*Appendices*

# Final Supplemental Environmental Impact Statement

*The Public Health Service Hospital at the Presidio of San Francisco*

*May 2006*

# Contents

## APPENDICES

# Appendix A

# Financial Analysis of PHSH Alternatives

APPENDIX A
FINANCIAL ANALYSIS OF PHSH EIS ALTERNATIVES
PHSH DEVELOPMENT PROGRAMS
MAY 2006

| | Requested No Action | | Alternative 1 | | Alternative 2 | | Alternative 3 | | Alternative 4 | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Project Description** | | | | | | | | | | |
| Gross Building Area | | | | | | | | | | |
| Residential | 0 | 0% | 209,200 | 52% | 337,100 | 84% | 233,000 | 85% | 332,000 | 92% |
| Non-Residential | 68,000 | 100% | 190,800 | 48% | 62,900 | 16% | 42,000 | 15% | 30,000 | 8% |
| Total | 68,000 | 100% | 400,000 | 100% | 400,000 | 100% | 275,000 | 100% | 362,000 | 100% |
| Unit Count | | | | | | | | | | |
| Market Rate | 0 | | 210 | | 230 | | 230 | | 114 | |
| Senior Housing | 0 | | 0 | | 0 | | 0 | | 155 | |
| Total Units | 0 | | 210 | | 230 | | 230 | | 269 | |
| Unit Mixed | | | | | | | | | | |
| Studio | N.A. | | 52 | | 6 | | 88 | | 21 | |
| 1 Bedroom | N.A. | | 146 | | 103 | | 130 | | 146 | |
| 2 Bedrooms | N.A. | | 1 | | 105 | | 1 | | 88 | |
| 3 Bedrooms/ Wyman | N.A. | | 11 | | 16 | | 11 | | 14 | |
| Unit Size | | | | | | | | | | |
| Studio | N.A. | | 380 | | 460 | | 517 | | 500 | |
| 1 Bedroom | N.A. | | 700 | | 747 | | 700 | | 700 | |
| 2 Bedrooms | N.A. | | 1,100 | | 1,241 | | 1,100 | | 1,100 | |
| 3 Bedrooms/ Wyman | N.A. | | 2,100 | | 1,609 | | 2,100 | | 1,650 | |
| Weighted Average | N.A. | | 696 | | 1,025 | | 699 | | 865 | |
| Parking Spaces | | | | | | | | | | |
| Underground Parking | 0 | | 0 | | 120 | | 0 | | 0 | |
| Surface Parking | 267 | | 542 | | 332 | | 330 | | 267 | |
| Total Parking | 267 | | 542 | | 452 | | 330 | | 267 | |
| **Project Financing - Developer Partner** | | | | | | | | | | |
| Total Permanent Debt | $0 | N.A. | $42,130,910 | 59% | $61,987,611 | 61% | $35,183,342 | 59% | $52,034,002 | 61% |
| Total Equity | 0 | N.A. | 18,056,104 | 25% | 26,566,119 | 26% | 15,078,575 | 25% | 22,300,287 | 26% |
| Historic Tax Credits | 0 | N.A. | 11,635,198 | 16% | 13,781,065 | 13% | 9,716,504 | 16% | 11,256,846 | 13% |
| Total | $0 | N.A. | $71,822,213 | 100% | $102,334,795 | 100% | $59,978,422 | 100% | $85,591,135 | 100% |
| **Project Financing - The Trust** | | | | | | | | | | |
| Total Permanent Debt | $0 | 0% | $0 | 0% | $0 | 0% | $0 | 0% | $0 | 0% |
| Total Equity | 8,200,000 | 100% | 21,386,129 | 100% | 19,458,345 | 100% | 20,117,850 | 100% | 14,600,837 | 100% |
| Historic Tax Credits | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Total | $8,200,000 | 100% | $21,386,129 | 100% | $19,458,345 | 100% | $20,117,850 | 100% | $14,600,837 | 100% |
| Total Development Cost | $8,200,000 | | $93,208,341 | | $121,793,140 | | $80,096,272 | | $100,191,972 | |

Sources: CBRE Consulting 2004 and Presidio Trust 2006.

5-May-06

APPENDIX A
FINANCIAL ANALYSIS OF PHSH EIS ALTERNATIVES
OPERATING ASSUMPTIONS
MAY 2006

| | Requested No Action | Alternative 1 | | Alternative 2 | | Alternative 3 | | Alternative 4 | |
|---|---|---|---|---|---|---|---|---|---|
| **Monthly Revenue Assumptions** | | | | | | | | | |
| Average Market Rent Unit | | | | | | | | | |
| Studio | N.A. | $1,100 | $2.89 | $1,800 | $3.91 | $1,530 | $2.96 | $1,500 | $3.00 |
| 1 Bedroom | N.A. | 2,100 | $3.00 | 2,600 | $3.48 | 2,100 | $3.00 | 2,100 | $3.00 |
| 2 Bedrooms | N.A. | 2,700 | $2.45 | 3,500 | $2.82 | 2,700 | $2.45 | 2,700 | $2.45 |
| 3 Bedrooms/ Wyman [1] | N.A. | 4,800 | $2.29 | 3,300 | $2.05 | 4,800 | $2.29 | 3,500 | $2.12 |
| Weighted Average | N.A. | $2,000 | | $3,040 [2] | | $2,010 | | $2,500 | |
| Average Independent Living Unit | | | | | | | | | |
| Studio | N.A. | N.A. | | N.A. | | N.A. | | $3,600 | |
| 1 Bedroom | N.A. | N.A. | | N.A. | | N.A. | | 4,400 | |
| 2 Bedrooms | N.A. | N.A. | | N.A. | | N.A. | | 5,200 | |
| Average Assited Living Unit | | | | | | | | | |
| Studio | N.A. | N.A. | | N.A. | | N.A. | | $4,200 | |
| 1 Bedroom | N.A. | N.A. | | N.A. | | N.A. | | 5,000 | |
| **Annual Operating Expense Assumptions (per Unit)** | | | | | | | | | |
| Market Rate Units | N.A. | $5,000 | | $5,000 - $5,700 | | $5,000 | | $5,000 | |
| Senior Units | N.A. | N.A. | | N.A. | | N.A. | | $25,000 | |
| Capital Reserves | N.A. | $200 | | $200 | | $200 | | $200 | |
| **Non-Residential Revenue Assumptions (per Sq. Ft.)** | | | | | | | | | |
| Arion Press | $4.29 | $4.29 | | $4.29 | | $4.29 | | $4.29 | |
| Lone Mountain | $18.00 | N.A. | | $18.00 | | $18.00 | | $18.00 | |
| Other Cultural/ Educational | $12.00 | $20.00 | | $12.00 | | N.A. | | $12.00 | |
| Office | $20.00 | N.A. | | $18.00 [3] | | $0.00 | | N.A. | |
| Conference | N.A. | $20.00 | | N.A. | | N.A. | | N.A. | |
| Recreation Center | N.A. | N.A. | | N.A. | | N.A. | | $15.00 | |
| Day Care | N.A. | $18.00 | | N.A. | | N.A. | | N.A. | |
| Light Industrial/ Warehouse [4] | N.A. | $4.28 | | $4.28 | | $12.00 | | $4.28 | |

Notes:

(1) Average rents differ primarily because the number of units differ in Wyman neighborhood. Alternatives 1 and 3 assume 11 units; Alternative 2 assumes 15 units; Alternative 4 assumes 14 units.

(2) Generally higher rents reflect a higher level of finish, larger units, better views, and a higher level of services than do the other Alternatives.
If Alternative 3 were built with a similar level of finish as Alternative 2, the performance of Alternative 3 would worsen because the revenue increase from higher rent per unit would be more then offset by the fewer number of units and higher per-unit construction cost.

(3) Average office rent from building 1808 includes one floor of basement and three floors of office.

(4) Alternatives 1, 2 and 4 assume Building 1802 is light industrial. Alternative 3 assumes Building 1450, 1802, 1818, and 1819 are light industrial.

Sources: CBRE Consulting 2004 and Presidio Trust 2006.

5-May-06

APPENDIX A
FINANCIAL ANALYSIS OF PHSH EIS ALTERNATIVES
SUMMARY OF RESULTS
MAY 2006

| | Requested No Action | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 |
|---|---|---|---|---|---|
| **First Stabilized Year Revenue to Trust** | | | | | |
| Ground Rent (1) | $0 | $570,000 | $680,000 | $601,000 | $670,700 |
| Direct Rent (2) | 784,459 | 1,853,764 | 1,899,221 | 1,808,618 | 1,356,036 |
| Service District Charge (3) | 242,393 | 1,304,077 | 1,142,459 | 775,850 | 1,016,518 |
| Total | $1,026,852 | $3,727,841 | $3,721,681 | $3,185,468 | $3,043,254 |
| **First Stabilized Year Revenue to Developer** | | | | | |
| NOI after Ground Rent (4) | $0 | $6,384,406 | $6,549,383 | $2,777,738 | $6,104,174 |
| **First Stabilized Year Project Revenue** | $1,026,852 | $10,112,247 | $10,271,064 | $5,963,206 | $9,147,428 |
| **Measure of Returns** | | | | | |
| Developer Partner IRR | N.A. | 11.7% | 9.9% | 6.3% | 10.2% |
| Trust IRR | 12.5% | 12.0% | 13.9% | 12.6% | 13.0% |
| Weighted Average IRR | 12.5% | 11.8% | 10.7% | 8.3% | 10.8% |
| Sensitivity Weighted Average IRR (5) | | | | | |
| With Additional $1.6M Offramp | N.A. | 11.5% | 10.5% | 8.0% | 10.5% |
| With Additional $5.0M Offramp | N.A. | 11.0% | 10.1% | 7.4% | 10.0% |
| With Additional $10.0M Offramp | N.A. | 10.2% | 9.5% | 6.7% | 9.3% |
| **Income to Trust over 70 -year Term** | | | | | |
| Total Income | $334,986,109 | $680,301,953 | $678,170,563 | $595,604,669 | $528,940,563 |
| Trust Investment | (8,200,000) | (21,386,129) | (19,458,345) | (20,117,850) | (14,600,837) |
| Total Net Income | $326,786,109 | $658,915,825 | $658,712,218 | $575,486,819 | $514,339,726 |
| Net Present Value (6) | $6,322,251 | $28,267,103 | $38,009,142 | $27,966,301 | $25,212,327 |

Notes:

(1) The ground rent is derived from a $1.0 million ground rent for the PHSH complex less rents in place. It is then prorated based on the ratio of master developer units to the total units in the PHSH complex.

(2) Revenue to Trust after vacancy allowance, operating expenses, insurance, and capital reserves.

(3) Calculated based on $3.61 per square foot times applicable area, increased by 3% CPI annually. (See glossary for definition of SDC).

(4) Represents revenues to developer partner after vacancy allowance, operating expenses, insurance, capital reserves, SDC, and ground rent.

(5) Since the cost of the offramp is not known for certain, we have shown a range from the best case (which assumes all design exceptions are granted by Caltrans) to the worst case (which assumes no design exception are granted by Caltrans) and a midpoint case.

(6) A discount rate of 8% was used for ground rent and SDC received in Alternatives 1 and 4 while a discount rate of 6% was used in ground rent and SDC received in Alternatives 2 and 3. A discount rate of 10% was used for net cash flow of Trust's funded project in all Alternatives.
If a discount rate of 6% were used for ground rent and SDC in Alternatives 1 and 4, the NPV to the Trust would be $37.4 M and $33.4 M, respectively.

Sources: CBRE Consulting 2004 and Presidio Trust 2006.

5-May-06

# Appendix B

# Transportation Technical Memoranda

Wilbur Smith Associates
ENGINEERS
PLANNERS
ECONOMISTS

# MEMO

**SAN FRANCISCO OFFICE**
**January 23, 2006**

Project Number: 395900

**To:** Amy Marshall, The Presidio Trust

**From:** José I. Farrán, Project Manager
Nate Chanchareon, Senior Transportation Engineer

**Subject:** The Presidio of San Francisco
Public Health Service Hospital Site Supplemental Environmental Impact Statement
Technical Memorandum No. 1 – Expanded Existing Conditions

## 1. INTRODUCTION

This Technical Memorandum describes the existing transportation conditions in the vicinity of the Presidio of San Francisco's Public Health Service Hospital (PHSH) development site, which is located in the southern end of the Presidio, west of Park Presidio Boulevard, and north of Lake Street. This assessment is based in part on the *Presidio Trust Management Plan – Background Transportation Report for the Final EIS*, prepared by Wilbur Smith Associates (WSA) in May 2002. In addition, this information has been supplemented and updated by WSA with new traffic data collected specifically for this study. The following are the components of the transportation system that are addressed in this technical Memorandum:

- Roadway network,
- Traffic operations,
- Transit services,
- Bicycle and pedestrian circulation, and
- Parking conditions.

## 2. ROADWAY NETWORK

The PHSH development site is located on the south side of the Presidio. Nearby roadways include Lake Street, California Street, Park Presidio Boulevard, 14th Avenue, 15th Avenue, Wedemeyer Street and Battery Caulfield Road. These roadways are described below.



*Lake Street* – Lake Street is an east-west oriented street located immediately south of the Presidio. It varies in width from approximately 50 feet between 15th and 14th Avenues to 62 feet between 14th Avenue and Park Presidio Boulevard. West of 14th Avenue, Lake Street has one travel lane and one bicycle lane each way, as well as on-street parking on both sides of the street. Between 14th Avenue and Park Presidio Boulevard, Lake Street has one travel lane and a bicycle lane each way, an eastbound left-turn lane and an eastbound right turn lane. On-street parking is prohibited on Lake Street between 14th Avenue and Park Presidio Boulevard. East of Park Presidio Boulevard, Lake Street has one travel lane in the eastbound direction, and a right-turn lane, a bicycle lane, a through lane and a left-turn lane in the westbound direction.

*California Street* – California Street is an east-west oriented street located immediately south of Lake Street. It is approximately 50 feet wide in the vicinity of the PHSH site, with one travel lane each way and on-street parking on both sides of the street. The *San Francisco General Plan* designates California Street as a secondary arterial and a neighborhood commercial street. East of Park Presidio Boulevard, California Street is designated as a Transit Oriented Street, while west of Park Presidio Boulevard is designated as a Secondary Transit Street.

*Park Presidio Boulevard* – Park Presidio Boulevard (Highway 1) is a major north-south arterial. It has three travel lanes each way with a raised median south of its intersection with Lake Street. Approximately 450 feet north of Lake Street, Park Presidio Boulevard narrows to two travel lanes each way prior to going through the MacArthur Tunnel. Highway 1 is a State-designated facility under Caltrans jurisdiction. Left-turns from Park Presidio Boulevard are prohibited at all intersections, with the exception of southbound buses at Geary Boulevard. Park Presidio Boulevard is part of San Francisco's Congestion Management Program network and it is designated in the *San Francisco General Plan* as a Neighborhood Network Connection Street.

*14th Avenue* – 14th Avenue is a north-south oriented residential street, located immediately west of Park Presidio Boulevard. It is approximately 40 feet wide with one travel lane each way at its intersection with Lake Street. 14th Avenue narrows to a width of 30 feet north of Lake Street, near the former entrance to the Presidio. The 14th Avenue gate to the Presidio is currently closed. On-street parking is permitted on both sides of the street.

*15th Avenue* – 15th Avenue is a north-south oriented residential street, located immediately west of 14th Avenue. It is approximately 40 feet wide with one travel lane each way near Lake Street and California Street and narrows to approximately 35 feet near the Presidio gate. 15th Avenue has on-street parking on both sides of the street and provides access to the Presidio approximately 260 feet north of Lake Street.

*Wedemeyer Street* – Wedemeyer Street is generally a north-south oriented street within the Presidio that circumvents the PHSH site, connecting 14th Avenue with Battery Caulfield Road north of the site. There is one travel lane each way and no on-street parking on Wedemeyer Street.

*Battery Caulfield Road* – Battery Caulfield Road is a north-south oriented street connecting Wedemeyer Street north of the PHSH site with Washington Boulevard at the West Washington residential neighborhood. It is approximately 24 feet wide with one travel lane each way. On-street parking is not permitted on either side of the street.

## 3. TRAFFIC OPERATIONS

### 3.1 Traffic Characteristics

The 15th Avenue gate entrance is currently the only direct vehicular access to the PHSH site from outside the Presidio. As part of the *Presidio Bus Management Plan* study (September 1999), 24-hour machine traffic counts were conducted at the nine Presidio gates during the second week of May (spring conditions), the first week of August (summer conditions), and the third week of November (fall conditions) in 1998. The data indicate that approximately 800 to 900 vehicles per day enter the Presidio via the 15th Avenue gate, which represents approximately one percent of all vehicles entering or exiting the park on a weekday. A summary of the data is shown in Table 1.

**Table 1**
**15th Avenue Presidio Gate**
**Weekday Average Daily and PM Peak Hour Traffic Volumes (1998)**

| Season | Average Daily Traffic (vehicles) | PM Peak Hour Traffic (vehicles) | Percentage of Daily Traffic during the PM Peak Hour |
|---|---|---|---|
| Spring | 864 | 82 | 9.5% |
| Summer | 783 | 75 | 9.6% |
| Winter | 920 | 93 | 10.1% |

Source: *Presidio Bus Management Plan – Support Document: Summary of Analysis of Data Collected in 1998*, September 1999
Note:
Traffic volumes include both entering and existing volumes at the 15th Avenue gate

The traffic counts at the 15th Avenue Gate shown in Table 1 have been supplemented with turning movement counts at the intersection of 15th Avenue/Battery Caulfield Road and Gate counts in 2001 and 2002. Weekday traffic volumes in the Presidio are primarily work-related, so they do not vary substantially by season, unlike weekend traffic, which is primarily recreational. Weekday PM peak hour traffic volumes include even more work-related trips than weekday daily traffic volumes, and therefore vary the least amount by season. As shown in Table 1 the highest traffic volumes at the 15th Avenue gate occurred during the winter and spring seasons.

