr)			74476 (1445)	var in tivati	**************************************	60					and the second of the	60
Turn Type					2		Split	4			C	ustom
Protected Phases Permitted Phases							1	1				1
Actuated Green, G (s)					25.0		35.5	35.5				35.5
Effective Green, g (s)					26.0		36.0	36.0				36.0
Actuated g/C Ratio					0.37		0.51	0.51				0.51
Clearance Time (s)					5.0		4.5	4.5				4.5
Lane Grp Cap (vph)				***************************************	2294		910	2615		and the state of the		1366
v/s Ratio Prot					c0.22		0.09	c0.18				1000
v/s Ratio Perm					00.22		0,00	00.10				0.14
v/c Ratio					0.59		0.17	0.36				0.27
Uniform Delay, d1					17.7		9.0	10.1				9.6
Progression Factor					1.00		0.34	0.49				1.00
Incremental Delay, d2					1.1		0.3	0.3				0.5
Delay (s)					18.8		3.4	5.3				10.1
Level of Service					В		Α	Α				В
Approach Delay (s)		0.0			18.8			5.0			10.1	
Approach LOS		Α			В			Α			В	
Intersection Summary												
HCM Average Control D	•		12.4		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.45									
Actuated Cycle Length (70.0			lost time			8.0			
Intersection Capacity Ut	tilization	g in the	68.4%		CU Lev	el of Se	rvice		С			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	NBTL	WBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	40	30	
Maximum Split (%)		42.9%	
Minimum Split (s)	40	30	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	1	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	26.5	16	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	37	7	
End Time (s)	7	37	
Yield/Force Off (s)	2.5		
Yield/Force Off 170(s)	63.5	23	
Local Start Time (s)	5	45	
Local Yield (s)	40.5		
Local Yield 170(s)	31.5	61	
Intersection Summary			

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 32 (46%), Referenced to phase 2:WBT, Start of Yellow

Splits and Phases: 10: L St & 5th St

♣ ↑ .	←
40 s	92 30 s

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Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	SEL2	SEL	SER	
Lane Configurations		414		₽	7	ሻ	1		אווג		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0		4.0		
Lane Util. Factor		0.91		0.95	0.95	0.91	0.91		0.91		
Frpb, ped/bikes		0.99		1.00	1.00	1.00	1.00		0.98		
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00		1.00		
Frt		0.98		0.92	0.85	1.00	1.00		0.97		
Flt Protected		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (prot)		4953		1620	1504	1610	3362		6161		
FIt Permitted		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (perm)		4953		1620	1504	1610	3362		6161		
Volume (vph)	100	2012	273	40	130	170	220	100	1901	587	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	100	2012	273	40	130	170	220	100	1901	587	
RTOR Reduction (vph)	0	17	0	2	2	0	0	0	0	0	
Lane Group Flow (vph)	0	2368	0	90	76	126	264	0	2588	0	
Confl. Peds. (#/hr)			60					7. · · · · · · · · · · · · · · · · · · ·		60	
Turn Type	Split				Perm	Split		Split			
Protected Phases	3	3		5		1	1	2	2		
Permitted Phases	- (- -	ią Ši			5	·		4.4.5			
Actuated Green, G (s)		36.0		6.5	6.5	6.5	6.5		36.0		
Effective Green, g (s)		36.0		6.0	6.0	6.0	6.0		36.0		
Actuated g/C Ratio		0.36		0.06	0.06	0.06	0.06		0.36		
Clearance Time (s)		4.0		3.5	3.5	3.5	3.5		4.0		
Lane Grp Cap (vph)		1783		97	90	97	202		2218		
v/s Ratio Prot		c0.48		c0.06		0.08	c0.08		c0.42		
v/s Ratio Perm		00.10		00.00	0.05	0.00	00.00		00.12		
v/c Ratio		1.33		0.93	0.85	1.30	1.31		1.17		
Uniform Delay, d1		32.0		46.8	46.5	47.0	47.0		32.0		
Progression Factor		1.00		1.00	1.00	1.07	1.07		1.00		
Incremental Delay, d2		151.7		73.6	59.2	191.0	168.9		80.4		
Delay (s)		183.7		120.3	105.7	241.5	219.4		112.4		
Level of Service		F		120.5	F	F	213.4 F		F		
Approach Delay (s)		183.7		113.6	• • • • • • • • • • • • • • • • • • •		226.5		112.4		
Approach LOS		F		F			F		F		
Intersection Summary											
HCM Average Control D			151.2	ł	HCM Le	vel of S	ervice		F		
HCM Volume to Capaci			1.23								
Actuated Cycle Length (100.0			ost time			16.0		
Intersection Capacity Ut	tilization	•	108.0%		CU Lev	el of Se	rvice		G		
Analysis Period (min)		•	15								
c Critical Lane Group											

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4	4	4	1	ÁÁ
1	2	3	5	6
SBTL	SEL	EBTL	NBT	Ped

Phase Number	1	2	3	5	6	
Movement	SBTL	SEL	EBTL	NBT	Ped	
Lead/Lag	Lead	Lag				
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max	Max	
Maximum Split (s)	10	40	40	10	60	
Maximum Split (%)	10.0%	40.0%	40.0%	10.0%	60.0%	
Minimum Split (s)	7.5	40	40	7.5	60	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0.5	0.5	0	0.5	
Minimum Initial (s)	4	4	4	4	4	
Vehicle Extension (s)	3	3	3	3	3	
Minimum Gap (s)	3	3	3	3	3	
Time Before Reduce (s		0	0	0	0	
Time To Reduce (s)	0	0	0	0	0	
Walk Time (s)		25			45	
Flash Dont Walk (s)		11	11		11	
Dual Entry	Yes	Yes		Yes	Yes	
Inhibit Max	Yes	Yes		Yes		
Start Time (s)	84	94		34		
End Time (s)	94	34		44	44	
Yield/Force Off (s)	90.5	30		40.5	40	
Yield/Force Off 170(s)	90.5	19		40.5	29	
Local Start Time (s)	54	64			54	
Local Yield (s)	60.5	0		10.5	10	
Local Yield 170(s)	60.5	89	39	10.5	99	
		a carrentenantena		40.000000000000000000000000000000000000	Getrans daren	

Cycle Length 100
Control Type Pretimed
Natural Cycle 140

Offset: 30 (30%), Referenced to phase 2:SEL, Start of Yellow

Splits and Phases: 11: J St & 3rd St

ø1	₲ 02	1 ø5	♣ ø3
10 s	40 s	10 s	40 s
ÁÅ ø6			
60 s			

	Þ		7	•	energe s	1	1	Ť	*	1	+	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	4iii	7					ት ኩ	7"			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.81	1.00					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.96					1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.96	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	6030	1514					3254	1441			
FIt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	6030	1514					3254	1441			
Volume (vph)	780	3110	380	0	0	0	0	602	570	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	780	3110	380	0	0	0	0	602	570	0	0	0
RTOR Reduction (vph)	53	2	167	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	668	3167	213	Ō	0	0	0	822	350	0	0	0
Confl. Peds. (#/hr)	60		60	and the second			- 1 - 1 - 1 - 1 - 1 - 1			T	77.5	
Parking (#/hr)	0											
Turn Type	Split		Perm						Perm	ended in outcomes in transfer and		
Protected Phases	1	1						2				
Permitted Phases		Nasa (Nasa (Mili)	1					-	2			
Actuated Green, G (s)	56.0	56.0	56.0					36.0	36.0			
Effective Green, g (s)	56.0	56.0	56.0					36.0	36.0			
Actuated g/C Ratio	0.56	0.56	0.56					0.36	0.36			
Clearance Time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Grp Cap (vph)	722	3377	848					1171	519			
v/s Ratio Prot	0.52	c0.53	040					c0.25	010			
v/s Ratio Perm	0.52	60.55	0.14					00.20	0.24			
v/c Ratio	0.93	0.94	0.14					0.70	0.24			
	20.1	20.4	11.3					27.4	27.0			
Uniform Delay, d1	0.74	0.76	1.41					1.00	1.00			
Progression Factor	2.6	0.70	0.1					3.5	6.9			
Incremental Delay, d2	17.5	16.1	15.9					30.9	33.9			
Delay (s) Level of Service	17.3 B	10.1 B	10.9 B					30.3 C	55.5 C			
	Ь	16.3	D		0.0			31.8			0.0	
Approach Delay (s) Approach LOS		10.3 B			0.0 A			51.0 C			Α	
Intersection Summary			JV-ROTE			3						
HCM Average Control [Delay		19.7		HCM Le	vel of S	ervice		В			-1147
HCM Volume to Capac	ity ratio		0.85									
Actuated Cycle Length (s)			100.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity U		1	84.4%		ICU Lev				Е			
Analysis Period (min) c Critical Lane Group			15									

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Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	60	40	
Maximum Split (%)	60.0%	40.0%	
Minimum Split (s)	60	40	
Yellow Time (s)	4	4	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	44	20	
Flash Dont Walk (s)	12	16	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	43	3	
End Time (s)	3	43	
Yield/Force Off (s)	99	39	
Yield/Force Off 170(s)	87	23	
Local Start Time (s)	44	4	
Local Yield (s)	0	40	
Local Yield 170(s)	88	24	
	8016-7962A-1-797-29178-29-51-19	BREAD BY THE STATE OF THE STATE	

Cycle Length 100
Control Type Pretimed
Natural Cycle 100

Offset: 99 (99%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 12: J St & 5th St

♣ ø1	† ø2
60 s	40 s

	<u></u>	-	*	*	4	1	1	1	~	1	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					###		44	ተተ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		0.97	0.95				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.99		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6136		3433	3362				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6136		3433	3362				
Volume (vph)	0	0	0	0	1210	110	170	1162	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	1210	110	170	1162	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	29	0	5	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1291	0	165	1162	0	0	0	0
Confl. Peds. (#/hr)						60						
Parking (#/hr)					0			0				
Turn Type							Split					
Protected Phases					1		2	2				
Permitted Phases												
Actuated Green, G (s)					16.5		26.5	26.5				
Effective Green, g (s)					16.0		26.0	26.0				
Actuated g/C Ratio					0.32		0.52	0.52				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)		Yana Ya			1964		1785	1748				
v/s Ratio Prot					c0.21		0.05	c0.35				
v/s Ratio Perm												
v/c Ratio					0.66		0.09	0.66				
Uniform Delay, d1					14.6		6.1	8.8				
Progression Factor					1.00		1.34	1.40				
Incremental Delay, d2					1.7		0.1	1.1				
Delay (s)					16.4		8.2	13.4				
Level of Service					В		Α	В				
Approach Delay (s)		0.0			16.4			12.7			0.0	
Approach LOS		Α			В			В			Α	
Intersection Summary												
HCM Average Control I HCM Volume to Capaci			14.5 0.66		HCM Le	vel of S	ervice		В			
Actuated Cycle Length			50.0									
Intersection Capacity U		1	117.1%			el of Se			Н			
Analysis Period (min)			15									
c Critical Lane Group												

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Phase Number	1	2	
Movement	WBT	NBTL	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	20	30	
Maximum Split (%)	40.0%		
Minimum Split (s)	20	30	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	5.5 11	14.5	
Flash Dont Walk (s)	Yes	12 Yes	
Dual Entry Inhibit Max	Yes	Yes	
Start Time (s)	15.5	35.5	
End Time (s)	35.5	15.5	
Yield/Force Off (s)	32	12.3	
Yield/Force Off 170(s)	21	0	
Local Start Time (s)	33.5	3.5	
Local Yield (s)	0	30	
Local Yield 170(s)	39	18	
Intersection Summary			

Cycle Length 50 Control Type Pretimed Natural Cycle 50

Offset: 32 (64%), Referenced to phase 1:WBT, Start of Yellow

Splits and Phases: 13: I St & 5th St

← ø1	√ _{ø2}
20 s	30 s

	→		7	•	4	1	1	†	<i>></i>	1	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተጉ		ħ	ተተቡ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.91		0.86	0.86				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4867		1522	4806				
FIt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4867		1522	4806		***************************************		
Volume (vph)	0	0	0	0	815	210	400	1420	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	815	210	400	1420	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	48	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1019	0	352	1420	0	0	0	0
Confl. Peds. (#/hr)		10.24 a v A 1 a 1			Markey Works	60		estati astatori		na Carragna vi na		u Art Meen, No. 6
Turn Type							Split					
Protected Phases					4		2	2				
Permitted Phases					04.5		04.5	04.5				
Actuated Green, G (s)					21.5		21.5	21.5				
Effective Green, g (s)					21.0		21.0 0.42	21.0 0.42				
Actuated g/C Ratio					0.42 3.5		3.5	3.5				
Clearance Time (s)												
Lane Grp Cap (vph)					2044		639 0.23	2019 c0.30				
v/s Ratio Prot v/s Ratio Perm					c0.21		0.23	CU.3U				
v/c Ratio					0.50		0.55	0.70				
Uniform Delay, d1					10.6		10.9	11.9				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.9		3.4	2.1				
Delay (s)					11.5		14.3	14.0				
Level of Service					В		14.5 B	14.0				
Approach Delay (s)		0.0			11.5			14.1			0.0	
Approach LOS		Α			В			В			Α.	
Intersection Summary		•			_							
HCM Average Control D		13.2	l	HCM Le	evel of S	ervice		В				
HCM Volume to Capaci		0.60										
Actuated Cycle Length		50.0		Sum of	lost time	e (s)		8.0				
Intersection Capacity U	n e e e e e e e e e e e e e e e e e e e	55.5%			el of Se			В				
Analysis Period (min)			15									
c Critical Lane Group												

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Phase Number	2	4	
Movement	NBTL	WBT	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	21.5	21.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	10	10	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	48.5	23.5	
End Time (s)	23.5	48.5	
Yield/Force Off (s)	20	45	
Yield/Force Off 170(s)		37	
Local Start Time (s)	3.5	28.5	
Local Yield (s)	25	0	
Local Yield 170(s)	17	42	
	Barrier free over 1995		

Cycle Length 50
Control Type Pretimed
Natural Cycle 45

Offset: 45 (90%), Referenced to phase 4:WBT, Start of Yellow

Splits and Phases: 14: L St & 16th St

↑ _{ø2}	← _{ø4}
25 s	25 s

	۶	_	-	*	4-	1	4	†	<i>></i>	1	Į.	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4111									ተተጉ	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.99									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.96									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		6100									5013	
FIt Permitted		1.00									0.99	
Satd. Flow (perm)		6100									5013	
Volume (vph)	0	1148	380	0	0	0	0	0	0	244	600	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1148	380	0	0	0	0	0	0	244	600	0
RTOR Reduction (vph)	0	35	0	0	0	0	0	0	0	0	45	0
Lane Group Flow (vph)	0	1493	0	0	0	0	0	0	0	0	799	0
Confl. Peds. (#/hr)			60							60		
Parking (#/hr)										0		0
Turn Type										Split		
Protected Phases		2								1	1	
Permitted Phases												
Actuated Green, G (s)		27.5									15.5	
Effective Green, g (s)		27.0									15.0	
Actuated g/C Ratio		0.54									0.30	
Clearance Time (s)		3.5									3.5	
Lane Grp Cap (vph)		3294									1504	
v/s Ratio Prot		c0.24									c0.16	
v/s Ratio Perm												
v/c Ratio		0.45									0.53	
Uniform Delay, d1		7.0									14.6	
Progression Factor		1.00									0.23	
Incremental Delay, d2		0.5									0.9	
Delay (s)		7.5									4.2	
Level of Service		Α									Α	
Approach Delay (s)		7.5			0.0			0.0			4.2	
Approach LOS		Α			Α			Α			Α	
Intersection Summary												
HCM Average Control [6.3		HCM Le	evel of S	ervice		Α			
HCM Volume to Capaci			0.48	ne i de la Cas	Curs of	laat time :	(a)		0.0			
Actuated Cycle Length			50.0			lost time			8.0			
Intersection Capacity U	unzation	l	47.3%		icu Lev	el of Se	vice		A			
Analysis Period (min)			15									
 c Critical Lane Group 												