### 3.2 Intersection Analysis

Existing intersection operating conditions have been evaluated for weekday AM and PM peak period conditions at eight key intersections in the vicinity of the PHSH site. Because these intersections are the intersections closest to the PHSH district, these are the intersections that would most likely experience the greatest change in traffic volumes due to changes in land uses



at the PHSH site. The dispersion of traffic to several routes radiating from the PHSH district would yield a decreasing effect on individual intersections with increased distance from the PHSH district, and therefore the effect of the PHSH alternatives on intersections beyond those identified below would be minimal. The eight study intersections are:

- Lake Street/17th Avenue
- Lake Street/15th Avenue
- Lake Street/14th Avenue
- Lake Street/Park Presidio Boulevard
- Lake Street/Funston Avenue
- California Street/15th Avenue
- California Street/14th Avenue
- California Street/Park Presidio Boulevard

WSA conducted traffic counts at the study intersections in November 2000. New existing peak-hour traffic counts have recently been provided by the Trust. These new counts were conducted during the morning and afternoon peak commute periods (7:30 to 9:30 AM and 4:30 to 6:30 PM) in October 2005. In general, the 2005 volumes show a decrease from the 2000 volumes, varying from two to six percent, with the exception at the California Street/14th Avenue, Lake Street/15rh Avenue, and Lake Street/17th Avenue intersections, where the 2005 volumes remain the same or are slightly higher than the 2000 volumes. To represent the current operations at the study intersections, the most recent traffic counts (2005) have been used in this analysis.

The AM and PM peak hour intersection operations analysis was conducted according to the methodology described in the 2000 Highway Capacity Manual (HCM 2000) (Transportation Research Board, 2000). The HCM 2000 methodology is appropriate as it is the same methodology used by the San Francisco Planning Department (Transportation Impact Analysis Guidelines for Environmental Review, October 2002) and is also being used for the Doyle Drive study. The HCM methodology calculates the average delay experienced by a vehicle traveling through the intersection, and assigns a corresponding level of service (LOS). The levels of service range from LOS A, indicating volumes well below capacity with vehicles experiencing little or no delay, to LOS F, indicating volumes near capacity with vehicles experiencing extremely high delays. An intersection operating at LOS D or better is generally considered to be operating acceptably by the City and County of San Francisco and most other local agencies in the Bay Area, and levels of service E and F are undesirable and generally considered unacceptable. Appendix A contains the HCM 2000 LOS definitions.

For signalized intersections, the HCM 2000 methodology determines the average delay per vehicle for each lane group based on the particular movement, and traffic volume and capacity associated with that lane group. The average delay per vehicle is then aggregated for each approach and for the intersection as a whole. A combined weighted average delay and LOS is then presented for the intersection as a whole. For unsignalized intersections, average delay and LOS operating conditions are calculated by approach (e.g., northbound) and movement (e.g., northbound left-turn). For two-way stop-controlled intersections, delay and LOS are calculated for each of the two stop-controlled approaches and operating conditions are reported for the worst approach. For all-way stop-controlled intersections, average delay per vehicle is averaged across all approaches, and operating conditions are reported for the average delay and LOS for the intersection as a whole.

It should be noted that because the PHSH EIS traffic analysis is based on the more up to date and more widely accepted HCM 2000 methodology and updated traffic counts (October 2005), the results for establishing the operating conditions shown in the PTMP EIS differ slightly from those shown in this technical memorandum. The transportation analyses conducted as part of the PTMP EIS were based on year 2000/2001 traffic counts and the 1994 HCM methodology, the generally accepted methodology at that time.

Table 2 presents the results of the intersection LOS analysis for the existing weekday AM and PM peak hour conditions (Appendix B contains the detailed calculations of the intersection LOS analysis). As shown from Table 2, all intersections are operating at LOS D or better during both the AM and PM peak hours with the exception of the intersection of California Street and 14th Avenue, which is operating at LOS E during the PM peak period. It should be noted that the LOS and delay shown at the two-way stop controlled intersections are for the worst minor stop-controlled approach vehicles, since traffic along the major street approaches are uncontrolled and does not experience delays.

**Table 2**
**Intersection Levels of Service – Weekday AM and PM Peak Hours**
**Existing Conditions – October 2005**

| Intersection | Traffic Control Device | AM Peak Hour | | PM Peak Hour | |
|---|---|---|---|---|---|
| | | Delay [1] | LOS | Delay [1] | LOS |
| Lake St/17th Ave | 2-Way Stop (N-S) | 17.5 | C | 16.7 | C |
| Lake St/15th Ave | 4-Way Stop | 17.2 | C | 13.1 | B |
| Lake St/14th Ave [2] | 2-Way Stop (N-S) | 21.4 | C | 30.5 | D |
| Lake St/Park Presidio Blvd | Traffic Signal | 16.4 | B | 18.4 | B |
| Lake St/Funston Ave | 2-Way Stop (N-S) | 16.9 | C | 15.9 | C |
| California St/15th Ave [2] | 2-Way Stop (N-S) | 20.8 | C | 20.2 | C |
| California St/14th Ave [2] | 2-Way Stop (N-S) | 29.9 | D | 38.9 | E |
| California St/Park Presidio Blvd | Traffic Signal | 16.2 | B | 22.2 | C |

Source: Wilbur Smith Associates – January 2006
Notes:
[1] Delay presented in seconds per vehicle based on the 2000 HCM methodology.
[2] LOS and delay shown for worst minor stop-controlled approach. Major approach is uncontrolled and without delay.



## 4. TRANSIT SERVICE

Major public transit systems serving the PHSH site include the San Francisco Municipal Railway (Muni) and the Golden Gate Transit (GGT) operated by the Golden Gate Bridge, Highway and Transportation District. These services provide access to other regional carriers such as BART, AC Transit, Caltrain, SamTrans and the regional ferry system. In addition, the Presidio's internal shuttle bus service (PresidiGo) serves the park and connects to Muni and GGT buses at key transfer points.

### 4.1 Muni

Muni provides regular scheduled daily transit service directly to the San Francisco neighborhoods adjacent to the PHSH site with five routes (1-California, 1AX-California "A" Express, 1BX-California "B" Express, 28-19th Avenue, 28L-19th Avenue Limited). Table 3 summarizes the characteristics of Muni bus lines serving the PHSH site or its immediately adjacent neighborhoods, including route descriptions and the weekday AM and PM peak period headways.

**Table 3**
**Nearby Muni Transit Lines**

| Route Designation | Route Type | Route Description | Peak Period Scheduled Headway (minutes) | |
|---|---|---|---|---|
| | | | 7-9 AM | 4-6 PM |
| 1-California | Radial – Trolley Coach | Daily route connecting Outer Richmond area (Geary/33rd Ave.) to the Transbay Terminal (Howard/Main) via the Financial District and a stop at the Embarcadero BART/Muni station. | 9 (1) | 8 (1) |
| 1AX-California "A" Express | Express – Motor Coach | Weekday peak periods peak direction only service connecting Geary/33rd Ave. to Davis/Pine in the morning and Davis/Pine to 33rd Ave./Geary in the afternoon. | 10 | 15 |
| 1BX-California "B" Express | Express – Motor Coach | Weekday peak periods peak direction only service connecting California/12th Ave. to Davis/Pine in the morning, and Davis/Pine to Park Presidio Blvd./California St. in the afternoon. | 6 | 15 |
| 28-19th Avenue | Crosstown – Motor Coach | Daily route connecting Daly City BART Station to Fort Mason via 19th Ave., Park Presidio Blvd., Doyle Drive and Lombard Street. | 11 | 12 |
| 28-19th Avenue Limited | Crosstown – Motor Coach | Weekday AM and early PM peak (school service) periods with limited stop service connecting Daly City BART Station to the California St./Park Presidio Blvd. intersection. | 10-15 | n.a. (2) |

Source: Muni September, 2005 Schedule
Note:
1. The 1-California line operates at a three-minute headway east of Fillmore Street.
2. n.a. – Not applicable; Indicates that no runs are made on that route during that particular time period.

The 1-California and 1AX/1BX-California Expresses run along California Street, and are within two blocks of the 14th Avenue and the 15th Avenue gates. The 28-19th Avenue and 28L-19th Avenue Limited travel along Park Presidio Boulevard with a stop at California Street, within three blocks of the 14th Avenue gate; the 28L route ends at the Park Presidio/California intersection.

Recent ridership data are available at each line's maximum load point, defined as the location along the route at which the highest level of ridership typically occurs. In all instances, with the exception of the 1AX-California route, the maximum load point occurs at a substantial distance from the Presidio. Table 4 presents the maximum load points and associated current ridership for the various bus lines serving the Presidio or its adjacent neighborhoods, during the AM and PM peak commute periods. Table 4 indicates that the Muni lines serving the PHSH site are well-utilized, but still have available capacity.

## 4.2 Golden Gate Transit

Golden Gate Transit (GGT) operates bus lines and ferry routes between San Francisco and counties in the Golden Gate corridor of Marin and Sonoma Counties. Twenty-one of their bus lines pass through the Presidio during the AM and PM peak hours, all stopping at the Golden Gate Bridge Plaza. Only route 10 proceeds south into San Francisco via Highway 1, Park Presidio Boulevard and Geary Boulevard, with the stop nearest to the PHSH site located at the Park Presidio/California intersection.

Route 10 opened for service on November 1, 2003 replacing and with the same alignment as previously served by route 50 through San Francisco. Weekday headway for route 10 is 55 to 63 minutes in the southbound direction and 25-62 minutes in the northbound direction during the morning period (6-10 AM), and 21 to 64 in the southbound direction and 60 to 63 in the northbound direction during the afternoon period (3-7 PM). Recent peak hour ridership data was provided in September 2005 by GGT and summarized in Table 5. The data represents ridership and occupancy at the maximum loading point along the line, which is at the Golden Gate Bridge Plaza stop. Although ridership data are not available by individual bus stop, previous observations indicate that few passengers were originating or terminating their trips in the Presidio. (Wilbur Smith Associates, 2000)



**Table 4**
**Existing Muni Passenger Loads**

| Line | Direction | AM Peak Hour | | | | PM Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Maximum Load Point | Peak Hour Load | Peak Hour Capacity | Load Factor | Maximum Load Point | Peak Hour Load | Peak Hour Capacity | Load Factor |
| 1 | to Howard/Main | Clay/Powell | 886 | 866 | 102% | Clay/Polk | 581 | 1,276 | 46% |
| | to Geary/33rd | Sacramento/Polk | 365 | 819 | 45% | Sacramento/Powell | 1,001 | 1,173 | 85% |
| 1AX | to Davis/Pine | California/Park Presidio | 322 | 353 | 91% | n.a. | n.a. | n.a. | n.a. |
| | to Geary/33rd | n.a. | n.a. | n.a. | n.a. | California/Park Presidio | 205 | 294 | 70% |
| 1BX | to Davis/Pine | California/Fillmore | 630 | 707 | 89% | n.a. | n.a. | n.a. | n.a. |
| | to Park Presidio/California | n.a. | n.a. | n.a. | n.a. | California/Fillmore | 265 | 334 | 79% |
| 28 | to Fort Mason | 19th Ave/Lincoln | 254 | 420 | 60% | 19th Ave/Sloat | 134 | 268 | 50% |
| | to Daly City BART | 19th Ave/Sloat | 133 | 378 | 35% | 19th Ave/Lincoln | 248 | 305 | 81% |
| 28L | to Park Presidio/California | 19th Ave/Lincoln | 159 | 236 | 67% | n.a. | n.a. | n.a. | n.a. |
| | to Daly City BART | 19th Ave/Sloat | 115 | 331 | 35% | n.a. | n.a. | n.a. | n.a. |

Source: Muni, FY 2004-2005 Transit Data

Notes:

1. n.a. – Not applicable; Indicates that no runs are made on that route in that direction during that particular time period.
2. Peak hour capacity is based on the Muni Bus and Metro FY 2004-2005 Weekday Conditions. It assumes an appreciable number of standees per vehicle (somewhere between 60% and 80% of the number of seated passengers, depending on the specific transit vehicle configuration) and may not include the effects of missed or late runs.
3. Peak hour ridership is assumed to be 60% of the two-hour peak period ridership.
4. The 1-California line operates at an eight-minute headway west of Fillmore Street and at a three-minute headway east of Fillmore Street. The peak hour loads correspond to maximum load points located east of Fillmore Street.

**Table 5**
**Route 10 Golden Gate Transit Bus Passenger Loads – Year 2005**

| Time Period | Number of Bus Trips | Number of Passengers | Peak Hour Passengers per Bus* | Capacity per Bus | Peak Hour Load Factor per Bus |
|---|---|---|---|---|---|
| AM (6-10 AM) | | | | | |
| - Northbound | 6 | 80 | 17 | 39 | 43% |
| - Southbound | 4 | 76 | 24 | 39 | 62% |
| PM (3-7 PM) | | | | | |
| - Northbound | 5 | 60 | 15 | 39 | 39% |
| - Southbound | 6 | 90 | 19 | 39 | 49% |

Source: Barbara Vincent, Associate Planner, GGT, September 27, 2005
Note: *A 25 percent increase in ridership to account for higher demand during the highest peak hour was included.

The data indicates that GGT route 10 is operating below its capacity during both the AM and PM peak commute hours. The highest peak hour load factor is 62 percent recorded in the southbound direction during the morning peak period. The average load factor in the northbound direction is slightly lower than the southbound direction, approximately 46 percent. During the afternoon peak period, the average load factor is 39 and 49 percent in the northbound and southbound directions, respectively. It should be noted that although the highest peak hour load factor is 62 percent, it is likely that some buses within the peak hours may be more crowded than others.

### 4.3 Presidio Internal Shuttle

Early in 2002 the Trust began implementation of an internal free-of-charge shuttle service for the Presidio (PresidiGo). The shuttle service consists of two routes (Around the Park and Downtown) that serve the entire Presidio with more than 35 stops within the park, including key transfer points to Muni and GGT buses. The service operates on 30-minute headways from 6:30 AM to 7:30 PM on weekdays and on one-hour headways from 11 AM to 6 PM on weekends, using compressed natural gas (CNG) buses.

PresidiGo Around the Park service currently serves the PHSH site with a stop at Wedemeyer Street, in front of Building 1808 (Nurses' Quarters) and the 14$^{th}$ Avenue gate. PresidiGo also connects with Muni's 29-Sunset at Lincoln Boulevard, with GGT's Transbay lines at the Golden Gate Bridge Plaza, with Muni's 82X-Presidio and Wharves Express and PresidiGo Downtown service at the Transit Center in the Main Post, and with Muni's 43-Masonic on Letterman Drive. PresidiGo also stops at the Lombard Gate, one block from the terminus of Muni's 41-Union and 45-Union/Stockton routes at Lyon/Greenwich. In October 2005, PresidiGo Downtown and Around the Park service carried 11,570 passengers.

In addition, PresidiGo provides special service for tenants and events within the Presidio. Special service must be arranged in advance and is generally paid for by the tenant or event sponsor.



## 5. BICYCLE AND PEDESTRIAN CONDITIONS

The Presidio does not currently have a continuous system of sidewalks, bicycle trails and bicycle lanes. Sidewalks and marked pedestrian crossings are provided sporadically throughout the Presidio. In many cases within the Presidio, pedestrians and bicyclists must mix with vehicles on the street system to move from one area to another.

Paved sidewalks are provided within the PHSH site connecting the main buildings in the area, such as along the north side of Wedemeyer Street, in front of Building 1801 (the former hospital building) and Building 1808 (the former nurses' quarters). Separate pedestrian-only paths also connect the site to the nearby park entrances. Pedestrian paths are located inside the park on both sides of 15$^{th}$ Avenue and on the east side of 14$^{th}$ Avenue. A similar network of pedestrian paths links together the buildings on Wyman Avenue. A shared pedestrian-bicycle path also crosses under Highway 1 to connect the PHSH site to the Mountain Lake area.

A total of 67 pedestrians were counted at Battery Caulfield Road[1] from 7 AM to 6 PM during a weekday in October 1999, while 157 pedestrian movements were counted the following Saturday during the same time period.

There are several bicycle routes within the Presidio, although bicycles and vehicles currently share a standard-width roadway along most of these routes. Near the PHSH site, 15$^{th}$ Avenue, 25$^{th}$ Avenue and El Camino del Mar are part of the designated San Francisco Citywide Bicycle Routes (Routes #69, #75 and #95, respectively) that continue into the Presidio. Route 69 is a Class III facility (signed route only where bicyclists share roadway with vehicles, generally with wider travel lanes), while Routes 75 and 95 are Class II facilities (dedicated, striped bike lanes on roadway edge) outside of the Presidio that change to Class III facilities inside the park. Route 10 on Lake Street is a Class II facility between 3$^{rd}$ and 28$^{th}$ Avenues.

In the immediate vicinity of the PHSH site, Route 69 (Class III) follows Wedemeyer Street and Battery Caulfield Road to connect with Route 65 (Class III) at Washington Boulevard. Park Boulevard/West Pacific Avenue at the southeast corner of the site is a Class I facility (paved off-street path separated from motor vehicle traffic) from 14$^{th}$ Avenue to the Presidio Golf Course parking area on West Pacific Avenue.

A total of 45 bicyclists were counted at Battery Caulfield Road[1] from 7 AM to 6 PM during a weekday in October 1999, while 241 bicyclists were counted the following Saturday during the same time period.

[1] *Presidio of San Francisco - 1999 Pedestrian and Bicycle Count Program*, Technical Memorandum, Robert Peccia & Associates

## 6. PARKING CONDITIONS

### 6.1 On-street Parking Outside the Park

On-street parking in the area adjacent to the 14th and 15th Avenue Gates is not metered but is mostly restricted to a two-hour maximum time limit, except for local residents displaying the appropriate sticker. Parking supply and occupancy was surveyed in October 2001 and December 2000 as part of a study to assess the potential "spillover" effects of daytime parking fees and time restrictions in the Presidio. Results are tabulated in Table 6 below, indicate that there are approximately 260 on-street parking spaces near the 14th and 15th Avenue gates.

**Table 6**
**Weekday On-Street Parking Supply and Occupancy in the Vicinity of the PHSH Site**

| Location | Number of Spaces Available | Occupancy 6:00-8:30 AM | Occupancy 11:00 AM-1:00 PM | Occupancy 3:00-5:00 PM |
|---|---|---|---|---|
| Lake St., bet. 14th Ave. and 18th Ave. | | | | |
| - North side | 38 | 89% | 66% | 47% |
| - South side | 31 | 94% | 61% | 68% |
| California St., bet. 14th Ave. and 18th Ave. | | | | |
| - North side | 32 | 97% | 72% | 75% |
| - South side | 33 | 94% | 88% | 91% |
| 14th Ave., bet. California St. and Presidio gate | | | | |
| - East side | 44 | 86% | 70% | 36% |
| - West side | 29 | 79% | 66% | 28% |
| 15th Ave., bet. California St. and Presidio gate | | | | |
| - North side | 26 | 69% | 15% | 23% |
| - South side | 28 | 79% | 25% | 0% |
| **Total** | **261** | **87%** | **60%** | **47%** |

Source: Wilbur Smith Associates, October 2001 and December 2000 data.

Parking occupancy data shown in Table 6 for the early morning, midday and early evening time periods indicate that parking occupancy is highest early in the morning, approaching 90 percent, as residents start leaving the area to go to work. Approximately half of all on-street parking spaces are occupied during the middle of the day. The cluster of parked vehicles near the 15th Avenue Gate suggests that the Presidio is used by some residents in the surrounding neighborhood as a convenient parking area when sufficient on-street parking is not available, and that parking occupancy during late evenings and weekends likely nears 100 percent.



### 6.2 Parking at the PHSH site

Parking supply and occupancy information for the PHSH site was obtained from a survey taken on a typical Tuesday in May, 1999, between 10 AM and 2 PM. Table 7 summarizes the parking supply at the PHSH site. There are 306 parking spaces at the site, 69 of which are on the street and 237 off the street at two surface parking lots. Parking occupancy data showed that parking facilities within the PHSH site were less than five percent occupied, indicating that parking usage in 1999 was extremely light and that there was substantial available parking in the area.

**Table 7**
**Parking Supply at the PHSH Site**

| Location | Type | Spaces supplied |
|---|---|---|
| *Lower Plateau* | | |
| PHSH West Lot | Off-street | 200 |
| PHSH East Lot | Off-street | 37 |
| Bldg. 1801 – PHS Hospital | On-street | 19 |
| Bldg. 1802 – Engineering Maint. | On-street | 2 |
| Bldg. 1806 – Sr. Enlisted Quarters | On-street | 6 |
| Bldg. 1808 – Nurses' Quarters | On-street | 17 |
| Bldgs. 1818 & 1819 – Laboratories | On-street | 6 |
| Wyman Avenue | On-street | 19 |
| Off-street | | 237 |
| On-street | | 69 |
| *Lower Plateau Subtotal* | | *306* |
| *Upper Plateau* | | |
| Bldg 1450 | Off-street | 30 |
| *Upper Plateau Subtotal* | | *30* |
| **Total** | | **336** |

Source: Wilbur Smith Associates - May 1999 data & Presidio Trust, 2004.

# APPENDICES

# APPENDIX A
## INTERSECTION LEVEL OF SERVICE (LOS) DEFINITIONS

## INTERSECTION LEVEL OF SERVICE (LOS) DEFINITIONS

HIGHWAY CAPACITY MANUAL 2000 METHODOLOGY

| Level of Service | Average Control Delay (seconds per vehicle) |
|---|---|
| **Signalized Intersections** | |
| LOS A | ≤ 10 seconds |
| LOS B | > 10 – 20 seconds |
| LOS C | > 20 – 35 seconds |
| LOS D | > 35 – 55 seconds |
| LOS E | > 55 – 80 seconds |
| LOS F | > 80 seconds |
| **Two-Way STOP and All-Way STOP Intersections** | |
| LOS A | ≤ 10 seconds |
| LOS B | > 10 – 15 seconds |
| LOS C | > 15 – 25 seconds |
| LOS D | > 25 – 35 seconds |
| LOS E | > 35 – 50 seconds |
| LOS F | > 50 seconds |

Source: *2000 Highway Capacity Manual*, Transportation Research Board, 2000.

## HCM Unsignalized Intersection Capacity Analysis
## 100: Lake Street & 17th Avenue

2/15/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 532 | 13 | 15 | 253 | 1 | 3 | 1 | 39 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 578 | 14 | 16 | 275 | 1 | 3 | 1 | 42 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 276 | | | 592 | | | 903 | 898 | 585 | 941 | 905 | 276 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 276 | | | 592 | | | 903 | 898 | 585 | 941 | 905 | 276 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 92 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1299 | | | 993 | | | 252 | 276 | 514 | 221 | 273 | 768 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 595 | 292 | 47 | 12 |
| Volume Left | 2 | 16 | 3 | 4 |
| Volume Right | 14 | 1 | 42 | 3 |
| cSH | 1299 | 993 | 471 | 301 |
| Volume to Capacity | 0.00 | 0.02 | 0.10 | 0.04 |
| Queue Length 95th (ft) | 0 | 1 | 8 | 3 |
| Control Delay (s) | 0.0 | 0.6 | 13.5 | 17.5 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.6 | 13.5 | 17.5 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 39.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
## 101: Lake Street & 15th Avenue

2/15/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 34 | 528 | 13 | 13 | 256 | 45 | 2 | 24 | 37 | 14 | 18 | 11 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 35 | 550 | 14 | 14 | 267 | 47 | 2 | 25 | 39 | 15 | 19 | 11 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 599 | 327 | 66 | 45 |
| Volume Left (vph) | 35 | 14 | 2 | 15 |
| Volume Right (vph) | 14 | 47 | 39 | 11 |
| Hadj (s) | 0.00 | -0.08 | -0.35 | -0.09 |
| Departure Headway (s) | 4.6 | 4.9 | 5.8 | 6.1 |
| Degree Utilization, x | 0.77 | 0.44 | 0.11 | 0.08 |
| Capacity (veh/h) | 756 | 712 | 556 | 519 |
| Control Delay (s) | 21.6 | 11.7 | 9.5 | 9.6 |
| Approach Delay (s) | 21.6 | 11.7 | 9.5 | 9.6 |
| Approach LOS | C | B | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 17.2 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 57.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 0 | 574 | 5 | 139 | 307 | 6 | 4 | 4 | 40 | 1 | 2 | 3 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 0 | 592 | 5 | 143 | 316 | 6 | 4 | 4 | 41 | 1 | 2 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.95 | | | | | | 0.95 | 0.95 | | 0.95 | 0.95 | 0.95 |
| vC, conflicting volume | 323 | | | 597 | | | 1205 | 1204 | 594 | 1244 | 1203 | 320 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 283 | | | 597 | | | 1217 | 1215 | 594 | 1258 | 1215 | 280 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 86 | | | 97 | 97 | 92 | 99 | 99 | 100 |
| cM capacity (veh/h) | 1220 | | | 990 | | | 132 | 148 | 508 | 113 | 148 | 722 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 597 | 466 | 49 | 6 |
| Volume Left | 0 | 143 | 4 | 1 |
| Volume Right | 5 | 6 | 41 | 3 |
| cSH | 1220 | 990 | 353 | 226 |
| Volume to Capacity | 0.00 | 0.14 | 0.14 | 0.03 |
| Queue Length 95th (ft) | 0 | 13 | 12 | 2 |
| Control Delay (s) | 0.0 | 4.0 | 16.9 | 21.4 |
| Lane LOS | | A | C | C |
| Approach Delay (s) | 0.0 | 4.0 | 16.9 | 21.4 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.5 | | |
| Intersection Capacity Utilization | 68.1% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4941 | |
| Flt Permitted | 0.62 | 1.00 | 1.00 | 0.29 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1126 | 1756 | 1492 | 512 | 1756 | 1492 | | 5012 | | | 4941 | |
| Volume (vph) | 192 | 395 | 28 | 59 | 157 | 105 | 0 | 2350 | 77 | 0 | 2058 | 295 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 196 | 403 | 29 | 60 | 160 | 107 | 0 | 2398 | 79 | 0 | 2100 | 301 |
| RTOR Reduction (vph) | 0 | 0 | 5 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 22 | 0 |
| Lane Group Flow (vph) | 196 | 403 | 24 | 60 | 160 | 105 | 0 | 2473 | 0 | 0 | 2379 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 371 | 578 | 491 | 169 | 578 | 491 | | 2889 | | | 2848 | |
| v/s Ratio Prot | | c0.23 | | | 0.09 | | | c0.49 | | | 0.48 | |
| v/s Ratio Perm | 0.17 | | 0.02 | 0.12 | | 0.07 | | | | | | |
| v/c Ratio | 0.53 | 0.70 | 0.05 | 0.36 | 0.28 | 0.21 | | 0.86 | | | 0.84 | |
| Uniform Delay, d1 | 23.1 | 24.8 | 19.4 | 21.6 | 21.0 | 20.6 | | 15.0 | | | 14.7 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.58 | | | 1.00 | |
| Incremental Delay, d2 | 5.3 | 6.8 | 0.2 | 5.7 | 1.2 | 1.0 | | 1.9 | | | 3.1 | |
| Delay (s) | 28.4 | 31.6 | 19.6 | 27.4 | 22.2 | 21.6 | | 10.7 | | | 17.8 | |
| Level of Service | C | C | B | C | C | C | | B | | | B | |
| Approach Delay (s) | | 30.1 | | | 22.9 | | | 10.7 | | | 17.8 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.4 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.80 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.2% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Ave.

2/15/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 458 | 13 | 3 | 308 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 1 | 472 | 13 | 3 | 318 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 69 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.80 | | | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | |
| vC, conflicting volume | 322 | | | 486 | | | 810 | 809 | 479 | 825 | 813 | 320 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 322 | | | 357 | | | 762 | 761 | 349 | 781 | 767 | 320 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 96 | 99 | 97 | 99 | 99 | 100 |
| cM capacity (veh/h) | 1244 | | | 966 | | | 256 | 269 | 559 | 242 | 267 | 726 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 487 | 325 | 31 | 7 |
| Volume Left | 1 | 3 | 11 | 3 |
| Volume Right | 13 | 4 | 16 | 2 |
| cSH | 1244 | 966 | 363 | 309 |
| Volume to Capacity | 0.00 | 0.00 | 0.09 | 0.02 |
| Queue Length 95th (ft) | 0 | 0 | 7 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 15.8 | 16.9 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 15.8 | 16.9 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.8 | | |
| Intersection Capacity Utilization | 35.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue

2/15/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 24 | 525 | 14 | 11 | 251 | 23 | 7 | 16 | 29 | 16 | 14 | 14 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 26 | 565 | 15 | 12 | 270 | 25 | 8 | 17 | 31 | 17 | 15 | 15 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 528 | | | | | | | |
| pX, platoon unblocked | 0.93 | | | | | | 0.93 | 0.93 | | 0.93 | 0.93 | 0.93 |
| vC, conflicting volume | 295 | | | 580 | | | 952 | 942 | 572 | 969 | 937 | 282 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 244 | | | 580 | | | 949 | 938 | 572 | 967 | 933 | 231 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 96 | 93 | 94 | 91 | 94 | 98 |
| cM capacity (veh/h) | 1245 | | | 1004 | | | 206 | 241 | 523 | 191 | 242 | 759 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 605 | 306 | 56 | 47 |
| Volume Left | 26 | 12 | 8 | 17 |
| Volume Right | 15 | 25 | 31 | 15 |
| cSH | 1245 | 1004 | 334 | 275 |
| Volume to Capacity | 0.02 | 0.01 | 0.17 | 0.17 |
| Queue Length 95th (ft) | 2 | 1 | 15 | 15 |
| Control Delay (s) | 0.6 | 0.5 | 18.0 | 20.8 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.6 | 0.5 | 18.0 | 20.8 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.4 | | |
| Intersection Capacity Utilization | 49.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
106: California Street & 14th Avenue 2/15/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 14 | 544 | 12 | 50 | 272 | 27 | 0 | 7 | 26 | 121 | 12 | 13 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 15 | 573 | 13 | 53 | 286 | 28 | 0 | 7 | 27 | 127 | 13 | 14 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 228 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 315 | | | 585 | | | 877 | 1028 | 293 | 753 | 1021 | 157 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 245 | | | 585 | | | 830 | 988 | 293 | 701 | 980 | 81 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 95 | | | 100 | 97 | 96 | 55 | 94 | 99 |
| cM capacity (veh/h) | 1280 | | | 999 | | | 229 | 224 | 710 | 282 | 226 | 930 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 301 | 299 | 196 | 172 | 35 | 154 |
| Volume Left | 15 | 0 | 53 | 0 | 0 | 127 |
| Volume Right | 0 | 13 | 0 | 28 | 27 | 14 |
| cSH | 1280 | 1700 | 999 | 1700 | 486 | 294 |
| Volume to Capacity | 0.01 | 0.18 | 0.05 | 0.10 | 0.07 | 0.52 |
| Queue Length 95th (ft) | 1 | 0 | 4 | 0 | 6 | 71 |
| Control Delay (s) | 0.5 | 0.0 | 2.7 | 0.0 | 13.0 | 29.9 |
| Lane LOS | A | | A | | B | D |
| Approach Delay (s) | 0.2 | | 1.5 | | 13.0 | 29.9 |
| Approach LOS | | | | | B | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 4.9 | | |
| Intersection Capacity Utilization | 50.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
107: California Street & Park Presidio Boulevard 2/15/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3198 | | | 4960 | | | 5002 | |
| Flt Permitted | 0.48 | 1.00 | | 0.27 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 837 | 3318 | | 472 | 3198 | | | 4960 | | | 5002 | |
| Volume (vph) | 86 | 583 | 22 | 93 | 252 | 96 | 0 | 2245 | 251 | 0 | 2048 | 97 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 89 | 601 | 23 | 96 | 260 | 99 | 0 | 2314 | 259 | 0 | 2111 | 100 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 16 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 89 | 621 | 0 | 96 | 356 | 0 | 0 | 2557 | 0 | 0 | 2205 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 256 | 1015 | | 144 | 978 | | | 2976 | | | 3001 | |
| v/s Ratio Prot | | 0.19 | | | 0.11 | | | c0.52 | | | 0.44 | |
| v/s Ratio Perm | 0.11 | | | c0.20 | | | | | | | | |
| v/c Ratio | 0.35 | 0.61 | | 0.67 | 0.36 | | | 0.86 | | | 0.73 | |
| Uniform Delay, d1 | 22.9 | 25.2 | | 25.7 | 23.0 | | | 14.0 | | | 12.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.60 | |
| Incremental Delay, d2 | 3.7 | 2.7 | | 21.8 | 1.0 | | | 3.5 | | | 0.9 | |
| Delay (s) | 26.6 | 27.9 | | 47.5 | 24.1 | | | 17.5 | | | 8.3 | |
| Level of Service | C | C | | D | C | | | B | | | A | |
| Approach Delay (s) | | 27.8 | | | 29.0 | | | 17.5 | | | 8.3 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.2 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.79 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 80.9% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## 100: Lake Street & 17th Street



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 279 | 10 | 25 | 401 | 4 | 4 | 1 | 25 | 7 | 3 | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 297 | 11 | 27 | 427 | 4 | 4 | 1 | 27 | 7 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 431 | | | 307 | | | 792 | 790 | 302 | 815 | 794 | 429 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 431 | | | 307 | | | 792 | 790 | 302 | 815 | 794 | 429 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 96 | 97 | 99 | 100 |
| cM capacity (veh/h) | 1139 | | | 1265 | | | 301 | 317 | 742 | 282 | 316 | 630 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 310 | 457 | 32 | 13 |
| Volume Left | 2 | 27 | 4 | 7 |
| Volume Right | 11 | 4 | 27 | 2 |
| cSH | 1139 | 1265 | 598 | 320 |
| Volume to Capacity | 0.00 | 0.02 | 0.05 | 0.04 |
| Queue Length 95th (ft) | 0 | 2 | 4 | 3 |
| Control Delay (s) | 0.1 | 0.7 | 11.4 | 16.7 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 11.4 | 16.7 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 48.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





## 101: Lake Street & 15th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 20 | 286 | 5 | 18 | 402 | 19 | 8 | 26 | 17 | 44 | 15 | 20 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 21 | 304 | 5 | 19 | 428 | 20 | 9 | 28 | 18 | 47 | 16 | 21 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 331 | 467 | 54 | 84 |
| Volume Left (vph) | 21 | 19 | 9 | 47 |
| Volume Right (vph) | 5 | 20 | 18 | 21 |
| Hadj (s) | 0.00 | -0.02 | -0.17 | -0.04 |
| Departure Headway (s) | 4.9 | 4.7 | 5.8 | 5.9 |
| Degree Utilization, x | 0.45 | 0.61 | 0.09 | 0.14 |
| Capacity (veh/h) | 701 | 741 | 522 | 531 |
| Control Delay (s) | 11.9 | 14.9 | 9.4 | 9.8 |
| Approach Delay (s) | 11.9 | 14.9 | 9.4 | 9.8 |
| Approach LOS | B | B | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 13.1 | | |
| HCM Level of Service | B | | |
| Intersection Capacity Utilization | 45.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

2/16/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 0 | 343 | 4 | 118 | 436 | 5 | 2 | 0 | 49 | 5 | 0 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 0 | 365 | 4 | 126 | 464 | 5 | 2 | 0 | 52 | 5 | 0 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.87 | | | | | | 0.87 | 0.87 | | 0.87 | 0.87 | 0.87 |
| vC, conflicting volume | 469 | | | 369 | | | 1086 | 1087 | 367 | 1137 | 1087 | 466 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 387 | | | 369 | | | 1099 | 1101 | 367 | 1158 | 1100 | 384 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 90 | | | 99 | 100 | 92 | 96 | 100 | 100 |
| cM capacity (veh/h) | 1024 | | | 1200 | | | 152 | 166 | 683 | 129 | 166 | 579 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 369 | 595 | 54 | 6 |
| Volume Left | 0 | 126 | 2 | 5 |
| Volume Right | 4 | 5 | 52 | 1 |
| cSH | 1024 | 1200 | 601 | 148 |
| Volume to Capacity | 0.00 | 0.10 | 0.09 | 0.04 |
| Queue Length 95th (ft) | 0 | 9 | 7 | 3 |
| Control Delay (s) | 0.0 | 2.7 | 11.6 | 30.5 |
| Lane LOS | | A | B | D |
| Approach Delay (s) | 0.0 | 2.7 | 11.6 | 30.5 |
| Approach LOS | | | B | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.4 | | |
| Intersection Capacity Utilization | 61.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