	•		
Phase Number	1	2	
Movement	SBTL	EBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max		
Maximum Split (s)	19	31	
Maximum Split (%)		62.0%	
Minimum Split (s)	18.5		
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s			
Time To Reduce (s)	0		
Walk Time (s)	7	19	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes		
Start Time (s)	22.5		
End Time (s)	41.5		
Yield/Force Off (s)	38	19	
Yield/Force Off 170(s)	30		
Local Start Time (s)	3.5		
Local Yield (s)	19		
Local Yield 170(s)	11	42	
	au thores on lauration reductor of		

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 19 (38%), Referenced to phase 2:EBT, Start of Yellow

Splits and Phases: 1: Q St & 3rd St

▶ ø1	→ ø2
19s	31 2

	<u></u>	-	*	1	4	1	*	†	/	1	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተኩ						ተተ	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0						4.0	4.0
Lane Util. Factor					0.91						0.95	0.88
Frpb, ped/bikes					1.00						1.00	0.93
Flpb, ped/bikes					1.00						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					4901						3362	2589
FIt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					4901						3362	2589
Volume (vph)	0	0	0	170	2710	0	0	0	0	0	674	1155
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	170	2710	0	0	0	0	0	674	1155
RTOR Reduction (vph)	0	0	0	0	14	0	0	0	0	0	0	1
Lane Group Flow (vph)	Ö	ő	ő	ő	2866	ő	Ö	Ö	ő	ő	674	1154
Confl. Peds. (#/hr)		0		60	2000						0, ,	60
Parking (#/hr)				0	0						0	-00
Turn Type				Split				<u> </u>				Perm
Protected Phases				2 2	2						1	L CIIII
Permitted Phases				_								1
					27.5						15.5	15.5
Actuated Green, G (s)					27.0						15.0	15.0
Effective Green, g (s)					0.54						0.30	0.30
Actuated g/C Ratio					3.5						3.5	3.5
Clearance Time (s)				4, 6 × 385 Av						g zwiere, kon		777
Lane Grp Cap (vph)					2647						1009	111
v/s Ratio Prot					c0.58						0.20	-0.45
v/s Ratio Perm					4.00						0.07	c0.45
v/c Ratio					1.08						0.67	1.48
Uniform Delay, d1					11.5						15.3	17.5
Progression Factor					1.00						1.00	1.00
Incremental Delay, d2					44.7						3.5	225.0
Delay (s)					56.2						18.8	242.5
Level of Service					E						В	F
Approach Delay (s)		0.0			56.2			0.0			160.1	
Approach LOS		Α			Ε			Α			F	
Intersection Summary									_			
HCM Average Control E HCM Volume to Capaci			96.5 1.23		HCM Le	evel of S	ervice		F			
Actuated Cycle Length (50.0		Sum of	lost time	e (s)		8.0			
Intersection Capacity Ut		1 1	07.4%			el of Se			G			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2
Movement	SBT	WBTL
Lead/Lag	Lead	Lag
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	19	31
그렇지 얼룩하는 아니는 아니는 아이들은 아이들은 아이들은 아이들은 아이들은 아이들이 되었다.		62.0%
Minimum Split (s)	18.5	30.5
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	0
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s)		0
Time To Reduce (s)	0	0
Walk Time (s)	7	19
Flash Dont Walk (s)	8	8
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes
Start Time (s)	12.5	31.5
End Time (s)	31.5	12.5
Yield/Force Off (s)	28	9
Yield/Force Off 170(s)	20	1
Local Start Time (s)	3.5	22.5
Local Yield (s)	19	0
Local Yield 170(s)	11	42
Intersection Summary		

Cycle Length 50
Control Type Pretimed
Natural Cycle 75

Offset: 9 (18%), Referenced to phase 2:WBTL, Start of Yellow

Splits and Phases: 2: P St & 3rd St

₩ ø1	₹ ø2
19 s	31 8

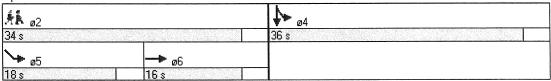
	*	-	+	1	*		
EBT	EBR	SBL	SBT	SEL	SER		
ĵ _a			444	ት			
1900	1900	1900	1900	1900	1900		
4.0			4.0	4.0			
			0.91	0.97			
	20	106			430		
90			1010	730			
	60						
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3.5							
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c0.06			c0.30	c0.23			
0.32			0.66	1.34dr			
			14.7	28.0			
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20 CO CO CO - PROPERTY - P.				HCM Le	vel of Service	D	
				<u>Lienera Torriso</u>	na wakazione wa kata wa 1971 ilia		
tilizatior	1	73.2%		ICU Lev	el of Service	D	
		15					
	\$1900 4.0 1.00 0.98 1.00 1.780 1.00 1.780 1.00 1.00 90 12 98 6 12.5 12.0 0.17 3.5 305 c0.06 0.32 25.4 1.00 2.8 28.2 C	1900 1900 4.0 1.00 0.98 1.00 0.98 1.00 1780 1.00 1780 90 20 1.00 1.00 90 20 12 0 98 0 60 6 12.5 12.0 0.17 3.5 305 c0.06 0.32 25.4 1.00 2.8 28.2 C 28.2 C C Oelay ity ratio	1900 1900 1900 4.0 1.00 0.98 1.00 1780 1.00 1780 1.00 1780 90 20 196 1.00 1.00 1.00 90 20 196 12 0 0 98 0 0 60 60 0 Split 6 4 12.5 12.0 0.17 3.5 305 c0.06 0.32 25.4 1.00 2.8 28.2 C 28.2 C 28.2 C 28.2 C Oelay 41.1 ity ratio (s) 70.0	1900 1900 1900 1900 1900 4.0	1900 1900 1900 1900 1900 1900 4.0 4.0 4.0 4.0 4.0 1.00	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1.00	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1.00

	ÁŘ	*	\		
Phase Number	2	4	5	6	
Movement	Ped	SBTL	SEL	EBT	
Lead/Lag			Lead	Lag	
Lead-Lag Optimize					
Recall Mode	Max	Max	Max	Max	
Maximum Split (s)	34	36	18	16	
Maximum Split (%) 48	8.6%	51.4%	25.7%	22.9%	
Minimum Split (s)	34	36	7.5	16	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0	0	0	
Minimum Initial (s)	4	4		4	
Vehicle Extension (s)	3	3	3	3	
Minimum Gap (s)	3	3	3	3	
Time Before Reduce (s)	0	0	0	0	
Time To Reduce (s)	0	0	0	0	
Walk Time (s)	19.5	23.5		4.5	
Flash Dont Walk (s)	11	9		8	
Dual Entry	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	
Start Time (s)	12.5	46.5	12.5	30.5	
End Time (s)	46.5	12.5	30.5		
Yield/Force Off (s)	43	_	27	43	
Yield/Force Off 170(s)	32				
Local Start Time (s)	3.5	37.5			
	34	0	18		
Local Yield (s)	23		18	26	

Cycle Length 70
Control Type Pretimed
Natural Cycle 75

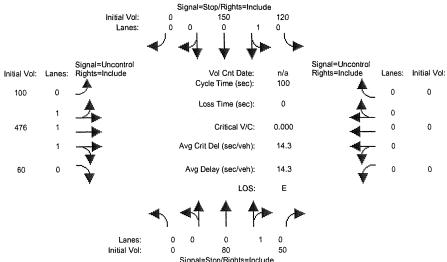
Offset: 9 (13%), Referenced to phase 4:SBTL, Start of Yellow

Splits and Phases: 3: N St & 3rd St



Level Of Service Computation Report 2000 HCM Unsignalized (Future Volume Alternative) 2025+Project PM

Intersection #4: N St./4th St.