2/16/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4955 | |
| Flt Permitted | 0.42 | 1.00 | 1.00 | 0.48 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 772 | 1756 | 1492 | 837 | 1756 | 1492 | | 5012 | | | 4955 | |
| Volume (vph) | 121 | 251 | 25 | 73 | 288 | 142 | 0 | 2174 | 72 | 0 | 2265 | 271 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 126 | 261 | 26 | 76 | 300 | 148 | 0 | 2265 | 75 | 0 | 2359 | 282 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 17 | 0 |
| Lane Group Flow (vph) | 126 | 261 | 23 | 76 | 300 | 145 | 0 | 2336 | 0 | 0 | 2624 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 254 | 578 | 491 | 276 | 578 | 491 | | 2889 | | | 2856 | |
| v/s Ratio Prot | | 0.15 | | | c0.17 | | | 0.47 | | | c0.53 | |
| v/s Ratio Perm | 0.16 | | 0.02 | 0.09 | | 0.10 | | | | | | |
| v/c Ratio | 0.50 | 0.45 | 0.05 | 0.28 | 0.52 | 0.29 | | 0.81 | | | 0.92 | |
| Uniform Delay, d1 | 22.8 | 22.5 | 19.4 | 21.0 | 23.1 | 21.2 | | 14.3 | | | 16.2 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.69 | | | 1.00 | |
| Incremental Delay, d2 | 6.8 | 2.5 | 0.2 | 2.5 | 3.3 | 1.5 | | 1.2 | | | 6.1 | |
| Delay (s) | 29.6 | 25.0 | 19.6 | 23.5 | 26.4 | 22.7 | | 11.1 | | | 22.3 | |
| Level of Service | C | C | B | C | C | C | | B | | | C | |
| Approach Delay (s) | | 26.1 | | | 24.9 | | | 11.1 | | | 22.3 | |
| Approach LOS | | C | | | C | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 18.4 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.77 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.7% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
104: Lake Street & Funston Avenue 2/16/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✥ | | | ✥ | | | ✥ | | | ✥ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 13 | 304 | 6 | 7 | 481 | 5 | 18 | 0 | 16 | 0 | 0 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 13 | 310 | 6 | 7 | 491 | 5 | 18 | 0 | 16 | 0 | 0 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 79 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.89 | | | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | |
| vC, conflicting volume | 496 | | | 316 | | | 852 | 850 | 313 | 864 | 851 | 493 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 496 | | | 228 | | | 832 | 831 | 224 | 846 | 831 | 493 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 93 | 100 | 98 | 100 | 100 | 99 |
| cM capacity (veh/h) | 1073 | | | 1192 | | | 252 | 267 | 726 | 243 | 267 | 580 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 330 | 503 | 35 | 4 |
| Volume Left | 13 | 7 | 18 | 0 |
| Volume Right | 6 | 5 | 16 | 4 |
| cSH | 1073 | 1192 | 364 | 580 |
| Volume to Capacity | 0.01 | 0.01 | 0.10 | 0.01 |
| Queue Length 95th (ft) | 1 | 0 | 8 | 1 |
| Control Delay (s) | 0.5 | 0.2 | 15.9 | 11.3 |
| Lane LOS | A | A | C | B |
| Approach Delay (s) | 0.5 | 0.2 | 15.9 | 11.3 |
| Approach LOS | | | C | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.0 | | |
| Intersection Capacity Utilization | 43.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



HCM Unsignalized Intersection Capacity Analysis
105: California Street & 15th Avenue 2/16/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✥ | | | ✥ | | | ✥ | | | ✥ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 19 | 385 | 7 | 16 | 389 | 21 | 8 | 11 | 30 | 13 | 15 | 10 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 19 | 393 | 7 | 16 | 397 | 21 | 8 | 11 | 31 | 13 | 15 | 10 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 524 | | | | | | | |
| pX, platoon unblocked | 0.88 | | | | | | 0.88 | 0.88 | | 0.88 | 0.88 | 0.88 |
| vC, conflicting volume | 418 | | | 400 | | | 893 | 886 | 396 | 912 | 879 | 408 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 342 | | | 400 | | | 879 | 871 | 396 | 900 | 863 | 330 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 96 | 96 | 95 | 94 | 94 | 98 |
| cM capacity (veh/h) | 1086 | | | 1170 | | | 219 | 250 | 657 | 208 | 252 | 633 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 419 | 435 | 50 | 39 |
| Volume Left | 19 | 16 | 8 | 13 |
| Volume Right | 7 | 21 | 31 | 10 |
| cSH | 1086 | 1170 | 388 | 276 |
| Volume to Capacity | 0.02 | 0.01 | 0.13 | 0.14 |
| Queue Length 95th (ft) | 1 | 1 | 11 | 12 |
| Control Delay (s) | 0.6 | 0.4 | 15.6 | 20.2 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.6 | 0.4 | 15.6 | 20.2 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.1 | | |
| Intersection Capacity Utilization | 38.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

2/16/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 15 | 407 | 6 | 62 | 418 | 32 | 2 | 4 | 30 | 93 | 23 | 6 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 16 | 442 | 7 | 67 | 454 | 35 | 2 | 4 | 33 | 101 | 25 | 7 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 224 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 489 | | | 449 | | | 859 | 1102 | 224 | 895 | 1088 | 245 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 352 | | | 449 | | | 756 | 1021 | 224 | 795 | 1005 | 85 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 94 | | | 99 | 98 | 96 | 56 | 88 | 99 |
| cM capacity (veh/h) | 1117 | | | 1122 | | | 235 | 202 | 785 | 230 | 207 | 883 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 238 | 228 | 295 | 262 | 39 | 133 |
| Volume Left | 16 | 0 | 67 | 0 | 2 | 101 |
| Volume Right | 0 | 7 | 0 | 35 | 33 | 7 |
| cSH | 1117 | 1700 | 1122 | 1700 | 541 | 233 |
| Volume to Capacity | 0.01 | 0.13 | 0.06 | 0.15 | 0.07 | 0.57 |
| Queue Length 95th (ft) | 1 | 0 | 5 | 0 | 6 | 79 |
| Control Delay (s) | 0.7 | 0.0 | 2.4 | 0.0 | 12.2 | 38.9 |
| Lane LOS | A | | A | | B | E |
| Approach Delay (s) | 0.4 | | 1.3 | | 12.2 | 38.9 |
| Approach LOS | | | | | B | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 5.4 | | |
| Intersection Capacity Utilization | 49.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

2/16/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| 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 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3302 | | 1668 | 3216 | | | 4968 | | | 4999 | |
| Flt Permitted | 0.38 | 1.00 | | 0.42 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 664 | 3302 | | 735 | 3216 | | | 4968 | | | 4999 | |
| Volume (vph) | 66 | 433 | 31 | 153 | 397 | 125 | 0 | 2055 | 204 | 0 | 2248 | 115 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 68 | 446 | 32 | 158 | 409 | 129 | 0 | 2119 | 210 | 0 | 2318 | 119 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 14 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 68 | 477 | 0 | 158 | 536 | 0 | 0 | 2315 | 0 | 0 | 2431 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Effective Green, g (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | | | 0.51 | | | 0.51 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 266 | 1321 | | 294 | 1286 | | | 2513 | | | 2529 | |
| v/s Ratio Prot | | 0.14 | | | 0.17 | | | 0.47 | | | c0.49 | |
| v/s Ratio Perm | 0.10 | | | c0.22 | | | | | | | | |
| v/c Ratio | 0.26 | 0.36 | | 0.54 | 0.42 | | | 0.92 | | | 0.96 | |
| Uniform Delay, d1 | 17.0 | 17.9 | | 19.5 | 18.4 | | | 19.4 | | | 20.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.68 | |
| Incremental Delay, d2 | 2.3 | 0.8 | | 6.9 | 1.0 | | | 7.0 | | | 5.7 | |
| Delay (s) | 19.4 | 18.6 | | 26.4 | 19.4 | | | 26.4 | | | 19.4 | |
| Level of Service | B | B | | C | B | | | C | | | B | |
| Approach Delay (s) | | 18.7 | | | 21.0 | | | 26.4 | | | 19.4 | |
| Approach LOS | | B | | | C | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 22.2 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.77 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 77.4% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

Wilbur Smith Associates
ENGINEERS PLANNERS ECONOMISTS

# MEMO

**SAN FRANCISCO OFFICE**
**February 22, 2006**

Project Number: 395900

**To:** Amy Marshall, The Presidio Trust

**From:** José I. Farrán, Project Manager
Nate Chanchareon, Senior Transportation Engineer

**Subject:** The Presidio of San Francisco
Public Health Service Hospital Site Supplemental Environmental Impact Statement
Technical Memorandum No. 2 – Expanded Travel Demand Assumptions

## 1. INTRODUCTION

This Technical Memorandum provides a description of trip generation rates, mode split, auto occupancy factors and other travel and parking demand parameters associated with the four proposed alternatives for rehabilitation and reuse of the Presidio of San Francisco's Public Health Service Hospital (PHSH) development site, as well as the "Requested No Action" alternative, which would maintain the recent uses of the project site.

The number of weekday daily, AM and PM peak hour trips generated by each of the alternatives is based on the methodology used in the cumulative analysis for the PTMP EIS, which, in turn, was based on trip-generation information from standard data sources such as the San Francisco Planning Department Guidelines for Environmental Review (SF Guidelines), the State of California Department of Transportation (Caltrans), and the Institute of Transportation Engineers (ITE). Modal split and auto occupancy for each of the alternatives varies by land use type, and whether the trip is external or internal to the Presidio. All of these travel characteristics incorporate the TDM measures associated with all of the proposed alternatives. Parking demand has also been estimated for midday weekday, evening and weekend conditions, based on the methodology used in the PTMP EIS.

## 2. LAND USES ASSOCIATED WITH EACH PHSH ALTERNATIVE

Five alternatives are being considered for evaluation in the Draft Environmental Impact Statement for the PHSH site. These are a "Requested No Action" alternative that represents the recent uses of the project site, an alternative that represents the PTMP land use scenario analyzed in the PTMP EIS (Alternative 1), and three additional alternatives (Alternatives 2, 3, and 4), each with differences in the proposed amount and location of demolition and new replacement construction and amount of various land uses. The following paragraphs provide a summary



description of each alternative. Table 1 summarizes the type and intensity of the land uses for the four alternatives.

**Table 1**
**Land Use Type and Intensity by Alternative**

| Land Use Type | PHSH Alternative | | | | |
|---|---|---|---|---|---|
| | Requested No Action Alternative | Alternative 1: PTMP Alternative | Alternative 2: Wings Retained/Trust Revised Alternative | Alternative 3: Wings Removed Alternative | Alternative 4: Battery Caulfield Alternative |
| Industrial/Warehouse (gsq.ft.) | 15,105 | 1,480 | 15,000 | 32,000 | 15,000 |
| Office (gsq.ft.) | 14,332 | 9,583 | 45,050 | 0 | 0 |
| Conference (gsq.ft.) | 0 | 10,000 | 0 | 0 | 0 |
| Recreation (gsq.ft.) | 0 | 0 | 0 | 0 | 5,400 |
| Cultural/Education (gsq.ft.) | 0 | 153,214 | 1,700 | 0 | 0 |
| Day Care (gsq.ft.) | 37,708 | 37,708 | 4,750 | 10,000 | 9,600 |
| Residential (d.u.) | 0 | 185-210 | 230 | 230 | 114 |
| Senior Residential (d.u.) | 0 | 0 | 0 | 0 | 155 |
| Total occupied building area (gsq.ft.) | 67,145 | 400,000 | 400,000 | 275,000 | 362,000 |

Source: The Presidio Trust – January 2006.
Notes:
gsq.ft. = gross square feet, d.u. = dwelling units

*Requested No Action Alternative*– This alternative would maintain the recent uses for the project site. No building demolition or replacement construction would occur, and therefore the existing total building area of 400,000 gsq.ft., would be maintained; however, only 67,145 gsq.ft. of the existing building area would be occupied and utilized. The number of parking spaces in the west lot would be reduced concurrently with the remediation activities on the lower plateau to provide a total parking supply of 276 spaces, including 246 spaces on the lower plateau and 30 spaces on the upper plateau.

*Alternative 1: PTMP Alternative* – This alternative would rehabilitate buildings within the PHSH district to accommodate residential and educational uses. No building demolition or replacement construction would occur, and therefore the existing total building area of 400,000 gsq.ft., would be maintained. The historic concentration of development would be retained on the lower plateau (i.e., the PHSH complex), and the three-acre Battery Caulfield site, on the northern end of the district on the upper plateau, would continue to be used in the short term as a maintenance/corporation yard for Trust operations. The historic portion of Building 1801 and its non-historic additions (including the seven-story end "wings" and large one-story "connector" in front of the original main entry) would be rehabilitated for residential use (approximately 150 dwelling units and 52 dorm rooms units) together with the historic housing on Wyman Terrace (approximately 11 units). Other ancillary buildings in the district would be rehabilitated for mainly educational and some supporting uses. According to the Final Plan Alternative described in the PTMP, this alternative was proposed to have a parking supply of 708 spaces. However, the more site-specific analysis reflected in the Supplemental Draft EIS for the PHSH district indicates that the parking supply could be reduced considerably from this level to 537 spaces, including 505 on the lower plateau and 32 on the upper plateau.

*Alternative 2: Wings Retained/Trust Revised Alternative* – This alternative would rehabilitate historic buildings within the PHSH district, and would concentrate and primarily locate development on the lower plateau for residential use (up to 217 residential units) and reuse buildings on the upper plateau for residential (up to 13 units) and other uses. Both the historic portion and non-historic wings of Building 1801 would be rehabilitated. Non-historic buildings and other non-historic portions of Building 1801 would be removed and replaced with an equivalent amount of compatible infill construction at locations on the lower plateau to maintain the existing total building area of 400,000 gsq.ft. No new buildings would be constructed on the Battery Caulfield site, which would remain as a Trust maintenance/corporation yard. This alternative proposes a total of 452 parking spaces, 123 of which would be underground or under buildings to increase the amount of landscaped open space, leaving 308 surface parking spaces on the lower plateau and 21 surface parking spaces on the upper plateau.

*Alternative 3: Wings Removed Alternative* – This alternative would rehabilitate historic buildings within the PHSH district, remove the non-historic wings of Building 1801, and provide no replacement construction at Battery Caulfield or elsewhere within the district. Total square footage of building area in the district would decrease to about 275,000 gsq.ft. Buildings would be rehabilitated for residential use (230 units total). The Battery Caulfield site would remain in the short term as a Trust maintenance/corporation yard, and outlying buildings would continue to serve as Trust maintenance facilities. This alternative proposes a supply of 330 parking spaces.

*Alternative 4: Battery Caulfield Alternative* – This alternative would rehabilitate historic buildings within the PHSH district, remove the non-historic wings and provide for replacement construction within the Battery Caulfield site for primarily residential uses. Several non-historic buildings would be removed and replaced with an equivalent amount of compatible new residential construction (up to 192 residential units) within the lower plateau and within Battery Caulfield (about 77 units) for a total of 269 residential units, 155 of which would be senior/assisted living units. Total square footage of building area in the district would decrease to about 362,000 gsq.ft. This alternative proposes a supply of 267 parking spaces.

## 3. TRIP GENERATION

In order to estimate the number of person trips that would be generated by each alternative, trip generation rates were developed as explained below for the different land use types (office, retail, residential, etc.) and applied to each quantity. A trip generation rate expresses the number of person trips that would be generated by a unit of given land use type. Person trips for each alternative were calculated for weekday daily, AM peak hour and PM peak hour conditions.

Trip generation rates by land use type were estimated based on information obtained from sources that are widely used and accepted as industry standards, including the San Francisco Transportation Impact Analysis Guidelines for Environmental Review, and the Institute of Transportation Engineers Trip Generation Manual-Sixth Edition. The Caltrans' 15th Progress Report on Trip Ends Generation Research Counts and the San Diego Traffic Generators Manual



were also consulted. The resulting person trip generation rates shown in Table 2 were developed to estimate the number of trips that were representative of the land uses expected in the PHSH site.

Based on the Presidio Trust's live/work model, it is expected that many of the employed residents living in the Presidio would also work within the Presidio. The resulting balance of employment and residential land uses within the Presidio in 2020 creates the opportunity for individuals that live in the Presidio to also work within the Presidio, indicating that some of the trips would both originate and terminate in the Presidio. So that these internal trips could be evaluated differently than trips to and from other parts of the City or Bay Area, the total number of person trips generated by the proposed land uses in each alternative was separated into external and internal trips. The mix of land uses expected within the Presidio in 2020 would also create the opportunity for "linked" trips. "Linked" trips are trips that are made as intermediate stops on the way from an origin to a primary trip destination. For example, a Presidio resident who stops at a café on the trip from home to work would be a linked trip. The fact that some trips within the Presidio would be linked yields fewer trips than would occur otherwise.