11134	Signal	=Stop/Rights=Include					
Street Name:	4th	St			N St		
		South Bo	und	East B	ound	West Bo	und
Movement: L -	T - R	L - T	- R	L - T	- R L	- T	- R
Volume Module:							
Base Vol: 0	80 50	120 150	0	100 476	60	0 0	0
Growth Adj: 1.00	1.00 1.00	1.00 1.00	1.00	1.00 1.00		00 1.00	1.00
Initial Bse: 0	80 50	120 150	0	100 476	60	0 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
Initial Fut: 0		120 150	0	100 476		0 0	0
User Adj: 1.00		1.00 1.00	1.00	1.00 1.00		00 1.00	1.00
PHF Adj: 1.00		1.00 1.00	1.00	1.00 1.00		00 1.00	1.00
PHF Volume: 0	80 50	120 150	0	100 476		0 0	0
Reduct Vol: 0	0 0	0 0	0	0 0		0 0	0
Final Vol.: 0		120 150	0	100 476	60	0 0	0
Critical Gap Modul							
Critical Gp:xxxxx	6.5 6.2	7.1 6.5	XXXXX	4.1 xxxx	XXXXX XXX	xxx xxx	XXXXX
FollowUpTim:xxxxx		3.5 4.0					
Capacity Module:							
Cnflict Vol: xxxx							
Potent Cap.: xxxx							
Move Cap.: xxxx							
Volume/Cap: xxxx				0.06 xxxx		XXX XXXX	
Level Of Service M		11					
Queue: XXXXX		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	VVVVV	0 2 2222	XXXXX XXX	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	vvvvv
Stopped Del:xxxxx					XXXXX XX		
LOS by Move: *	* *	* *	*	7.4 AAAA *			*
Movement: LT -					- RT]		— RT
Shared Cap.: xxxx					XXXXX X		
SharedQueue:xxxxx	xxxx 1 3	6 4 xxxx	XXXXX		XXXXX XX		
Shrd StpDel:xxxxx					XXXXX XX		
Shared LOS: *			*	A *		* *	*
	17.0	44.0		XXXXXX	:	xxxxxx	
ApproachLOS:		E		*		*	

	ၨ	-	*	•	4		1	†	~	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		ተተጉ						ተተጐ				AND CONTRACTOR OF THE CONTRACT
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.97				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		5050						4902				
FIt Permitted		0.99						1.00				
Satd. Flow (perm)		5050						4902				
Volume (vph)	90	556	0	0	0	0	0	1143	250	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	90	556	0	0	0	0	0	1143	250	0	0	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	50	0	0	0	0
Lane Group Flow (vph)	Ö	628	ő	ő	ő	ő	Ö	1343	0	0	0	0
Confl. Peds. (#/hr)	60	020	0	30 p. 300 9 .0	.	U	U	10-0	60	0	V	U
Parking (#/hr)	0		0						0			
Turn Type	Split		U						U			
Protected Phases	3piit 1	1						_				
								2				
Permitted Phases		24 5						04.5				
Actuated Green, G (s)		31.5						31.5				
Effective Green, g (s)		31.0						31.0				
Actuated g/C Ratio		0.44						0.44				
Clearance Time (s)		3.5	ranka a a a a a a a a a a	Andrew Commence	an a la file to se la			3.5	NAC SECUE AND SEC		100000000000000000000000000000000000000	Project Company
Lane Grp Cap (vph)		2236						2171				
v/s Ratio Prot		c0.12						c0.27				
v/s Ratio Perm												
v/c Ratio		0.28						0.62				
Uniform Delay, d1		12.4						15.0				
Progression Factor		1.39						1.00				
Incremental Delay, d2		0.2						1.3				
Delay (s)		17.6						16.3				
Level of Service		В						В				
Approach Delay (s)		17.6			0.0			16.3			0.0	
Approach LOS		В			Α			В			Α	
Intersection Summary												
HCM Average Control I			16.7		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.45		2.0	in a second						
Actuated Cycle Length	2.050000		70.0		Sum of				8.0			
Intersection Capacity U	tilization	l	47.7%		ICU Lev	el of Se	rvice		Α			
Analysis Period (min) c Critical Lane Group			15									

4	t
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Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	35	35	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	34.5	34.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s		0	
Time To Reduce (s)	0	0	
Walk Time (s)	22	22	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	65.5	30.5	
End Time (s)	30.5	65.5	
Yield/Force Off (s)	27	62	
Yield/Force Off 170(s)	18	53	
Local Start Time (s)	38.5	3.5	
Local Yield (s)	0	35	
Local Yield 170(s)	61	26	
Intersection Summary			

Cycle Length 70 Control Type Pretimed Natural Cycle 70

Offset: 27 (39%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 5: N St & 5th St

<u>*</u>	
o1	I ø2
35 s	35 s

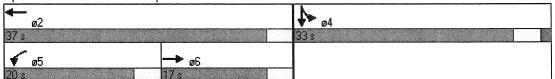
HCM Signalized Intersection Capacity Analysis
6: Capitol Mall & 3rd S&025 Plus Project Conditions - PM Peak No 2-Way Conversion L-Capitol - MITIGATED

Lane Configurations Ideal Flow (vphpl) 19 Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1. Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	BL EBT	1900	WBL 1900 4.0 1.00 1.00 1.00 0.95	1900 4.0 0.95 1.00 1.00	1900	NBL 1900	1900	NBR 1900	SBL 1900	SBT 41113- 1900 4.0	SBR 1900
Ideal Flow (vphpl) 19 Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1. Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	000 1900 4.0 0.91 0.99 1.00 0.99 1.00 5022 1.00	1900	1900 4.0 1.00 1.00 1.00 1.00	1900 4.0 0.95 1.00 1.00	1900	1900	1900	1900	1900	1900 4.0	1900
Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1. Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	000 1900 4.0 0.91 0.99 1.00 0.99 1.00 5022 1.00	1900	4.0 1.00 1.00 1.00 1.00	4.0 0.95 1.00 1.00	1900	1900	1900	1900	1900	4.0	1900
Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1. Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	0.91 0.99 1.00 0.99 1.00 5022 1.00		1.00 1.00 1.00 1.00	0.95 1.00 1.00							
Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1. Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	0.99 1.00 0.99 1.00 5022 1.00 5022		1.00 1.00 1.00	1.00 1.00							
Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1. Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	1.00 0.99 1.00 5022 1.00 5022		1.00 1.00	1.00						0.86	
Frt Flt Protected Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1. Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	0.99 1.00 5022 1.00 5022		1.00							1.00	
Fit Protected Satd. Flow (prot) Fit Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1. Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	1.00 5022 1.00 5022									1.00	
Satd. Flow (prot) Flt Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	5022 1.00 5022		0.95	1.00						0.93	
Fit Permitted Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	1.00 5022			1.00						1.00	
Satd. Flow (perm) Volume (vph) Peak-hour factor, PHF 1. Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	5022		1770	3539						5943	
Volume (vph) Peak-hour factor, PHF 1. Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)			0.95	1.00						1.00	
Peak-hour factor, PHF 1. Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	0 766		1770	3539					1000000	5943	
Peak-hour factor, PHF 1. Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	0 100	40	367	745	0	0	0	0	211	1148	1145
Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	0 766	40	367	745	0	0	0	0	211	1148	1145
Lane Group Flow (vph) Confl. Peds. (#/hr) Parking (#/hr)	0 8	0	0	0	0	0	0	0	0	80	(
Confl. Peds. (#/hr) Parking (#/hr)	0 798	0	367	745	0	0	0	0	0	2424	(
Parking (#/hr)		60									
									0		
Turn Type			Prot					***************************************	Split		
Protected Phases	6)	5	2					4	4	
Permitted Phases										1000 7400 400 400 600 600	
Actuated Green, G (s)	13.5	j	16.5	33.5						28.0	
Effective Green, g (s)	13.0)	16.0	33.0					E-042546 MM-52145 4045 DM	29.0	
Actuated g/C Ratio	0.19	}	0.23	0.47						0.41	
Clearance Time (s)	3.5		3.5	3.5						5.0	
Lane Grp Cap (vph)	933	}	405	1668						2462	
v/s Ratio Prot	c0.16		c0.21	0.21						c0.41	
v/s Ratio Perm											
v/c Ratio	0.86	3	0.91	0.45						1.53dr	
Uniform Delay, d1	27.6		26.3	12.4						20.3	
Progression Factor	1.00		0.84	0.60						0.66	
Incremental Delay, d2	9.9		24.7	0.8						9.2	
Delay (s)	37.5		46.9	8.2						22.6	
Level of Service	E		D	Α						С	
Approach Delay (s)	37.5			21.0			0.0			22.6	AMERICAN SALE
Approach LOS	Ε)		С			Α			С	
\$2.23P-30F-40500019-MADD (0.0000000000000000000000000000000000											
Intersection Summary HCM Average Control Dela		24.0		HCM Le	val of C	onvioo		С			
		24.9		TOM LE	vei ui Si	SI VICE		· C			
HCM Volume to Capacity ra	aแบ	0.93		Sum of I	oot timo	(6)		12.0			
Actuated Cycle Length (s)		70.0		Sum of I	USI IIIIIA						
Intersection Capacity Utiliza	ntinn	OE 40/									
Analysis Period (min)	ation	85.4%		CU Lev				12.0 E			
dr Defacto Right Lane. R		15		CU Lev	el of Sei						

Timing Report, Sorted By Phase 6: Capitol Mall & 3rd St 025 Plus Project Conditions - PM Peak No 2-Way Conversion L-Capitol - MITIGATED

	4	4	•	-
Phase Number	2	4	5	6
Movement	WBT	SBTL	WBL	EBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize		resident ner State State		
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	37	33	20	17
Maximum Split (%)	52.9%	47.1%	28.6%	24.3%
Minimum Split (s)	37	9	20	17
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0	1.5	0	0
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)		0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	23.5		5.5	3.5
Flash Dont Walk (s)	10		11	10
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes		
Start Time (s)	6.5	43.5		
End Time (s)	43.5	6.5		43.5
Yield/Force Off (s)	40			40
Yield/Force Off 170(s)	30			30
Local Start Time (s)	53.5			
Local Yield (s)	17			
Local Yield 170(s)	7	48.5	59	7
Intersection Summary				
Cycle Length			70	
Control Type		Р	retimed	
Natural Cycle			75	
Offset: 23 (33%), Refer	enced t	to phase	e 2:WB7	r and 5:\

Splits and Phases: 6: Capitol Mall & 3rd St



HCM Signalized Intersection Capacity Analysis

7: Capitol Mall & 4th St2025 Plus Project Conditions - PM Peak No 2-Way Conversion L-Capitol - MITIGATED

	۶	→	*	•	4	•	4	†	~	-	1	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	75	ተተ	77		414			4			4	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	70.070 (10.00) (10.00) (10.00) (10.00)	4.0	memoral control of		4.0		50 (4) + 60 (6) + 60 (6) (6) (6) (6) (6) (6) (6) (6) (6) (6)	4.0	15-000-10000-1000
Lane Util. Factor	1.00	0.95	1.00		0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.87		0.99			0.99	00000000000000000000000000000000000000		0.97	STATE OF STA
Flpb, ped/bikes	0.98	1.00	1.00		1.00			0.99			0.99	
Frt	1.00	1.00	0.85		0.99			0.98		10000000000000000000000000000000000000	0.96	NOT THE PROPERTY OF
Flt Protected	0.95	1.00	1.00		1.00			0.99			0.99	
Satd. Flow (prot)	1729	3539	1380		4955			1584	C 1820 P. A. C. S.		1524	
Flt Permitted	0.23	1.00	1.00		0.93			0.82			0.90	
Satd. Flow (perm)	416	3539	1380		4628			1318			1381	
Volume (vph)	218	719	40	10	940	94	70	130	30	69	150	102
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	218	719	40	10	940	94	70	130	30	69	150	102
RTOR Reduction (vph)	0	0	19	0	17	0	0	8	0	0	24	0
Lane Group Flow (vph)	218	719	21	0	1027	0	0	222	0	0	297	0
Confl. Peds. (#/hr)	60		60	60		60	60		60	60		60
Parking (#/hr)							0	0	0	0	0	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4			4		
Actuated Green, G (s)	38.0	38.0	38.0		38.0			23.5			23.5	
Effective Green, g (s)	37.5	37.5	37.5		37.5			24.5			24.5	
Actuated g/C Ratio	0.54	0.54	0.54		0.54			0.35			0.35	
Clearance Time (s)	3.5	3.5	3.5		3.5			5.0			5.0	
Lane Grp Cap (vph)	223	1896	739		2479			461		The second second	483	
v/s Ratio Prot		0.20										
v/s Ratio Perm	c0.52	5.25	0.02		0.22			0.17			c0.21	
v/c Ratio	0.98	0.38	0.03		0.41			0.48			0.61	
Uniform Delay, d1	15.8	9.5	7.7		9.7			17.8			18.8	
Progression Factor	1.95	2.08	3.94		0.21			0.79			1.00	
Incremental Delay, d2	34.9	0.3	0.0		0.5			3.4			5.5	
Delay (s)	65.7	19.9	30.2		2.5			17.5			24.4	
Level of Service	Е	В	С		Α			В			С	
Approach Delay (s)		30.6			2.5			17.5			24.4	
Approach LOS		С			Α			В			С	
Intersection Summary												
HCM Average Control [17.2	ł	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.83									
Actuated Cycle Length			70.0			ost time			8.0			
Intersection Capacity U	tilization		73.6%	1	CU Lev	el of Se	rvice		D			
Analysis Period (min)			15									
c Critical Lane Group												

7: Capitol Mall & 4th St2025 Plus Project Conditions - PM Peak No 2-Way Conversion L-Capitol - MITIGATED

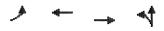


Phase Number	2	4
Movement	EBWB	NBSB
Lead/Lag		
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	41.5	28.5
Maximum Split (%)	59.3%	40.7%
Minimum Split (s)	22.5	20
Yellow Time (s)	3.5	3.5
All-Red Time (s)	0	1.5
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (0
Time To Reduce (s)	0	0
Walk Time (s)	9	5
Flash Dont Walk (s)	10	10
Dual Entry	Yes	Yes
Inhibit Max	Yes	Yes
Start Time (s)	59	30.5
End Time (s)	30.5	59
Yield/Force Off (s)	27	54
Yield/Force Off 170(s		44
Local Start Time (s)	32	3.5
Local Yield (s)	0	27
Local Yield 170(s)	60	17
Intersection Summary	1	
Cycle Length		
Control Type		Pre
Natural Cycle		
Offset: 27 (39%), Ref	erenced t	o phase 2

Splits and Phases: 7: Capitol Mall & 4th St

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L	- ы <u>г</u>	71 87	
8	41 E &	10 K a	