**Table 2**
**Trip Generation Rates by Land Use**

| | **Land Use Type** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Time Period** | **Industrial/ Warehouse (1)** | **Office (1)** | **Conference (1)** | **Recreation (1)** | **Cultural/ Educational (1)** | **Day Care (1)** | **Residential (2)** | **Senior Residential** |
| Daily | 6 | 15 | 8.5 | 45 | 40 | 57 | 10 | 5 |
| *Inbound* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* |
| *Outbound* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* |
| AM Peak Hour | 0.60 | 2.25 | 0.85 | 2.48 | 2.00 | 9.11 | 0.90 | 0.20 |
| *Inbound* | *80%* | *90%* | *80%* | *60%* | *80%* | *53%* | *20%* | *20%* |
| *Outbound* | *20%* | *10%* | *20%* | *40%* | *20%* | *47%* | *80%* | *80%* |
| PM Peak Hour | 0.90 | 1.88 | 0.85 | 4.50 | 5.2 | 10.25 | 1.05 | 0.25 |
| *Inbound* | *20%* | *15%* | *30%* | *50%* | *50%* | *47%* | *70%* | *70%* |
| *Outbound* | *80%* | *85%* | *70%* | *50%* | *50%* | *53%* | *30%* | *30%* |

Source: Wilbur Smith Associates – January 2006.
Notes:
(1) Number of person trips per 1,000 gross square feet
(2) Number of person trips per dwelling unit

Table 3 presents the internal/external split by alternative. Each land use type was assumed to have a different internal/external split, and the figures in Table 3 represent the weighted average of these different internal/external splits for the various types of land uses making up each alternative. Approximately 6 to 13 percent of the trips generated or attracted to the PHSH site were assumed to begin and end within the Presidio, depending of the alternative. Persons employed within the Presidio could walk, bike or ride the internal shuttle service to destinations within the Presidio. Because internal trips are more likely to be made by transit, walking or bicycling than external trips, the separation of the two types of trips allowed for the application of different mode splits.

**Table 3**
**Internal, External and Linked Person Trip Percentages by Alternative**

| Person Trip Type | PHSH Alternative | | | | |
|---|---|---|---|---|---|
| | Requested No Action Alternative | Alternative 1: PTMP Alternative | Alternative 2: Wings Retained/Trust Revised Alternative | Alternative 3: Wings Removed Alternative | Alternative 4: Battery Caulfield Alternative |
| Percentage of External Trips | 94% | 87% | 93% | 94% | 88% |
| Percentage of Internal Trips | 6% | 13% | 7% | 6% | 12% |
| Non-linked trip factor for internal trips | 51% | 68% | 79% | 85% | 79% |
| Overall linked trip factor | 6% | 7% | 3% | 2% | 4% |

Source: Wilbur Smith Associates – January 2006

## 4. MODE SPLIT

PHSH site-generated person trips were assigned to travel modes in order to estimate the number of auto, transit, and walk/bicycle trips. Mode split information was obtained from the PTMP EIS, Presidio employee and resident surveys, and the minimum performance standards of the Transportation Demand Management Program.

The mode split obtained for the different alternatives assumes implementation of Travel Demand Management (TDM) measures associated with each alternative that would be phased in as more and more people work and live in the Presidio. Implementation of a TDM program would improve transit, pedestrian and bicycle conditions and would thereby reduce auto usage to Presidio destinations. The TDM program to be implemented as part of the Final Plan Alternative of the PTMP EIS would include the following:

- Mandatory participation and commitment to trip-reduction requirements by all non-residential tenants;
- A clean-fuel shuttle bus serving the entire Presidio with direct connections to Muni and GGT routes;
- On-site sale of transit passes;
- Transit and ridesharing information disseminated on kiosks within the Park, the Presidio Trust's website, and employee orientation programs;
- Mandatory event-specific TDM programs for all special events;
- Periodic monitoring of traffic volumes and mode choice among Presidio residents and employees;



- Express bus service to regional transit connections (i.e., BART and the Transbay Terminal);
- Secure bicycle parking; and
- Parking Management Program including:
  - A constrained supply of parking spaces within the Presidio; and
  - A parking regulation and fee program.

The TDM program consists of components that can be implemented to meet or exceed the intended traffic reductions. Expected reductions were used in calculating the potential impact of future vehicular traffic in the park and surrounding areas. The TDM traffic reductions used in the transportation analyses reflect the Trust's minimum performance standards. Since traffic reductions are likely to exceed what has been incorporated here, the traffic forecasts can be considered somewhat conservative.

Table 4 presents the projected daily, AM peak hour and PM peak hour travel demand estimates by mode for typical weekday conditions for the five PHSH site alternatives being analyzed for transportation impacts. Auto person trips refer to person trips either as a driver or passenger in a private vehicle. To determine the number of vehicle trips generated by the number of auto person trips, average vehicle occupancy was used. The assumed vehicle occupancy factor varies by land use. The chosen vehicle occupancy factors were based on the PTMP EIS, which in turn are based on Citywide Travel Behavior Survey (CTBS) travel data published by the San Francisco Planning Department. Therefore, the vehicle occupancy factors are consistent with the vehicle occupancy factors used in the San Francisco Planning Department's environmental analyses. Daily and peak hour travel demand vary by alternative, depending on the land use elements contained in the alternatives and the intensity of use. Detailed travel demand calculations by alternative are provided in Appendix A.

As shown in Table 4, the number of weekday daily person-trips would range from a low of about 2,505 for the Battery Caulfield Alternative (Alternative 4) to a high of approximately 9,197 for the PTMP Alternative (Alternative 1); vehicle trips would follow a similar pattern. In general, approximately eight to ten percent of the daily trips generated by Alternatives 1 through 4 occur during the AM peak hour, and eleven to fourteen percent occur during the PM peak hour. For the Requested No Action Alternative, approximately sixteen percent of the daily trips would occur during the AM peak hour, and approximately seventeen percent occur during the PM peak hour. The primary reason for the difference in peak hour trips for the Requested No Action Alternative versus Alternatives 1 through 4 is that the existing cultural/educational uses of the site tend to generate higher AM and PM peak hour trips; while the proposed residential uses generate high AM peak hour trips, but have a more dispersed PM trip generation rate (the PM peak hour trips occur over a longer peak period, therefore the PM peak hour trip generation is not as concentrated).

**Table 4**
**Estimated Trip Generation[1] by Mode of Travel and by Alternative**
**Weekday Daily, AM and PM Peak Hour**

| Time Period | PHSH Alternative: Requested No Action Alternative | Alternative 1: PTMP Alternative | Alternative 2: Wings Retained/Trust Revised Alternative | Alternative 3: Wings Removed Alternative | Alternative 4: Battery Caulfield Alternative |
|---|---|---|---|---|---|
| **Daily** | | | | | |
| Person-Trips[2] | | | | | |
| Auto | 1,869 | 6,190 | 2,087 | 1,962 | 1,683 |
| Transit | 265 | 1,524 | 558 | 484 | 417 |
| Other[3] | 179 | 1,483 | 541 | 452 | 404 |
| **Total** | **2,313** | **9,197** | **3,186** | **2,898** | **2,504** |
| *Vehicle-Trips[4]* | *1,296* | *4,286* | *1,725* | *1,542* | *1,295* |
| **AM Peak Hour** | | | | | |
| Person-Trips[2] | | | | | |
| Auto | 295 | 542 | 224 | 209 | 159 |
| Transit | 41 | 114 | 58 | 48 | 34 |
| Other[3] | 27 | 103 | 56 | 43 | 31 |
| **Total** | **363** | **759** | **338** | **300** | **224** |
| *Vehicle-Trips[4]* | *203* | *377* | *187* | *161* | *119* |
| **PM Peak Hour** | | | | | |
| Person-Trips[2] | | | | | |
| Auto | 328 | 901 | 246 | 245 | 189 |
| Transit | 45 | 212 | 64 | 57 | 42 |
| Other[3] | 30 | 203 | 61 | 52 | 38 |
| **Total** | **403** | **1,316** | **371** | **354** | **269** |
| *Vehicle-Trips[4]* | *225* | *623* | *202* | *189* | *142* |

Source: Wilbur Smith Associates – January 2006.
Notes:
1. Includes total number (internal plus external) inbound and outbound trips
2. Person-trips refer to trips made by all modes
3. Other includes walk, bicycle and other modes
4. Vehicle trips are calculated by dividing the auto person trips by the average number of persons per vehicle for each individual land use and then added together for each alternative

The transportation mode split, which is the percentage of total trips that would occur via a private vehicle, transit, or as a bicycle-or pedestrian, for each alternative reflects implementation of improvements to encourage transit, pedestrian and bicycle modes and discourage single occupant vehicle travel. The mode split differs for each land use type as well as for external and internal trips; thus, the overall modal split represents the composite of that for all the land uses, and since each alternative has a different mix of land uses, the overall mode split would vary by



alternative. Similarly, the average vehicle occupancy (number of person per vehicles) varies by land use type and for external and internal trips, and therefore would also vary by alternative. Table 5 summarizes the modal split percentages and average vehicle occupancies for each of the five PHSH site alternatives.

**Table 5**
**Mode Choice and Vehicle Occupancy Characteristics by Alternative**
**Weekday Daily Total Trips**

| Person Trip Type | PHSH Alternative: Requested No Action Alternative | Alternative 1: PTMP Alternative | Alternative 2: Wings Retained/Trust Revised Alternative | Alternative 3: Wings Removed Alternative | Alternative 4: Battery Caulfield Alternative |
|---|---|---|---|---|---|
| Mode Choice Percentages | | | | | |
| Auto | 81% | 67% | 65% | 67% | 67% |
| Transit | 11% | 17% | 18% | 17% | 17% |
| Other[1] | 8% | 16% | 17% | 16% | 16% |
| Total[2] | 100% | 100% | 100% | 100% | 100% |
| Average Vehicle Occupancy[3] | 1.4 | 1.4 | 1.2 | 1.3 | 1.3 |

Source: Wilbur Smith Associates – January 2006.
Notes:
1. Other includes walk, bicycle and other modes
2. Total may not add up to 100% due to rounding
3. Average number of passengers per vehicle

As shown in Table 5, the modal split for the Requested No Action Alternative would be approximately 81 percent by auto, 11 percent by transit use, and 8 percent by walking and bicycle; while the PTMP alternative modal split would be approximately 67 percent by auto, 17 percent by transit use, and 16 percent by walking and bicycle. For the other three alternatives, the modal split would be approximately 65 to 67 percent by auto, 17 to 18 percent by transit use, and between 16 to 17 percent by walking and bicycle. The average number of occupants per vehicle would be between 1.2 and 1.4 for all alternatives.

## 5. TRIP DISTRIBUTION

The geographic distribution of employee, visitor and resident trips to the PHSH site was based on data gathered as part of the PTMP EIS transportation analyses, which in turn was based on a survey of Presidio employees, the San Francisco Guidelines for Environmental Review, and results from the San Francisco County Transportation Authority travel demand model. These data sources were used to develop a geographic distribution pattern that reflects distribution patterns for a project in the same general area of San Francisco, but is also consistent with distribution patterns of Presidio employees. With the exception of the Presidio survey data, these sources are widely used for projects throughout San Francisco. The PHSH generated trips were distributed to San Francisco, the East Bay, the North Bay, and the South Bay. Table 6 presents project trip distribution. The trips to and from San Francisco were further separated into four quadrants of the City, or Superdistricts as described in the Citywide Travel Behavior Survey. Based on the trip distribution, external vehicle trips were assigned to the local street network, and external transit trips were assigned to the appropriate transit routes.

**Table 6**
**Project Trip Distribution**

| Origin/Destination | Percent Trip Distribution (In & Out) | |
|---|---|---|
| | AM | PM |
| Superdistrict 1 | 11 % | 11 % |
| Superdistrict 2 | 27% | 27% |
| Superdistrict 3 | 23% | 23% |
| Superdistrict 4 | 19% | 19% |
| East Bay | 5% | 5% |
| North Bay | 10% | 10% |
| South Bay | 5% | 5% |
| Total | 100% | 100% |

Source: Wilbur Smith Associates – January 2006

## 6. PARKING DEMAND

Parking demand for the five land use alternatives has been estimated for the midday weekday, evening and weekend conditions, based on the methodology used in the PTMP EIS. Parking demand consists of both long-term demand (i.e., employee and resident parking) and short-term demand (i.e. visitor parking). Consistent with the methodology outlined in the San Francisco Planning Department's Transportation Impact Analysis Guidelines for Environmental Review (October 2002), long-term parking for non-residential land uses was estimated by determining the number of employees for each land use and applying the average mode split and vehicle occupancy from the trip generation estimates for both external and internal trips. Each employee vehicle trip was assumed to require one space per day. A long-term rate of 1.13 to 1.32 spaces per dwelling unit was used for standard residential units (depending on the mix of studios, one-bedroom, two-bedroom, and three-bedroom units included in each alternative), and a rate of 0.27 spaces per dwelling unit was used for all senior housing, based on information in the San Francisco Planning Department's Transportation Impact Analysis Guidelines for Environmental Review (October 2002) and the Institute of Transportation Engineers' Parking Generation Manual, Second Edition.

Like the methodology used for long-term parking, the methodology for estimating short-term parking demand is also consistent with the methodology outlined in the San Francisco Planning Department's Transportation Impact Analysis Guidelines for Environmental Review (October 2002). Short-term parking was estimated based on the total daily visitor trips and the average



turnover rate. A short-term parking turnover rate of six vehicles per space per day was applied to industrial/warehousing and office uses, a rate of ten vehicles per space per day was used for cultural/educational uses and a rate of three vehicles per space per day was used for conference uses. Table 7 presents the estimated weekday midday and evening and weekend parking demand for all alternatives. Detailed parking demand calculations by alternative are provided in Appendix B.

**Table 7**
**Parking Demand (spaces) by Time of Day and by Alternative**

| Time Period | PHSH Alternative | | | | |
|---|---|---|---|---|---|
| | Requested No Action Alternative | Alternative 1: PTMP Alternative | Alternative 2: Wings Retained/Trust Revised Alternative | Alternative 3: Wings Removed Alternative | Alternative 4: Battery Caulfield Alternative |
| Weekday Midday | 133 | 431 | 286 | 196 | 141 |
| Weekday Evening | 59 | 411 | 318 | 296 | 215 |
| Weekend | 81 | 492 | 327 | 302 | 225 |
| Peak parking demand | 133 | 492 | 327 | 302 | 225 |

Source: Wilbur Smith Associates – January 2006.

The Requested No Action Alternative would generate the lowest overall parking demand, followed by the Battery Caulfield Alternative (Alternative 4), the Wings Removed Alternative (Alternative 3) and by the Wings Retained/Trust Revised Alternative (Alternative 2). The PTMP Alternative (Alternative 1) would generate the highest parking demand.

# APPENDICES

# APPENDIX A

# TRAVEL DEMAND BY ALTERNATIVE

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA REQUESTED NO ACTION ALTERNATIVE ONLY - REVISED JAN 18 2006**
**LAND USE INTENSITY BY TYPE**

| LAND USE TYPE | Industrial Warehouse (k.g.s.f.) | Office (k.g.s.f.) | Retail (k.g.s.f.) | Lodging (rooms) | Conference (k.g.s.f.) | Recreation (k.g.s.f.) | Day Care (k.g.s.f.) | Std. Residential (d.u.) | Infrastructure (k.g.s.f.) | Military (k.g.s.f.) | Sr. Residential (d.u.) | TOTAL (k.g.s.f.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Land Use Intensity** | 15.105 | 14.332 | 0.000 | 0 | 0.000 | 0.000 | 37.708 | 0 | 0.000 | 0.000 | 0 | 67.145 |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA REQUESTED NO ACTION ALTERNATIVE ONLY - REVISED JAN 18 2006**
**PRODUCTIONS AND ATTRACTIONS**

| TIME PERIOD | Total Person Trips | | | Auto Person Trips | | | Transit Person Trips | | | Bike/Ped/Other Person Trips | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Productions | Attractions | P/A Ratio | Productions | Attractions | P/A Ratio | Productions | Attractions | P/A Ratio | Productions | Attractions | P/A Ratio |
| Weekday Daily | 0 | 144 | 0.00 | 0 | 72 | 0.00 | 0 | 29 | 0.00 | 0 | 43 | 0.00 |
| Weekday AM Peak Hour | 0 | 22 | 0.00 | 0 | 11 | 0.00 | 0 | 4 | 0.00 | 0 | 7 | 0.00 |
| Weekday PM Peak Hour | 0 | 24 | 0.00 | 0 | 12 | 0.00 | 0 | 5 | 0.00 | 0 | 7 | 0.00 |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA REQUESTED NO ACTION ALTERNATIVE ONLY - REVISED JAN 18 2006**
**TRIP RATES**

| | Industrial Warehouse | Office | Retail | Lodging | Conference | Recreation | Day Care | Std. Residential | Infrastructure | Military | Sr. Residential | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| % External | 80% | 78% | 70% | 25% | 75% | 50% | 90% | 90% | 20% | 90% | 65% | 94% |
| % Internal | 20% | 22% | 30% | 75% | 25% | 50% | 10% | 10% | 80% | 10% | 35% | 6% |
| Non-linked Trip Factor (Internal Only) | 45% | 60% | 10% | 100% | 60% | 30% | 50% | 100% | 40% | 80% | 100% | 51% |
| Overall Linked Trip Factor | 11% | 9% | 0% | 0% | 0% | 0% | 5% | 0% | 0% | 0% | 0% | 6% |
| Daily Trip Rate | 6.0 | 15.0 | 150.0 | 11.0 | 8.5 | 45.0 | 57.0 | 10.0 | 1.0 | 1.5 | 5.0 | 34.4 |
| *Inbound* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* |
| *Outbound* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* |
| AM Peak Hour Trip Rate | 0.60 | 2.25 | 9.00 | 0.66 | 0.85 | 2.48 | 9.11 | 0.90 | 0.50 | 0.15 | 0.20 | 5.41 |
| *Inbound* | *80%* | *90%* | *50%* | *60%* | *80%* | *60%* | *53%* | *20%* | *90%* | *50%* | *20%* | *57%* |
| *Outbound* | *20%* | *10%* | *50%* | *40%* | *20%* | *40%* | *47%* | *80%* | *10%* | *50%* | *80%* | *43%* |
| PM Peak Hour Trip Rate | 0.90 | 1.88 | 15.75 | 0.88 | 0.85 | 4.50 | 10.25 | 1.05 | 0.50 | 0.15 | 0.25 | 6.01 |
| *Inbound* | *20%* | *15%* | *50%* | *55%* | *30%* | *50%* | *47%* | *70%* | *15%* | *45%* | *70%* | *44%* |
| *Outbound* | *80%* | *85%* | *50%* | *45%* | *70%* | *50%* | *53%* | *30%* | *85%* | *55%* | *30%* | *56%* |
| **External Trips** | | | | | | | | | | | | |
| % Auto | 65% | 65% | 70% | 65% | 65% | 65% | 85% | 65% | 65% | 65% | 65% | 83% |
| % Transit | 18% | 18% | 18% | 18% | 18% | 18% | 10% | 18% | 18% | 18% | 18% | 11% |
| % Bike/Ped/Other | 17% | 17% | 12% | 17% | 17% | 17% | 5% | 17% | 17% | 17% | 17% | 6% |
| Auto Occupancy Rate | 1.08 | 1.03 | 1.37 | 1.26 | 1.26 | 1.50 | 1.50 | 1.23 | 1.08 | 1.50 | 1.23 | 1.45 |
| **Internal Trips** | | | | | | | | | | | | |
| % Auto | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% |
| % Transit | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% |
| % Bike/Ped/Other | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% |
| Auto Occupancy Rate | 1.08 | 1.03 | 1.37 | 1.26 | 1.26 | 1.50 | 1.50 | 1.23 | 1.08 | 1.50 | 1.23 | 1.35 |
| **Total Trips** | | | | | | | | | | | | |
| Auto | 63% | 63% | 0% | 0% | 0% | 0% | 83% | 0% | 0% | 0% | 0% | 81% |
| Transit | 18% | 18% | 0% | 0% | 0% | 0% | 11% | 0% | 0% | 0% | 0% | 11% |
| Bike/Ped/Other | 18% | 19% | 0% | 0% | 0% | 0% | 6% | 0% | 0% | 0% | 0% | 8% |
| Auto Occupancy Rate | 1.08 | 1.03 | 0.00 | 0.00 | 0.00 | 0.00 | 1.50 | 0.00 | 0.00 | 0.00 | 0.00 | 1.44 |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA REQUESTED NO ACTION ALTERNATIVE ONLY - REVISED JAN 18 2006**
**TOTAL TRIPS**

| | Industrial Warehouse | Office | Retail | Lodging | Conference | Recreation | Day Care | Std. Residential | Sr. Residential | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **Weekday Daily** | | | | | | | | | | |
| Auto Person Trips | 52 | 121 | 0 | 0 | 0 | 0 | 1,697 | 0 | 0 | 1,869 |
| *Inbound* | *26* | *60* | *0* | *0* | *0* | *0* | *848* | *0* | *0* | *934* |
| *Outbound* | *26* | *60* | *0* | *0* | *0* | *0* | *848* | *0* | *0* | *934* |
| Transit Person Trips | 15 | 35 | 0 | 0 | 0 | 0 | 215 | 0 | 0 | 265 |
| *Inbound* | *7* | *17* | *0* | *0* | *0* | *0* | *107* | *0* | *0* | *132* |
| *Outbound* | *7* | *17* | *0* | *0* | *0* | *0* | *107* | *0* | *0* | *132* |
| Bike/Ped/Other Person Trips | 15 | 36 | 0 | 0 | 0 | 0 | 129 | 0 | 0 | 179 |
| *Inbound* | *8* | *18* | *0* | *0* | *0* | *0* | *64* | *0* | *0* | *90* |
| *Outbound* | *8* | *18* | *0* | *0* | *0* | *0* | *64* | *0* | *0* | *90* |
| **Total Person Trips** | **82** | **191** | **0** | **0** | **0** | **0** | **2,040** | **0** | **0** | **2,313** |
| ***Inbound*** | ***41*** | ***96*** | ***0*** | ***0*** | ***0*** | ***0*** | ***1,020*** | ***0*** | ***0*** | ***1,156*** |
| ***Outbound*** | ***41*** | ***96*** | ***0*** | ***0*** | ***0*** | ***0*** | ***1,020*** | ***0*** | ***0*** | ***1,156*** |
| Total Vehicle Trips | 48 | 117 | 0 | 0 | 0 | 0 | 1,131 | 0 | 0 | 1,296 |
| *Inbound* | *24* | *59* | *0* | *0* | *0* | *0* | *566* | *0* | *0* | *648* |
| *Outbound* | *24* | *59* | *0* | *0* | *0* | *0* | *566* | *0* | *0* | *648* |
| **Weekday AM Peak Hour** | | | | | | | | | | |
| Auto Person Trips | 5 | 18 | 0 | 0 | 0 | 0 | 271 | 0 | 0 | 295 |
| *Inbound* | *4* | *16* | *0* | *0* | *0* | *0* | *144* | *0* | *0* | *164* |
| *Outbound* | *1* | *2* | *0* | *0* | *0* | *0* | *128* | *0* | *0* | *130* |
| Transit Person Trips | 1 | 5 | 0 | 0 | 0 | 0 | 34 | 0 | 0 | 41 |
| *Inbound* | *1* | *5* | *0* | *0* | *0* | *0* | *18* | *0* | *0* | *24* |
| *Outbound* | *0* | *1* | *0* | *0* | *0* | *0* | *16* | *0* | *0* | *17* |
| Bike/Ped/Other Person Trips | 2 | 5 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 27 |
| *Inbound* | *1* | *5* | *0* | *0* | *0* | *0* | *11* | *0* | *0* | *17* |
| *Outbound* | *0* | *1* | *0* | *0* | *0* | *0* | *10* | *0* | *0* | *11* |
| **Total Person Trips** | **8** | **29** | **0** | **0** | **0** | **0** | **326** | **0** | **0** | **363** |
| ***Inbound*** | ***7*** | ***26*** | ***0*** | ***0*** | ***0*** | ***0*** | ***173*** | ***0*** | ***0*** | ***205*** |
| ***Outbound*** | ***2*** | ***3*** | ***0*** | ***0*** | ***0*** | ***0*** | ***153*** | ***0*** | ***0*** | ***158*** |
| Total Vehicle Trips | 5 | 18 | 0 | 0 | 0 | 0 | 181 | 0 | 0 | 203 |
| *Inbound* | *4* | *16* | *0* | *0* | *0* | *0* | *96* | *0* | *0* | *116* |
| *Outbound* | *1* | *2* | *0* | *0* | *0* | *0* | *85* | *0* | *0* | *88* |
| **Weekday PM Peak Hour** | | | | | | | | | | |
| Auto Person Trips | 8 | 15 | 0 | 0 | 0 | 0 | 305 | 0 | 0 | 328 |
| *Inbound* | *2* | *2* | *0* | *0* | *0* | *0* | *144* | *0* | *0* | *147* |
| *Outbound* | *6* | *13* | *0* | *0* | *0* | *0* | *162* | *0* | *0* | *181* |
| Transit Person Trips | 2 | 4 | 0 | 0 | 0 | 0 | 39 | 0 | 0 | 45 |
| *Inbound* | *0* | *1* | *0* | *0* | *0* | *0* | *18* | *0* | *0* | *19* |
| *Outbound* | *2* | *4* | *0* | *0* | *0* | *0* | *20* | *0* | *0* | *26* |
| Bike/Ped/Other Person Trips | 2 | 4 | 0 | 0 | 0 | 0 | 23 | 0 | 0 | 30 |
| *Inbound* | *0* | *1* | *0* | *0* | *0* | *0* | *11* | *0* | *0* | *12* |
| *Outbound* | *2* | *4* | *0* | *0* | *0* | *0* | *12* | *0* | *0* | *18* |
| **Total Person Trips** | **12** | **24** | **0** | **0** | **0** | **0** | **367** | **0** | **0** | **403** |
| ***Inbound*** | ***2*** | ***4*** | ***0*** | ***0*** | ***0*** | ***0*** | ***173*** | ***0*** | ***0*** | ***179*** |
| ***Outbound*** | ***10*** | ***20*** | ***0*** | ***0*** | ***0*** | ***0*** | ***195*** | ***0*** | ***0*** | ***225*** |
| Total Vehicle Trips | 7 | 15 | 0 | 0 | 0 | 0 | 204 | 0 | 0 | 225 |
| *Inbound* | *1* | *2* | *0* | *0* | *0* | *0* | *96* | *0* | *0* | *99* |
| *Outbound* | *6* | *12* | *0* | *0* | *0* | *0* | *108* | *0* | *0* | *126* |

TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO
PHSH EA REQUESTED NO ACTION ALTERNATIVE ONLY - REVISED JAN 18 2006
EXTERNAL TRIPS

| | Industrial Warehouse | Office | Retail | Lodging | Conference | Recreation | Day Care | Std. Residential | Sr. Residential | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **Weekday Daily** | | | | | | | | | | |
| Auto Person Trips | 47 | 109 | 0 | 0 | 0 | 0 | 1,643 | 0 | 0 | 1,799 |
| *Inbound* | *24* | *54* | *0* | *0* | *0* | *0* | *821* | *0* | *0* | *899* |
| *Outbound* | *24* | *54* | *0* | *0* | *0* | *0* | *821* | *0* | *0* | *899* |
| Transit Person Trips | 13 | 30 | 0 | 0 | 0 | 0 | 193 | 0 | 0 | 237 |
| *Inbound* | *7* | *15* | *0* | *0* | *0* | *0* | *97* | *0* | *0* | *118* |
| *Outbound* | *7* | *15* | *0* | *0* | *0* | *0* | *97* | *0* | *0* | *118* |
| Bike/Ped/Other Person Trips | 12 | 29 | 0 | 0 | 0 | 0 | 97 | 0 | 0 | 137 |
| *Inbound* | *6* | *14* | *0* | *0* | *0* | *0* | *48* | *0* | *0* | *69* |
| *Outbound* | *6* | *14* | *0* | *0* | *0* | *0* | *48* | *0* | *0* | *69* |
| **Total Person Trips** | **73** | **168** | **0** | **0** | **0** | **0** | **1,933** | **0** | **0** | **2,173** |
| ***Inbound*** | ***36*** | ***84*** | ***0*** | ***0*** | ***0*** | ***0*** | ***966*** | ***0*** | ***0*** | ***1,086*** |
| ***Outbound*** | ***36*** | ***84*** | ***0*** | ***0*** | ***0*** | ***0*** | ***966*** | ***0*** | ***0*** | ***1,086*** |
| Total Vehicle Trips | 44 | 106 | 0 | 0 | 0 | 0 | 1,095 | 0 | 0 | 1,245 |
| *Inbound* | *22* | *53* | *0* | *0* | *0* | *0* | *548* | *0* | *0* | *622* |
| *Outbound* | *22* | *53* | *0* | *0* | *0* | *0* | *548* | *0* | *0* | *622* |
| **Weekday AM Peak Hour** | | | | | | | | | | |
| Auto Person Trips | 5 | 16 | 0 | 0 | 0 | 0 | 263 | 0 | 0 | 284 |
| *Inbound* | *4* | *15* | *0* | *0* | *0* | *0* | *139* | *0* | *0* | *158* |
| *Outbound* | *1* | *2* | *0* | *0* | *0* | *0* | *124* | *0* | *0* | *126* |
| Transit Person Trips | 1 | 5 | 0 | 0 | 0 | 0 | 31 | 0 | 0 | 37 |
| *Inbound* | *1* | *4* | *0* | *0* | *0* | *0* | *16* | *0* | *0* | *22* |
| *Outbound* | *0* | *0* | *0* | *0* | *0* | *0* | *15* | *0* | *0* | *15* |
| Bike/Ped/Other Person Trips | 1 | 4 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 21 |
| *Inbound* | *1* | *4* | *0* | *0* | *0* | *0* | *8* | *0* | *0* | *13* |
| *Outbound* | *0* | *0* | *0* | *0* | *0* | *0* | *7* | *0* | *0* | *8* |
| **Total Person Trips** | **7** | **25** | **0** | **0** | **0** | **0** | **309** | **0** | **0** | **342** |
| ***Inbound*** | ***6*** | ***23*** | ***0*** | ***0*** | ***0*** | ***0*** | ***164*** | ***0*** | ***0*** | ***192*** |
| ***Outbound*** | ***1*** | ***3*** | ***0*** | ***0*** | ***0*** | ***0*** | ***145*** | ***0*** | ***0*** | ***149*** |
| Total Vehicle Trips | 4 | 16 | 0 | 0 | 0 | 0 | 175 | 0 | 0 | 195 |
| *Inbound* | *3* | *14* | *0* | *0* | *0* | *0* | *93* | *0* | *0* | *111* |
| *Outbound* | *1* | *2* | *0* | *0* | *0* | *0* | *82* | *0* | *0* | *85* |
| **Weekday PM Peak Hour** | | | | | | | | | | |
| Auto Person Trips | 7 | 14 | 0 | 0 | 0 | 0 | 296 | 0 | 0 | 316 |
| *Inbound* | *1* | *2* | *0* | *0* | *0* | *0* | *139* | *0* | *0* | *142* |
| *Outbound* | *6* | *12* | *0* | *0* | *0* | *0* | *157* | *0* | *0* | *174* |
| Transit Person Trips | 2 | 4 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 41 |
| *Inbound* | *0* | *1* | *0* | *0* | *0* | *0* | *16* | *0* | *0* | *17* |
| *Outbound* | *2* | *3* | *0* | *0* | *0* | *0* | *18* | *0* | *0* | *23* |
| Bike/Ped/Other Person Trips | 2 | 4 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 23 |
| *Inbound* | *0* | *1* | *0* | *0* | *0* | *0* | *8* | *0* | *0* | *9* |
| *Outbound* | *1* | *3* | *0* | *0* | *0* | *0* | *9* | *0* | *0* | *14* |
| **Total Person Trips** | **11** | **21** | **0** | **0** | **0** | **0** | **348** | **0** | **0** | **380** |
| ***Inbound*** | ***2*** | ***3*** | ***0*** | ***0*** | ***0*** | ***0*** | ***164*** | ***0*** | ***0*** | ***169*** |
| ***Outbound*** | ***9*** | ***18*** | ***0*** | ***0*** | ***0*** | ***0*** | ***184*** | ***0*** | ***0*** | ***211*** |
| Total Vehicle Trips | 7 | 13 | 0 | 0 | 0 | 0 | 197 | 0 | 0 | 217 |
| *Inbound* | *1* | *2* | *0* | *0* | *0* | *0* | *93* | *0* | *0* | *96* |
| *Outbound* | *5* | *11* | *0* | *0* | *0* | *0* | *104* | *0* | *0* | *121* |

TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO
PHSH EA ALTERNATIVE 1 ONLY (Revised Trip. Gen. with two types of Cult/Educ.)
LAND USE INTENSITY BY TYPE

| LAND USE TYPE | Industrial Warehouse (k.g.s.f.) | Office (k.g.s.f.) | Retail (k.g.s.f.) | Lodging (rooms) | Conference (k.g.s.f.) | Recreation (k.g.s.f.) | Cultural Education (k.g.s.f.) | Std. Residential (d.u.) | Infrastructure (k.g.s.f.) | Military (k.g.s.f.) | Day Care (k.g.s.f.) | TOTAL (k.g.s.f.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Land Use Intensity** | 1.480 | 9.583 | 0.000 | 0 | 10.000 | 0.000 | 153.214 | 185 | 0.100 | 0.000 | 37.708 | 400.000 |

Includes 150 regular units and 52 dorm units
Dorm units are factored by 2/3 to convert to regular units

TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO
PHSH EA ALTERNATIVE 1 ONLY (Revised Trip. Gen. with two types of Cult/Educ.)
PRODUCTIONS AND ATTRACTIONS

| TIME PERIOD | Total Person Trips | | | Auto Person Trips | | | Transit Person Trips | | | Bike/Ped/Other Person Trips | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Productions | Attractions | P/A Ratio | Productions | Attractions | P/A Ratio | Productions | Attractions | P/A Ratio | Productions | Attractions | P/A Ratio |
| Weekday Daily | 831 | 753 | 1.10 | 416 | 376 | 1.10 | 166 | 151 | 1.10 | 249 | 226 | 1.10 |
| Weekday AM Peak Hour | 75 | 52 | 1.44 | 37 | 26 | 1.44 | 15 | 10 | 1.44 | 22 | 16 | 1.44 |
| Weekday PM Peak Hour | 120 | 103 | 1.17 | 60 | 51 | 1.17 | 24 | 21 | 1.17 | 36 | 31 | 1.17 |

TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO
PHSH EA ALTERNATIVE 1 ONLY (Revised Trip. Gen. with two types of Cult/Educ.)
TRIP RATES

| | Industrial Warehouse | Office | Retail | Lodging | Conference | Recreation | Cultural Education | Std. Residential | Infrastructure | Military | Day Care | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| % External | 80% | 78% | 70% | 25% | 75% | 50% | 80% | 55% | 20% | 90% | 90% | 87% |
| % Internal | 20% | 22% | 30% | 75% | 25% | 50% | 20% | 45% | 80% | 10% | 10% | 13% |
| Non-linked Trip Factor (Internal Only) | 45% | 60% | 10% | 100% | 60% | 30% | 50% | 100% | 40% | 80% | 50% | 68% |
| Overall Linked Trip Factor | 11% | 9% | 0% | 0% | 10% | 0% | 10% | 0% | 48% | 0% | 5% | 7% |
| Daily Trip Rate | 6.0 | 15.0 | 150.0 | 11.0 | 8.5 | 45.0 | 40.0 | 10.0 | 1.0 | 1.5 | 57.0 | 23.0 |
| *Inbound* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* |
| *Outbound* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* |
| AM Peak Hour Trip Rate | 0.60 | 2.25 | 9.00 | 0.66 | 0.85 | 2.48 | 2.00 | 0.90 | 0.50 | 0.15 | 9.11 | 1.90 |
| *Inbound* | *80%* | *90%* | *50%* | *60%* | *80%* | *60%* | *80%* | *20%* | *90%* | *50%* | *53%* | *58%* |
| *Outbound* | *20%* | *10%* | *50%* | *40%* | *20%* | *40%* | *20%* | *80%* | *10%* | *50%* | *47%* | *42%* |
| PM Peak Hour Trip Rate | 0.90 | 1.88 | 15.75 | 0.88 | 0.85 | 4.50 | 5.20 | 1.45 | 0.50 | 0.15 | 10.25 | 3.29 |
| *Inbound* | *20%* | *15%* | *50%* | *55%* | *30%* | *50%* | *50%* | *70%* | *15%* | *45%* | *47%* | *52%* |
| *Outbound* | *80%* | *85%* | *50%* | *45%* | *70%* | *50%* | *50%* | *30%* | *85%* | *55%* | *53%* | *48%* |
| **External Trips** | | | | | | | | | | | | |
| % Auto | 65% | 65% | 70% | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 85% | 70% |
| % Transit | 18% | 18% | 18% | 18% | 18% | 18% | 18% | 18% | 18% | 18% | 10% | 16% |
| % Bike/Ped/Other | 17% | 17% | 12% | 17% | 17% | 17% | 17% | 17% | 17% | 17% | 5% | 14% |
| Auto Occupancy Rate | 1.08 | 1.03 | 1.37 | 1.26 | 1.26 | 1.50 | 1.50 | 1.23 | 1.08 | 1.50 | 1.50 | 1.45 |
| **Internal Trips** | | | | | | | | | | | | |
| % Auto | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% |
| % Transit | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% |
| % Bike/Ped/Other | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% |
| Auto Occupancy Rate | 1.08 | 1.03 | 1.37 | 1.26 | 1.26 | 1.50 | 1.50 | 1.23 | 1.08 | 1.50 | 1.50 | 1.34 |
| **Total Trips** | | | | | | | | | | | | |
| Auto | 63% | 63% | 0% | 0% | 63% | 0% | 63% | 61% | 55% | 0% | 83% | 67% |
| Transit | 18% | 18% | 0% | 0% | 18% | 0% | 18% | 19% | 19% | 0% | 11% | 17% |
| Bike/Ped/Other | 18% | 19% | 0% | 0% | 19% | 0% | 18% | 21% | 26% | 0% | 6% | 16% |
| Auto Occupancy Rate | 1.08 | 1.03 | 0.00 | 0.00 | 1.26 | 0.00 | 1.50 | 1.23 | 1.08 | 0.00 | 1.50 | 1.44 |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 1 ONLY (Revised Trip. Gen. with two types of Cult/Educ.)**
**TOTAL TRIPS**

| | Industrial Warehouse | Office | Retail | Lodging | Conference | Recreation | Cultural Education | Std. Residential | Day Care | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **Weekday Daily** | | | | | | | | | | |
| Auto Person Trips | 5 | 81 | 0 | 0 | 47 | 0 | 3,493 | 868 | 1,697 | 6,190 |
| *Inbound* | *3* | *40* | *0* | *0* | *23* | *0* | *1,747* | *434* | *848* | *3,095* |
| *Outbound* | *3* | *40* | *0* | *0* | *23* | *0* | *1,747* | *434* | *848* | *3,095* |
| Transit Person Trips | 1 | 23 | 0 | 0 | 14 | 0 | 1,005 | 266 | 215 | 1,524 |
| *Inbound* | *1* | *12* | *0* | *0* | *7* | *0* | *503* | *133* | *107* | *762* |
| *Outbound* | *1* | *12* | *0* | *0* | *7* | *0* | *503* | *133* | *107* | *762* |
| Bike/Ped/Other Person Trips | 1 | 24 | 0 | 0 | 14 | 0 | 1,017 | 297 | 129 | 1,483 |
| *Inbound* | *1* | *12* | *0* | *0* | *7* | *0* | *509* | *149* | *64* | *741* |
| *Outbound* | *1* | *12* | *0* | *0* | *7* | *0* | *509* | *149* | *64* | *741* |
| **Total Person Trips** | **8** | **128** | **0** | **0** | **74** | **0** | **5,516** | **1,431** | **2,040** | **9,197** |
| ***Inbound*** | ***4*** | ***64*** | ***0*** | ***0*** | ***37*** | ***0*** | ***2,758*** | ***716*** | ***1,020*** | ***4,599*** |
| ***Outbound*** | ***4*** | ***64*** | ***0*** | ***0*** | ***37*** | ***0*** | ***2,758*** | ***716*** | ***1,020*** | ***4,599*** |
| Total Vehicle Trips | 5 | 78 | 0 | 0 | 37 | 0 | 2,329 | 706 | 1,131 | 4,286 |
| *Inbound* | *2* | *39* | *0* | *0* | *19* | *0* | *1,164* | *353* | *566* | *2,143* |
| *Outbound* | *2* | *39* | *0* | *0* | *19* | *0* | *1,164* | *353* | *566* | *2,143* |
| **Weekday AM Peak Hour** | | | | | | | | | | |
| Auto Person Trips | 1 | 12 | 0 | 0 | 5 | 0 | 175 | 78 | 271 | 542 |
| *Inbound* | *0* | *11* | *0* | *0* | *4* | *0* | *140* | *16* | *144* | *314* |
| *Outbound* | *0* | *1* | *0* | *0* | *1* | *0* | *35* | *62* | *128* | *227* |
| Transit Person Trips | 0 | 4 | 0 | 0 | 1 | 0 | 50 | 24 | 34 | 114 |
| *Inbound* | *0* | *3* | *0* | *0* | *1* | *0* | *40* | *5* | *18* | *68* |
| *Outbound* | *0* | *0* | *0* | *0* | *0* | *0* | *10* | *19* | *16* | *46* |
| Bike/Ped/Other Person Trips | 0 | 4 | 0 | 0 | 1 | 0 | 51 | 27 | 21 | 103 |
| *Inbound* | *0* | *3* | *0* | *0* | *1* | *0* | *41* | *5* | *11* | *61* |
| *Outbound* | *0* | *0* | *0* | *0* | *0* | *0* | *10* | *21* | *10* | *42* |
| **Total Person Trips** | **1** | **19** | **0** | **0** | **7** | **0** | **276** | **129** | **326** | **758** |
| ***Inbound*** | ***1*** | ***17*** | ***0*** | ***0*** | ***6*** | ***0*** | ***221*** | ***26*** | ***173*** | ***443*** |
| ***Outbound*** | ***0*** | ***2*** | ***0*** | ***0*** | ***1*** | ***0*** | ***55*** | ***103*** | ***153*** | ***315*** |
| Total Vehicle Trips | 0 | 12 | 0 | 0 | 4 | 0 | 116 | 64 | 181 | 377 |
| *Inbound* | *0* | *11* | *0* | *0* | *3* | *0* | *93* | *13* | *96* | *216* |
| *Outbound* | *0* | *1* | *0* | *0* | *1* | *0* | *23* | *51* | *85* | *161* |
| **Weekday PM Peak Hour** | | | | | | | | | | |
| Auto Person Trips | 1 | 10 | 0 | 0 | 5 | 0 | 454 | 126 | 305 | 901 |
| *Inbound* | *0* | *2* | *0* | *0* | *1* | *0* | *227* | *88* | *144* | *462* |
| *Outbound* | *1* | *9* | *0* | *0* | *3* | *0* | *227* | *38* | *162* | *439* |
| Transit Person Trips | 0 | 3 | 0 | 0 | 1 | 0 | 131 | 39 | 39 | 212 |
| *Inbound* | *0* | *0* | *0* | *0* | *0* | *0* | *65* | *27* | *18* | *111* |
| *Outbound* | *0* | *2* | *0* | *0* | *1* | *0* | *65* | *12* | *20* | *101* |
| Bike/Ped/Other Person Trips | 0 | 3 | 0 | 0 | 1 | 0 | 132 | 43 | 23 | 203 |
| *Inbound* | *0* | *0* | *0* | *0* | *0* | *0* | *66* | *30* | *11* | *108* |
| *Outbound* | *0* | *3* | *0* | *0* | *1* | *0* | *66* | *13* | *12* | *95* |
| **Total Person Trips** | **1** | **16** | **0** | **0** | **7** | **0** | **717** | **208** | **367** | **1,316** |
| ***Inbound*** | ***0*** | ***2*** | ***0*** | ***0*** | ***2*** | ***0*** | ***359*** | ***145*** | ***173*** | ***681*** |
| ***Outbound*** | ***1*** | ***14*** | ***0*** | ***0*** | ***5*** | ***0*** | ***359*** | ***62*** | ***195*** | ***635*** |
| Total Vehicle Trips | 1 | 10 | 0 | 0 | 4 | 0 | 303 | 102 | 204 | 623 |
| *Inbound* | *0* | *1* | *0* | *0* | *1* | *0* | *151* | *72* | *96* | *321* |
| *Outbound* | *1* | *8* | *0* | *0* | *3* | *0* | *151* | *31* | *108* | *301* |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 1 ONLY (Revised Trip. Gen. with two types of Cult/Educ.)**
**EXTERNAL TRIPS**

| | Industrial Warehouse | Office | Retail | Lodging | Conference | Recreation | Cultural Education | Std. Residential | Day Care | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **Weekday Daily** | | | | | | | | | | |
| Auto Person Trips | 5 | 73 | 0 | 0 | 41 | 0 | 3,187 | 660 | 1,643 | 5,609 |
| *Inbound* | *2* | *36* | *0* | *0* | *21* | *0* | *1,593* | *330* | *821* | *2,804* |
| *Outbound* | *2* | *36* | *0* | *0* | *21* | *0* | *1,593* | *330* | *821* | *2,804* |
| Transit Person Trips | 1 | 20 | 0 | 0 | 11 | 0 | 883 | 183 | 193 | 1,292 |
| *Inbound* | *1* | *10* | *0* | *0* | *6* | *0* | *441* | *91* | *97* | *646* |
| *Outbound* | *1* | *10* | *0* | *0* | *6* | *0* | *441* | *91* | *97* | *646* |
| Bike/Ped/Other Person Trips | 1 | 19 | 0 | 0 | 11 | 0 | 833 | 173 | 97 | 1,134 |
| *Inbound* | *1* | *10* | *0* | *0* | *5* | *0* | *417* | *86* | *48* | *567* |
| *Outbound* | *1* | *10* | *0* | *0* | *5* | *0* | *417* | *86* | *48* | *567* |
| **Total Person Trips** | **7** | **112** | **0** | **0** | **64** | **0** | **4,903** | **1,016** | **1,933** | **8,034** |
| ***Inbound*** | ***4*** | ***56*** | ***0*** | ***0*** | ***32*** | ***0*** | ***2,451*** | ***508*** | ***966*** | ***4,017*** |
| ***Outbound*** | ***4*** | ***56*** | ***0*** | ***0*** | ***32*** | ***0*** | ***2,451*** | ***508*** | ***966*** | ***4,017*** |
| Total Vehicle Trips | 4 | 71 | 0 | 0 | 33 | 0 | 2,125 | 537 | 1,095 | 3,864 |
| *Inbound* | *2* | *35* | *0* | *0* | *16* | *0* | *1,062* | *268* | *548* | *1,932* |
| *Outbound* | *2* | *35* | *0* | *0* | *16* | *0* | *1,062* | *268* | *548* | *1,932* |
| **Weekday AM Peak Hour** | | | | | | | | | | |
| Auto Person Trips | 0 | 11 | 0 | 0 | 4 | 0 | 159 | 59 | 263 | 497 |
| *Inbound* | *0* | *10* | *0* | *0* | *3* | *0* | *127* | *12* | *139* | *292* |
| *Outbound* | *0* | *1* | *0* | *0* | *1* | *0* | *32* | *48* | *124* | *205* |
| Transit Person Trips | 0 | 3 | 0 | 0 | 1 | 0 | 44 | 16 | 31 | 96 |
| *Inbound* | *0* | *3* | *0* | *0* | *1* | *0* | *35* | *3* | *16* | *59* |
| *Outbound* | *0* | *0* | *0* | *0* | *0* | *0* | *9* | *13* | *15* | *37* |
| Bike/Ped/Other Person Trips | 0 | 3 | 0 | 0 | 1 | 0 | 42 | 16 | 15 | 77 |
| *Inbound* | *0* | *3* | *0* | *0* | *1* | *0* | *33* | *3* | *8* | *48* |
| *Outbound* | *0* | *0* | *0* | *0* | *0* | *0* | *8* | *12* | *7* | *29* |
| **Total Person Trips** | **1** | **17** | **0** | **0** | **6** | **0** | **245** | **91** | **309** | **670** |
| ***Inbound*** | ***1*** | ***15*** | ***0*** | ***0*** | ***5*** | ***0*** | ***196*** | ***18*** | ***164*** | ***399*** |
| ***Outbound*** | ***0*** | ***2*** | ***0*** | ***0*** | ***1*** | ***0*** | ***49*** | ***73*** | ***145*** | ***271*** |
| Total Vehicle Trips | 0 | 11 | 0 | 0 | 3 | 0 | 106 | 48 | 175 | 344 |
| *Inbound* | *0* | *10* | *0* | *0* | *3* | *0* | *85* | *10* | *93* | *200* |
| *Outbound* | *0* | *1* | *0* | *0* | *1* | *0* | *21* | *39* | *82* | *144* |
| **Weekday PM Peak Hour** | | | | | | | | | | |
| Auto Person Trips | 1 | 9 | 0 | 0 | 4 | 0 | 414 | 96 | 296 | 820 |
| *Inbound* | *0* | *1* | *0* | *0* | *1* | *0* | *207* | *67* | *139* | *416* |
| *Outbound* | *1* | *8* | *0* | *0* | *3* | *0* | *207* | *29* | *157* | *404* |
| Transit Person Trips | 0 | 3 | 0 | 0 | 1 | 0 | 115 | 27 | 35 | 180 |
| *Inbound* | *0* | *0* | *0* | *0* | *0* | *0* | *57* | *19* | *16* | *93* |
| *Outbound* | *0* | *2* | *0* | *0* | *1* | *0* | *57* | *8* | *18* | *87* |
| Bike/Ped/Other Person Trips | 0 | 2 | 0 | 0 | 1 | 0 | 108 | 25 | 17 | 154 |
| *Inbound* | *0* | *0* | *0* | *0* | *0* | *0* | *54* | *18* | *8* | *81* |
| *Outbound* | *0* | *2* | *0* | *0* | *1* | *0* | *54* | *8* | *9* | *74* |
| **Total Person Trips** | **1** | **14** | **0** | **0** | **6** | **0** | **637** | **147** | **348** | **1,154** |
| ***Inbound*** | ***0*** | ***2*** | ***0*** | ***0*** | ***2*** | ***0*** | ***319*** | ***103*** | ***164*** | ***590*** |
| ***Outbound*** | ***1*** | ***12*** | ***0*** | ***0*** | ***4*** | ***0*** | ***319*** | ***44*** | ***184*** | ***564*** |
| Total Vehicle Trips | 1 | 9 | 0 | 0 | 3 | 0 | 276 | 78 | 197 | 564 |
| *Inbound* | *0* | *1* | *0* | *0* | *1* | *0* | *138* | *54* | *93* | *288* |
| *Outbound* | *1* | *8* | *0* | *0* | *2* | *0* | *138* | *23* | *104* | *276* |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 2 ONLY - REVISED JAN 17 2006**
**LAND USE INTENSITY BY TYPE**

| LAND USE TYPE | Industrial Warehouse (k.g.s.f.) | Office (k.g.s.f.) | Cultural Education (k.g.s.f.) | Recreation (k.g.s.f.) | Day Care (k.g.s.f.) | Std. Residential (d.u.) | Infrastructure (k.g.s.f.) | Military (k.g.s.f.) | Sr. Residential (d.u.) | TOTAL (k.g.s.f.) |
|---|---|---|---|---|---|---|---|---|---|---|
| Land Use Intensity | 15.000 | 45.050 | 1.700 | 0.000 | 4.750 | 230 | 0.000 | 0.000 | 0 | 400.000 |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 2 ONLY - REVISED JAN 17 2006**
**PRODUCTIONS AND ATTRACTIONS**

| TIME PERIOD | Total Person Trips | | | | Transit Person Trips | | | Bike/Ped/Other Person Trips | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Productions | Attractions | Attractions | P/A Ratio | Productions | Attractions | P/A Ratio | Productions | Attractions | P/A Ratio |
| Weekday Daily | 230 | 118 | 59 | 1.96 | 46 | 24 | 1.96 | 69 | 35 | 1.96 |
| Weekday AM Peak Hour | 21 | 17 | 8 | 1.24 | 4 | 3 | 1.24 | 6 | 5 | 1.24 |
| Weekday PM Peak Hour | 24 | 16 | 8 | 1.54 | 5 | 3 | 1.54 | 7 | 5 | 1.54 |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 2 ONLY - REVISED JAN 17 2006**
**TRIP RATES**

| | Industrial Warehouse | Office | Cultural Education | Recreation | Day Care | Std. Residential | Infrastructure | Military | Sr. Residential | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| % External | 80% | 78% | 80% | 50% | 90% | 90% | 20% | 90% | 65% | 93% |
| % Internal | 20% | 22% | 20% | 50% | 10% | 10% | 80% | 10% | 35% | 7% |
| Non-linked Trip Factor (Internal Only) | 45% | 60% | 50% | 30% | 50% | 100% | 40% | 80% | 100% | 79% |
| Overall Linked Trip Factor | 11% | 9% | 10% | 0% | 5% | 0% | 0% | 0% | 0% | 3% |
| Daily Trip Rate | 6.0 | 15.0 | 40.0 | 45.0 | 57.0 | 10.0 | 1.0 | 1.5 | 5.0 | 8.0 |
| *Inbound* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* |
| *Outbound* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* |
| AM Peak Hour Trip Rate | 0.60 | 2.25 | 2.00 | 2.48 | 9.11 | 0.90 | 0.50 | 0.15 | 0.20 | 0.85 |
| *Inbound* | *80%* | *90%* | *80%* | *60%* | *53%* | *20%* | *90%* | *50%* | *20%* | *45%* |
| *Outbound* | *20%* | *10%* | *20%* | *40%* | *47%* | *80%* | *10%* | *50%* | *80%* | *55%* |
| PM Peak Hour Trip Rate | 0.90 | 1.88 | 5.20 | 4.50 | 10.25 | 1.05 | 0.50 | 0.15 | 0.25 | 0.93 |
| *Inbound* | *20%* | *15%* | *50%* | *50%* | *47%* | *70%* | *15%* | *45%* | *70%* | *54%* |
| *Outbound* | *80%* | *85%* | *50%* | *50%* | *53%* | *30%* | *85%* | *55%* | *30%* | *46%* |
| **External Trips** | | | | | | | | | | |
| % Auto | 65% | 65% | 65% | 65% | 85% | 65% | 65% | 65% | 65% | 67% |
| % Transit | 18% | 18% | 18% | 18% | 10% | 18% | 18% | 18% | 18% | 17% |
| % Bike/Ped/Other | 17% | 17% | 17% | 17% | 5% | 17% | 17% | 17% | 17% | 16% |
| Auto Occupancy Rate | 1.08 | 1.03 | 1.50 | 1.50 | 1.50 | 1.23 | 1.08 | 1.50 | 1.23 | 1.21 |
| **Internal Trips** | | | | | | | | | | |
| % Auto | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% |
| % Transit | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% |
| % Bike/Ped/Other | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% |
| Auto Occupancy Rate | 1.08 | 1.03 | 1.50 | 1.50 | 1.50 | 1.23 | 1.08 | 1.50 | 1.23 | 1.18 |
| **Total Trips** | | | | | | | | | | |
| Auto | 63% | 63% | 63% | 0% | 83% | 64% | 0% | 0% | 0% | 65% |
| Transit | 18% | 18% | 18% | 0% | 11% | 18% | 0% | 0% | 0% | 18% |
| Bike/Ped/Other | 18% | 19% | 18% | 0% | 6% | 18% | 0% | 0% | 0% | 17% |
| Auto Occupancy Rate | 1.08 | 1.03 | 1.50 | 0.00 | 1.50 | 1.23 | 0.00 | 0.00 | 0.00 | 1.21 |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 2 ONLY - REVISED JAN 17 2006**
**TOTAL TRIPS**