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	77	44			ተተጉ		N. N.	ተተ _ጉ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	0.97	0.95			0.91		0.97	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.99		1.00	0.98				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			4971		3433	4943				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			4971		3433	4943				
Volume (vph)	343	476	0	0	660	70	383	840	100	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	343	476	0	0	660	70	383	840	100	0	0	0
RTOR Reduction (vph)	0	0	0	0	19	0	0	21	0	0	0	0
Lane Group Flow (vph)	343	476	Ö	ő	711	0	383	919	0	0	0	0
Confl. Peds. (#/hr)	0-10	470	U	0	5 . F 10 E	60	300	010	60	Ū	U	U
Turn Type	Prot					- 00	Split					
Protected Phases	1	6			2		8	8				
Permitted Phases	i Baranta											
Actuated Green, G (s)	14.5	36.5			18.5		25.0	25.0				
Effective Green, g (s)	14.0	36.0			18.0		26.0	26.0				
Actuated g/C Ratio	0.20	0.51			0.26		0.37	0.37				
Clearance Time (s)	3.5	3.5			3.5		5.0	5.0				
Lane Grp Cap (vph)	687	1820			1278	1950	1275	1836				
v/s Ratio Prot	c0.10	0.13					0.11	c0.19				
v/s Ratio Prot v/s Ratio Perm	CO. 10	0.13			c0.14		0.11	CO. 19				
v/c Ratio	0.50	0.26			0.56		0.20	0.50				
	0.50	0.26			0.56		0.30	0.50				
Uniform Delay, d1	24.9	9.5			22.5		15.6	17.0				
Progression Factor	0.76	0.60			1.00		0.44	0.40				
Incremental Delay, d2	2.4	0.3			1.8		0.5	0.8				
Delay (s)	21.4	6.1			24.3		7.4	7.6				
Level of Service	С	A			C		Α	A			0.0	
Approach Delay (s)		12.5			24.3			7.5			0.0	
Approach LOS		В			С			Α			Α	
Intersection Summary												
HCM Average Control [13.2		HCM Le	evel of S	ervice		В			
HCM Volume to Capaci			0.52									
Actuated Cycle Length			70.0			lost time			12.0			
Intersection Capacity U	tilization		53.5%		ICU Lev	el of Se	rvice		Α			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	6	8
Movement	EBL	WBT	EBT	NBTL
Lead/Lag	Lag	Lead		
Lead-Lag Optimize				
Recall Mode	Max	Max	Max	Max
Maximum Split (s)	18	22	40	30
Maximum Split (%)	25.7%		57.1%	42.9%
Minimum Split (s)	7.5	20.5	20.5	17
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0	0	0	1.5
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s) 0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)		7	7	7
Flash Dont Walk (s)		10	10	5
Dual Entry	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	20.5	68.5		38.5
End Time (s)	38.5	20.5	38.5	68.5
Yield/Force Off (s)	35	17	35	63.5
Yield/Force Off 170(s)		7		58.5
Local Start Time (s)	55.5	33.5		3.5
Local Yield (s)	0	52		28.5
Local Yield 170(s)	0	42	60	23.5

Cycle Length 70
Control Type Pretimed
Natural Cycle 50

Offset: 35 (50%), Referenced to phase 1:EBL and 6:EBT, Start of Yellow

Splits and Phases: 8: Capitol Mall & 5th St

← ø2	01 همر	√ ₀8
22 s	18 s	30 s
→ ø6 40 s		

HCM Signalized Intersection Capacity Analysis

9: L St & 3rd St

2025 Plus Project Conditions - PM Peak No 2-Way Conversion L-Capitol - MITIGATED

	<i>></i>		*	•	4	4	1	†	~	1	Ţ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				ሻ	414	77					ተተቡ	***************************************
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0					4.0	man new re-resident der wirden
Lane Util. Factor				0.91	0.91	1.00					0.91	
Frt				1.00	1.00	0.85					0.99	and an extension of the property.
Flt Protected				0.95	0.99	1.00					1.00	
Satd. Flow (prot)				1610	3363	1583					5042	
FIt Permitted				0.95	0.99	1.00					1.00	
Satd. Flow (perm)				1610	3363	1583					5042	
Volume (vph)	0	0	0	1123	1474	390	0	0	0	0	1329	80
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1123	1474	390	0	0	0	0	1329	80
RTOR Reduction (vph)	0	0	0	1	1	167	0	0	0	0	10	0
Lane Group Flow (vph)	0	0	0	836	1759	223	0	0	0	0	1399	0
Turn Type			C	ustom	(custom						
Protected Phases											4	
Permitted Phases				2	2	2						
Actuated Green, G (s)				40.5	40.5	40.5					22.5	
Effective Green, g (s)				40.0	40.0	40.0					22.0	
Actuated g/C Ratio				0.57	0.57	0.57					0.31	
Clearance Time (s)				3.5	3.5	3.5					3.5	
Lane Grp Cap (vph)				920	1922	905					1585	
v/s Ratio Prot							of nation-29 Yourself (1950) or 1				c0.28	Madding (10 (10 (10 (10 (10 (10 (10 (10 (10 (10
v/s Ratio Perm				0.52	c0.52	0.14						
v/c Ratio				0.91	0.92	0.25			10.00 Comment of the		0.88	
Uniform Delay, d1				13.4	13.5	7.5					22.8	
Progression Factor				0.77	0.77	0.44					1.00	
Incremental Delay, d2				13.8	7.9	0.6					7.5	
Delay (s)				24.1	18.3	3.9					30.3	
Level of Service				С	В	Α					С	
Approach Delay (s)		0.0			18.0			0.0			30.3	
Approach LOS		Α			В			Α			С	
Intersection Summary												
HCM Average Control D	elav		22.0	1	ICM Le	vel of S	ervice		С			
HCM Volume to Capacit			0.90						formula (1994), a			
Actuated Cycle Length (70.0	(Sum of	ost time	e (s)		8.0			
Intersection Capacity Uti			83.0%			el of Se			Ē			
Analysis Period (min)			15						_			
c Critical Lane Group												



Phase Number	2	4
Movement	WBTL	SBT
Lead/Lag		
Lead-Lag Optimize		
Recall Mode	Max	Max
Maximum Split (s)	44	26
Maximum Split (%)	62.9%	37.1%
Minimum Split (s)	7.5	20
Yellow Time (s)	3.5	
All-Red Time (s)	0	0
Minimum Initial (s)	4	4
Vehicle Extension (s)	3	3
Minimum Gap (s)	3	3
Time Before Reduce (s		0
Time To Reduce (s)	0	0
Walk Time (s)	not have vice at temporarie of call (AVM 1114m)	8.5
Flash Dont Walk (s)		8
Dual Entry	Yes	TO A STATE OF THE
Inhibit Max	Yes	
Start Time (s)	66.5	and the same application to the first term of th
End Time (s)	40.5	
Yield/Force Off (s)	37	
Yield/Force Off 170(s)	37	
Local Start Time (s)	3.5	
Local Yield (s)	44	
Local Yield 170(s)	44	62
Intersection Summary		
Cycle Length		
Control Type		Pre

Splits and Phases: 9: L St & 3rd St

Offset: 63 (90%), Referenced to phase 4:SBT, Start of Yellow

Natural Cycle

₩ ø2	₩ ø4
44.8	26 s

65

lavomost			•	Ψ.			,	1	- 1	-	W	-65
/lovement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
ane Configurations					†††}		ħ	ተተተ				77
deal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
ane Util. Factor					0.86		1.00	0.91				0.88
Frpb, ped/bikes					1.00		1.00	1.00				0.93
Ipb, ped/bikes					1.00		1.00	1.00				1.00
-int					0.99		1.00	1.00				0.85
FIt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					6289		1770	5085				2585
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					6289		1770	5085				2585
Volume (vph)	0	0	0	0	2066	220	440	813	0	0	0	240
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0.00	0	0.00	0.00	2066	220	440	813	0	0	0.00	240
RTOR Reduction (vph)	0	0	0	0	12	0	6	0	0	0	0	8
_ane Group Flow (vph)	0	0	0	0	2274	0	434	813	0	0	0	232
Confl. Peds. (#/hr)	U	U	U	U	2214	60	60	013	U	U	U	60
						- 00						
Furn Type					2		Split	1			C	ustom
Protected Phases							1	1				sas ala a
Permitted Phases					40.0		00.5	00.5				1
Actuated Green, G (s)					40.0		20.5	20.5				20.5
Effective Green, g (s)					41.0		21.0	21.0				21.0
Actuated g/C Ratio					0.59		0.30	0.30				0.30
Clearance Time (s)					5.0		4.5	4.5				4.5
Lane Grp Cap (vph)					3684		531	1526				776
v/s Ratio Prot					c0.36		c0.25	0.16				
v/s Ratio Perm												0.09
v/c Ratio					0.62		0.82	0.53				0.30
Uniform Delay, d1					9.4		22.7	20.4				18.8
Progression Factor					1.00		0.80	0.82				1.00
Incremental Delay, d2					0.8		11.7	1.2				1.0
Delay (s)					10.2		29.9	17.9				19.8
Level of Service					В		С	В				В
Approach Delay (s)		0.0			10.2			22.1			19.8	
Approach LOS		Α			В			С			В	
Intersection Summary											-	
HCM Average Control D			14.8	ł	HCM Le	vel of S	ervice		В			
HCM Volume to Capacit			0.69									
Actuated Cycle Length (70.0			ost time			8.0			
Intersection Capacity Ut Analysis Period (min)	ilization		84.9% 15		CU Lev	el of Se	rvice		E			



Phase Number	1	2	
Movement	NBTL	WBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	45	
Maximum Split (%)	35.7%	64.3%	
Minimum Split (s)	25	45	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	1	1.5	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s)	0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	11.5	31	
Flash Dont Walk (s)	9	9	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	37	62	
End Time (s)	62	37	
Yield/Force Off (s)	57.5	32	
Yield/Force Off 170(s)	48.5	23	
Local Start Time (s)	5	30	
Local Yield (s)	25.5	0	
Local Yield 170(s)	16.5	61	

Cycle Length 70
Control Type Pretimed
Natural Cycle 70

Offset: 32 (46%), Referenced to phase 2:WBT, Start of Yellow

Splits and Phases: 10: L St & 5th St

4.7	· ·
"Y ø1	ø2
25 s	45 s

	۶	-	*	†	-	-	+	•	\	>	
Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	SEL2	SEL	SER	
Lane Configurations	4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	414		f)	7"	Ϋ́	44		አ ነነነላ		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0		4.0		
Lane Util. Factor		0.91		0.95	0.95	0.91	0.91		0.91		
Frpb, ped/bikes		0.99		1.00	1.00	1.00	1.00		0.97		
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00		1.00		
Frt		0.98		0.95	0.85	1.00	1.00		0.96		
Flt Protected		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (prot)		4910		1678	1504	1610	3365		6112		
FIt Permitted		1.00		1.00	1.00	0.95	0.99		0.96		
Satd. Flow (perm)		4910		1678	1504	1610	3365		6112		
Volume (vph)	70	824	126	120	220	380	520	80	1686	653	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	70	824	126	120	220	380	520	80	1686	653	
RTOR Reduction (vph)	0	19	0	13	13	0	0	0	0	0	
Lane Group Flow (vph)	0	1001	0	170	144	290	610	0	2419	0	
Confl. Peds. (#/hr)	•	1001	60	110	1.7.7	200	010	•	2710	60	
Turn Type	Split		- 00		Perm	Split		Split	525-1718-111	- 00	
Protected Phases	3 3	3		5	L CITI	Spiit 1	1	2 Spilt	2		
Permitted Phases				3	5	i Parawa an	a sa Andres		_ 		
Actuated Green, G (s)		19.0		10.0	10.0	17.5	17.5		38.0		
Effective Green, g (s)		19.0		10.0	10.0	17.0	17.0		38.0		
Actuated g/C Ratio		0.19		0.10	0.10	0.17	0.17		0.38		
Clearance Time (s)		4.0		4.0	4.0	3.5	3.5		4.0		
		933		168	150	274	572		2323		
Lane Grp Cap (vph) v/s Ratio Prot		c0.20		c0.10	150	0.18	c0.18		c0.40		
v/s Ratio Prot v/s Ratio Perm		00.20		CO. 10	0.10	0.10	CU. 10		CU.4U		
		1.07		4.04		1.06	1.07		1 124-		
v/c Ratio		1.07		1.01	0.96	1.06	1.07		1.13dr		
Uniform Delay, d1		40.5		45.0	44.8	41.5	41.5		31.0		
Progression Factor		1.00		1.00	1.00	0.95	0.95		1.00		
Incremental Delay, d2		51.2		73.2	64.2	70.1	56.3		30.5		
Delay (s)		91.7		118.2	109.0	109.4	95.6		61.5		
Level of Service		F		F	F	F	F		E 64.5		
Approach Delay (s)		91.7		114.0			100.0		61.5		
Approach LOS		F		F			F		E		
Intersection Summary											
HCM Average Control [79.3	I	HCM Le	vel of S	ervice		E		
HCM Volume to Capaci			1.05								
Actuated Cycle Length			100.0		Sum of I				16.0		
Intersection Capacity U	tilizatior	ř	98.4%		ICU Lev	el of Se	rvice		F		
Analysis Period (min)			15		zeras er talasieren.	ante ana					
dr Defacto Right Lane	. Reco	de with	1 thoug	h lane a	as a righ	it lane.					

c Critical Lane Group

	1	4	4	†	Á	
Phase Number	1	2	3	5	6	
Movement	SBTL	SEL	EBTL	NBT	Ped	
Lead/Lag	Lead	Lag				
Lead-Lag Optimize						
Recall Mode	Max	Max	Max	Max	Max	
Maximum Split (s)	21	42	23	14	77	
Maximum Split (%)	21.0%	42.0%	23.0%	14.0%	77.0%	
Minimum Split (s)	7.5	42	23	8	77	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0	0.5	0.5	0.5	0.5	
Minimum Initial (s)	4		4	4		
Vehicle Extension (s)	3	3	3	3	3	
Minimum Gap (s)	3	3	3	3	3	
Time Before Reduce (s	s) 0	0	0	0	0	
Time To Reduce (s)	0	0	0	0	0	
Walk Time (s)		27	8		62	
Flash Dont Walk (s)		11	11		11	
Dual Entry	Yes	Yes	Yes	Yes	Yes	
Inhibit Max	Yes	Yes	Yes	Yes	Yes	
Start Time (s)	84	5	61	47	84	
End Time (s)	5	47	84	61	61	
Yield/Force Off (s)	1.5	43	80	57	57	
Yield/Force Off 170(s)	1.5	32	69	57	46	
Local Start Time (s)	41	62	18	4	41	
Local Yield (s)	58.5	0	37	14	14	
Local Yield 170(s)	58.5	89	26	14	3	
Intersection Summary						

Cycle Length 100 Control Type Pretimed Natural Cycle 110

Offset: 43 (43%), Referenced to phase 2:SEL, Start of Yellow

Splits and Phases: 11: J St & 3rd St

A ø1	≰ ø2	↑ ø5	♣ ø3
21 s	42 s	14 s	23.8
ÁŘ ø6			
77 s			

3/16/2005 Fehr & Peers Associates, Inc.

	۶		*	•	4	*	1	†	<i>></i>	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	नाा	7					1	7		S-2000 2000 1000 1000 1000 1000 1000 1000	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0					4.0	4.0			
Lane Util. Factor	0.81	0.81	1.00					0.91	0.91			
Frpb, ped/bikes	1.00	1.00	0.95					1.00	1.00			
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00			
Frt	1.00	1.00	0.85					0.96	0.85			
Flt Protected	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (prot)	1290	6035	1498					3241	1441			
FIt Permitted	0.95	1.00	1.00					1.00	1.00			
Satd. Flow (perm)	1290	6035	1498					3241	1441			
Volume (vph)	550	2330	240	0	0	0	0	513	520	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	550	2330	240	0	0	0	0	513	520	0	0	0
RTOR Reduction (vph)	128	0	139	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	422	2330	101	ő	ő	ő	0	725	308	Ö	Ö	0
Confl. Peds. (#/hr)	60	2000	60	1 BAN 14 M	* * * \	•		, 20	000		•	
Parking (#/hr)	0											
Turn Type	Split		Perm						Perm			
Protected Phases	3piit 1	1	i Ciiii					2	I CIIII			
Permitted Phases		British Barria.	1					-	2			
Actuated Green, G (s)	21.0	21.0	21.0					21.0	21.0			
	21.0	21.0	21.0					21.0	21.0			
Effective Green, g (s)	0.42	0.42	0.42					0.42	0.42			
Actuated g/C Ratio	4.0	4.0	4.0					4.0	4.0			
Clearance Time (s)				. Selection of the sele	ng distribution (1994)					2.763276 to	94. 955.63 (NY)	
Lane Grp Cap (vph)	542	2535	629					1361	605			
v/s Ratio Prot	0.33	c0.39	0.07					c0.22	0.04			
v/s Ratio Perm	0.70	0.00	0.07					0.50	0.21			
v/c Ratio	0.78	0.92	0.16					0.53	0.51			
Uniform Delay, d1	12.5	13.7	9.0					10.8	10.7			
Progression Factor	0.69	0.77	0.83					1.00	1.00			
Incremental Delay, d2	1.0	0.7	0.0					1.5	3.0			
Delay (s)	9.7	11.3	7.6					12.3	13.7			
Level of Service	Α	В	Α					В	В			
Approach Delay (s)		10.7			0.0			12.8			0.0	
Approach LOS		В			Α			В			Α	
Intersection Summary												•
HCM Average Control [11.2	ŀ	HCM Le	vel of S	ervice		В			
HCM Volume to Capaci			0.73									
Actuated Cycle Length			50.0			ost time			8.0			
Intersection Capacity U	tilization	1	85.1%	1	CU Lev	el of Se	rvice		E			
Analysis Period (min)			15									
c Critical Lane Group												



Phase Number	1	2	
Movement	EBTL	NBT	
Lead/Lag	Lead	Lag	
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	25	25	
Yellow Time (s)	4	4	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	9	5	
Flash Dont Walk (s)	12	16	
Dual Entry	Yes	Yes	
Inhibit Max	Yes	Yes	
Start Time (s)	28	3	
End Time (s)	3	28	
Yield/Force Off (s)	49	24	
Yield/Force Off 170(s)	37	8	
Local Start Time (s)	29	4	
Local Yield (s)	0	25	
Local Yield 170(s)	38	9	

Cycle Length 50
Control Type Pretimed
Natural Cycle 60

Offset: 49 (98%), Referenced to phase 1:EBTL, Start of Yellow

Splits and Phases: 12: J St & 5th St

♣ ø1	₽ ø2
25 s	25 <

	۶	→	*	*	4	*	4	†	<i>></i>	-	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					4111		14.54	ተተ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		0.97	0.95				
Frpb, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6224		3433	3362				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6224		3433	3362				
Volume (vph)	0	0	0	0	2940	60	500	563	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	2940	60	500	563	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	0	7	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2997	0	493	563	0	0	0	0
Confl. Peds. (#/hr)						60						
Parking (#/hr)					0			0				
Turn Type							Split					
Protected Phases					1		2	2				
Permitted Phases												
Actuated Green, G (s)					75.5		17.5	17.5				
Effective Green, g (s)					75.0		17.0	17.0				
Actuated g/C Ratio					0.75		0.17	0.17				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					4668		584	572	8.19.49		W 5. 5- 1	
v/s Ratio Prot					c0.48		0.14	c0.17				
v/s Ratio Perm					CO. - -O		0.14	00.17				
v/c Ratio					0.64		0.84	0.98				
Uniform Delay, d1					6.0		40.2	41.4				
Progression Factor					1.00		1.03	1.03				
Incremental Delay, d2					0.7		10.4	28.4				
Delay (s)					6.7		51.8	70.8				
Level of Service					0.7 A		J1.0	70.0 E				
Approach Delay (s)		0.0			6.7		.	61.9			0.0	
Approach LOS		0.0 A			0.7 A			01.9 E			Α.	
Intersection Summary		* * * * * * * * * * * * * * * * * * *						-				
HCM Average Control D)elav		21.1		HCM Le	vel of S	ervice		С			
HCM Volume to Capacit			0.71	All growth (Again)		. 						
Actuated Cycle Length (100.0		Sum of	ost time	e (s)		8.0			
			128.7%		ICU Lev				Н			
Intersection Capacity UI	แแนสแบบ	li .	120.7		IOU LEV	610106	IVICE		11			
Intersection Capacity Ut Analysis Period (min)	unzauor	I	15		ico rev	61 01 36	IVICE					

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Phase Number	1 2	
Movement WB	T NBTL	
Lead/Lag Lea	d Lag	
Lead-Lag Optimize	··· /	
Recall Mode Ma	x Max	
Maximum Split (s) 7	9 21	
Maximum Split (%) 79.09	6 21.0%	
Minimum Split (s) 7	9 21	
Yellow Time (s) 3	5 3.5	
All-Red Time (s)	0 0	
Minimum Initial (s)	4 4	
Vehicle Extension (s)	3 3	
Minimum Gap (s)	3 3	
Time Before Reduce (s)	0 0	
Time To Reduce (s)	0 0	
Walk Time (s) 64	5 5.5	
Flash Dont Walk (s)	1 12	
Dual Entry Ye	s Yes	
Inhibit Max Ye	s Yes	
Start Time (s) 44	5 23.5	
End Time (s) 23		
	0 41	
Yield/Force Off 170(s)	9 29	
Local Start Time (s) 24	5 3.5	
Local Yield (s)	0 21	
Local Yield 170(s)	9 9	

Cycle Length 100
Control Type Pretimed
Natural Cycle 100

Offset: 20 (20%), Referenced to phase 1:WBT, Start of Yellow

Splits and Phases: 13: I St & 5th St

←	4
ø1	1 Ø2
79 s	21 s

	≯	-	*	•	4	*	1	1	-	-	+	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					ተተፉ		F	ተተኩ				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.91		0.86	0.86				
Frpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4860		1522	4806				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4860		1522	4806				
Volume (vph)	0	0	0	0	894	240	330	1730	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	0	894	240	330	1730	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	37	0	0	0	0	0
Lane Group Flow (vph)	ō	0	Ō	Ō	1132	Ō	293	1730	Ö	Ö	Ŏ	ō
Confl. Peds. (#/hr)				rain es		60		11		- : .		=
Turn Type				76. 5. 5. 5.			Split					
Protected Phases					4		2	2				
Permitted Phases							t Maradia	valvinini.				
Actuated Green, G (s)					21.5		21.5	21.5				
Effective Green, g (s)					21.0		21.0	21.0				
Actuated g/C Ratio					0.42		0.42	0.42				
Clearance Time (s)					3.5		3.5	3.5				
Lane Grp Cap (vph)					2041		639	2019		garanta ang at ang		-
v/s Ratio Prot					c0.23		0.19	c0.36				
v/s Ratio Perm					00.20		99	00.00				
v/c Ratio					0.55		0.46	0.86				
Uniform Delay, d1					11.0		10.4	13.1				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					1.1		2.4	5.0				
Delay (s)					12.1		12.8	18.1				
Level of Service					В		12.0 B	В				
Approach Delay (s)		0.0			12.1			17.2			0.0	
Approach LOS		Α			В			В			Α	
Intersection Summary								_				
HCM Average Control D	Delay		15.4		HCM Le	vel of S	ervice		В			
HCM Volume to Capaci	•		0.71	14 July 193	. TOIVI LE	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	OI VIOC					
Actuated Cycle Length			50.0		Sum of	lost time	(e)		8.0			
		acjere 1999	63.6%			el of Se			0.0 B			
Intersection Capacity Utilization Analysis Period (min)			15	an year a Ard	IOO LEV	01 01 06	VICE		D			
c Critical Lane Group			13									
c Cittical Latte Group												



Phase Number	2	4	
Movement	NBTL	WBT	
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	
Maximum Split (s)	25	25	
Maximum Split (%)	50.0%	50.0%	
Minimum Split (s)	21.5	21.5	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	0	0	
Minimum Initial (s)	4	4	
Vehicle Extension (s)	3	3	
Minimum Gap (s)	3	3	
Time Before Reduce (s	s) 0	0	
Time To Reduce (s)	0	0	
Walk Time (s)	10	10	
Flash Dont Walk (s)	8	8	
Dual Entry	Yes	Yes	
Inhibit Max	Yes		
Start Time (s)	48.5	23.5	
End Time (s)	23.5	48.5	
Yield/Force Off (s)	20		
Yield/Force Off 170(s)			
Local Start Time (s)	3.5		
Local Yield (s)	25		
Local Yield 170(s)	17	42	

Cycle Length 50
Control Type Pretimed
Natural Cycle 50

Offset: 45 (90%), Referenced to phase 4:WBT, Start of Yellow

Splits and Phases: 14: L St & 16th St

↑ ø2	4 − ø4
25 s	25 s