| | Industrial Warehouse | Office | Cultural Education | Recreation | Day Care | Std. Residential | Sr. Residential | Total |
|---|---|---|---|---|---|---|---|---|
| **Weekday Daily** | | | | | | | | |
| Auto Person Trips | 51 | 380 | 39 | 0 | 214 | 1,403 | 0 | 2,087 |
| *Inbound* | *26* | *190* | *19* | *0* | *107* | *702* | *0* | *1,043* |
| *Outbound* | *26* | *190* | *19* | *0* | *107* | *702* | *0* | *1,043* |
| Transit Person Trips | 15 | 110 | 11 | 0 | 27 | 396 | 0 | 558 |
| *Inbound* | *7* | *55* | *6* | *0* | *14* | *198* | *0* | *279* |
| *Outbound* | *7* | *55* | *6* | *0* | *14* | *198* | *0* | *279* |
| Bike/Ped/Other Person Trips | 15 | 112 | 11 | 0 | 16 | 386 | 0 | 541 |
| *Inbound* | *7* | *56* | *6* | *0* | *8* | *193* | *0* | *270* |
| *Outbound* | *7* | *56* | *6* | *0* | *8* | *193* | *0* | *270* |
| **Total Person Trips** | **81** | **601** | **61** | **0** | **257** | **2,185** | **0** | **3,186** |
| ***Inbound*** | ***41*** | ***301*** | ***31*** | ***0*** | ***128*** | ***1,093*** | ***0*** | ***1,593*** |
| ***Outbound*** | ***41*** | ***301*** | ***31*** | ***0*** | ***128*** | ***1,093*** | ***0*** | ***1,593*** |
| Total Vehicle Trips | 48 | 369 | 26 | 0 | 142 | 1,141 | 0 | 1,725 |
| *Inbound* | *24* | *184* | *13* | *0* | *71* | *570* | *0* | *863* |
| *Outbound* | *24* | *184* | *13* | *0* | *71* | *570* | *0* | *863* |
| **Weekday AM Peak Hour** | | | | | | | | |
| Auto Person Trips | 5 | 57 | 2 | 0 | 34 | 126 | 0 | 224 |
| *Inbound* | *4* | *51* | *2* | *0* | *18* | *25* | *0* | *100* |
| *Outbound* | *1* | *6* | *0* | *0* | *16* | *101* | *0* | *124* |
| Transit Person Trips | 1 | 16 | 1 | 0 | 4 | 36 | 0 | 58 |
| *Inbound* | *1* | *15* | *0* | *0* | *2* | *7* | *0* | *26* |
| *Outbound* | *0* | *2* | *0* | *0* | *2* | *28* | *0* | *33* |
| Bike/Ped/Other Person Trips | 1 | 17 | 1 | 0 | 3 | 35 | 0 | 56 |
| *Inbound* | *1* | *15* | *0* | *0* | *1* | *7* | *0* | *25* |
| *Outbound* | *0* | *2* | *0* | *0* | *1* | *28* | *0* | *31* |
| **Total Person Trips** | **8** | **90** | **3** | **0** | **41** | **197** | **0** | **339** |
| ***Inbound*** | ***6*** | ***81*** | ***2*** | ***0*** | ***22*** | ***39*** | ***0*** | ***151*** |
| ***Outbound*** | ***2*** | ***9*** | ***1*** | ***0*** | ***19*** | ***157*** | ***0*** | ***188*** |
| Total Vehicle Trips | 5 | 55 | 1 | 0 | 23 | 103 | 0 | 187 |
| *Inbound* | *4* | *50* | *1* | *0* | *12* | *21* | *0* | *87* |
| *Outbound* | *1* | *6* | *0* | *0* | *11* | *82* | *0* | *100* |
| **Weekday PM Peak Hour** | | | | | | | | |
| Auto Person Trips | 8 | 47 | 5 | 0 | 38 | 147 | 0 | 246 |
| *Inbound* | *2* | *7* | *3* | *0* | *18* | *103* | *0* | *132* |
| *Outbound* | *6* | *40* | *3* | *0* | *20* | *44* | *0* | *114* |
| Transit Person Trips | 2 | 14 | 1 | 0 | 5 | 42 | 0 | 64 |
| *Inbound* | *0* | *2* | *1* | *0* | *2* | *29* | *0* | *35* |
| *Outbound* | *2* | *12* | *1* | *0* | *3* | *12* | *0* | *29* |
| Bike/Ped/Other Person Trips | 2 | 14 | 1 | 0 | 3 | 41 | 0 | 61 |
| *Inbound* | *0* | *2* | *1* | *0* | *1* | *28* | *0* | *33* |
| *Outbound* | *2* | *12* | *1* | *0* | *2* | *12* | *0* | *28* |
| **Total Person Trips** | **12** | **75** | **8** | **0** | **46** | **229** | **0** | **371** |
| ***Inbound*** | ***2*** | ***11*** | ***4*** | ***0*** | ***22*** | ***161*** | ***0*** | ***200*** |
| ***Outbound*** | ***10*** | ***64*** | ***4*** | ***0*** | ***25*** | ***69*** | ***0*** | ***171*** |
| Total Vehicle Trips | 7 | 46 | 3 | 0 | 26 | 120 | 0 | 202 |
| *Inbound* | *1* | *7* | *2* | *0* | *12* | *84* | *0* | *106* |
| *Outbound* | *6* | *39* | *2* | *0* | *14* | *36* | *0* | *96* |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 2 ONLY - REVISED JAN 17 2006**
**EXTERNAL TRIPS**

| | Industrial Warehouse | Office | Cultural Education | Recreation | Day Care | Std. Residential | Sr. Residential | Total |
|---|---|---|---|---|---|---|---|---|
| **Weekday Daily** | | | | | | | | |
| Auto Person Trips | 47 | 343 | 35 | 0 | 207 | 1,346 | 0 | 1,977 |
| *Inbound* | *23* | *171* | *18* | *0* | *103* | *673* | *0* | *989* |
| *Outbound* | *23* | *171* | *18* | *0* | *103* | *673* | *0* | *989* |
| Transit Person Trips | 13 | 95 | 10 | 0 | 24 | 373 | 0 | 515 |
| *Inbound* | *6* | *47* | *5* | *0* | *12* | *186* | *0* | *257* |
| *Outbound* | *6* | *47* | *5* | *0* | *12* | *186* | *0* | *257* |
| Bike/Ped/Other Person Trips | 12 | 90 | 9 | 0 | 12 | 352 | 0 | 475 |
| *Inbound* | *6* | *45* | *5* | *0* | *6* | *176* | *0* | *238* |
| *Outbound* | *6* | *45* | *5* | *0* | *6* | *176* | *0* | *238* |
| **Total Person Trips** | **72** | **527** | **54** | **0** | **243** | **2,070** | **0** | **2,967** |
| ***Inbound*** | ***36*** | ***264*** | ***27*** | ***0*** | ***122*** | ***1,035*** | ***0*** | ***1,483*** |
| ***Outbound*** | ***36*** | ***264*** | ***27*** | ***0*** | ***122*** | ***1,035*** | ***0*** | ***1,483*** |
| Total Vehicle Trips | 43 | 333 | 24 | 0 | 138 | 1,094 | 0 | 1,631 |
| *Inbound* | *22* | *166* | *12* | *0* | *69* | *547* | *0* | *816* |
| *Outbound* | *22* | *166* | *12* | *0* | *69* | *547* | *0* | *816* |
| **Weekday AM Peak Hour** | | | | | | | | |
| Auto Person Trips | 5 | 51 | 2 | 0 | 33 | 121 | 0 | 212 |
| *Inbound* | *4* | *46* | *1* | *0* | *18* | *24* | *0* | *93* |
| *Outbound* | *1* | *5* | *0* | *0* | *16* | *97* | *0* | *119* |
| Transit Person Trips | 1 | 14 | 0 | 0 | 4 | 34 | 0 | 53 |
| *Inbound* | *1* | *13* | *0* | *0* | *2* | *7* | *0* | *23* |
| *Outbound* | *0* | *1* | *0* | *0* | *2* | *27* | *0* | *30* |
| Bike/Ped/Other Person Trips | 1 | 13 | 0 | 0 | 2 | 32 | 0 | 49 |
| *Inbound* | *1* | *12* | *0* | *0* | *1* | *6* | *0* | *21* |
| *Outbound* | *0* | *1* | *0* | *0* | *1* | *25* | *0* | *28* |
| **Total Person Trips** | **7** | **79** | **3** | **0** | **39** | **186** | **0** | **314** |
| ***Inbound*** | ***6*** | ***71*** | ***2*** | ***0*** | ***21*** | ***37*** | ***0*** | ***137*** |
| ***Outbound*** | ***1*** | ***8*** | ***1*** | ***0*** | ***18*** | ***149*** | ***0*** | ***177*** |
| Total Vehicle Trips | 4 | 50 | 1 | 0 | 22 | 98 | 0 | 176 |
| *Inbound* | *3* | *45* | *1* | *0* | *12* | *20* | *0* | *81* |
| *Outbound* | *1* | *5* | *0* | *0* | *10* | *79* | *0* | *95* |
| **Weekday PM Peak Hour** | | | | | | | | |
| Auto Person Trips | 7 | 43 | 5 | 0 | 37 | 141 | 0 | 233 |
| *Inbound* | *1* | *6* | *2* | *0* | *18* | *99* | *0* | *127* |
| *Outbound* | *6* | *36* | *2* | *0* | *20* | *42* | *0* | *106* |
| Transit Person Trips | 2 | 12 | 1 | 0 | 4 | 39 | 0 | 59 |
| *Inbound* | *0* | *2* | *1* | *0* | *2* | *27* | *0* | *32* |
| *Outbound* | *2* | *10* | *1* | *0* | *2* | *12* | *0* | *26* |
| Bike/Ped/Other Person Trips | 2 | 11 | 1 | 0 | 2 | 37 | 0 | 53 |
| *Inbound* | *0* | *2* | *1* | *0* | *1* | *26* | *0* | *30* |
| *Outbound* | *1* | *10* | *1* | *0* | *1* | *11* | *0* | *24* |
| **Total Person Trips** | **11** | **66** | **7** | **0** | **44** | **217** | **0** | **345** |
| ***Inbound*** | ***2*** | ***10*** | ***4*** | ***0*** | ***21*** | ***152*** | ***0*** | ***188*** |
| ***Outbound*** | ***9*** | ***56*** | ***4*** | ***0*** | ***23*** | ***65*** | ***0*** | ***157*** |
| Total Vehicle Trips | 7 | 42 | 3 | 0 | 25 | 115 | 0 | 191 |
| *Inbound* | *1* | *6* | *2* | *0* | *12* | *80* | *0* | *101* |
| *Outbound* | *5* | *35* | *2* | *0* | *13* | *34* | *0* | *90* |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 3 ONLY**
**LAND USE INTENSITY BY TYPE**

| LAND USE TYPE | Industrial Warehouse (k.g.s.f.) | Office (k.g.s.f.) | Conference (k.g.s.f.) | Recreation (k.g.s.f.) | Day Care (k.g.s.f.) | Std. Residential (d.u.) | Infrastructure (k.g.s.f.) | Military (k.g.s.f.) | Sr. Residential (d.u.) | TOTAL (k.g.s.f.) |
|---|---|---|---|---|---|---|---|---|---|---|
| Land Use Intensity | 32.000 | 0.000 | 0.000 | 0.000 | 10.000 | 230 | 0.000 | 0.000 | | 275.000 |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 3 ONLY**
**PRODUCTIONS AND ATTRACTIONS**

| TIME PERIOD | Total Person Trips | | | | Transit Person Trips | | | Bike/Ped/Other Person Trips | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Productions | Attractions | Attractions | P/A Ratio | Productions | Attractions | P/A Ratio | Productions | Attractions | P/A Ratio |
| Weekday Daily | 230 | 46 | 23 | 5.03 | 46 | 9 | 5.03 | 69 | 14 | 5.03 |
| Weekday AM Peak Hour | 21 | 6 | 3 | 3.29 | 4 | 1 | 3.29 | 6 | 2 | 3.29 |
| Weekday PM Peak Hour | 24 | 8 | 4 | 3.13 | 5 | 2 | 3.13 | 7 | 2 | 3.13 |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 3 ONLY**
**TRIP RATES**

| | Industrial Warehouse | Office | Conference | Recreation | Day Care | Std. Residential | Infrastructure | Military | Sr. Residential | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| % External | 80% | 78% | 75% | 50% | 90% | 90% | 20% | 90% | 65% | 94% |
| % Internal | 20% | 22% | 25% | 50% | 10% | 10% | 80% | 10% | 35% | 6% |
| Non-linked Trip Factor (Internal Only) | 45% | 60% | 60% | 30% | 50% | 100% | 40% | 80% | 100% | 85% |
| Overall Linked Trip Factor | 11% | 0% | 0% | 0% | 5% | 0% | 0% | 0% | 0% | 2% |
| Daily Trip Rate | 6.0 | 15.0 | 8.5 | 45.0 | 57.0 | 10.0 | 1.0 | 1.5 | 5.0 | 10.5 |
| *Inbound* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* |
| *Outbound* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* |
| AM Peak Hour Trip Rate | 0.60 | 2.25 | 0.85 | 2.48 | 9.11 | 0.90 | 0.50 | 0.15 | 0.20 | 1.09 |
| *Inbound* | *80%* | *90%* | *80%* | *60%* | *53%* | *20%* | *90%* | *50%* | *20%* | *33%* |
| *Outbound* | *20%* | *10%* | *20%* | *40%* | *47%* | *80%* | *10%* | *50%* | *80%* | *67%* |
| PM Peak Hour Trip Rate | 0.90 | 1.88 | 0.85 | 4.50 | 10.25 | 1.05 | 0.50 | 0.15 | 0.25 | 1.28 |
| *Inbound* | *20%* | *15%* | *30%* | *50%* | *47%* | *70%* | *15%* | *45%* | *70%* | *60%* |
| *Outbound* | *80%* | *85%* | *70%* | *50%* | *53%* | *30%* | *85%* | *55%* | *30%* | *40%* |
| **External Trips** | | | | | | | | | | |
| % Auto | 65% | 65% | 65% | 65% | 85% | 65% | 65% | 65% | 65% | 69% |
| % Transit | 18% | 18% | 18% | 18% | 10% | 18% | 18% | 18% | 18% | 17% |
| % Bike/Ped/Other | 17% | 17% | 17% | 17% | 5% | 17% | 17% | 17% | 17% | 15% |
| Auto Occupancy Rate | 1.08 | 1.03 | 1.26 | 1.50 | 1.50 | 1.23 | 1.08 | 1.50 | 1.23 | 1.27 |
| **Internal Trips** | | | | | | | | | | |
| % Auto | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% |
| % Transit | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% |
| % Bike/Ped/Other | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% |
| Auto Occupancy Rate | 1.08 | 1.03 | 1.26 | 1.50 | 1.50 | 1.23 | 1.08 | 1.50 | 1.23 | 1.24 |
| **Total Trips** | | | | | | | | | | |
| Auto | 63% | 0% | 0% | 0% | 83% | 64% | 0% | 0% | 0% | 68% |
| Transit | 18% | 0% | 0% | 0% | 11% | 18% | 0% | 0% | 0% | 17% |
| Bike/Ped/Other | 18% | 0% | 0% | 0% | 6% | 18% | 0% | 0% | 0% | 16% |
| Auto Occupancy Rate | 1.08 | 0.00 | 0.00 | 0.00 | 1.50 | 1.23 | 0.00 | 0.00 | 0.00 | 1.27 |

TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO
PHSH EA ALTERNATIVE 3 ONLY
TOTAL TRIPS

| | Industrial Warehouse | Office | Conference | Recreation | Day Care | Std. Residential | Sr. Residential | Total |
|---|---|---|---|---|---|---|---|---|
| **Weekday Daily** | | | | | | | | |
| Auto Person Trips | 109 | 0 | 0 | 0 | 450 | 1,403 | 0 | 1,962 |
| *Inbound* | *55* | *0* | *0* | *0* | *225* | *702* | *0* | *981* |
| *Outbound* | *55* | *0* | *0* | *0* | *225* | *702* | *0* | *981* |
| Transit Person Trips | 31 | 0 | 0 | 0 | 57 | 396 | 0 | 484 |
| *Inbound* | *16* | *0* | *0* | *0* | *28* | *198* | *0* | *242* |
| *Outbound* | *16* | *0* | *0* | *0* | *28* | *198* | *0* | *242* |
| Bike/Ped/Other Person Trips | 32 | 0 | 0 | 0 | 34 | 386 | 0 | 452 |
| *Inbound* | *16* | *0* | *0* | *0* | *17* | *193* | *0* | *226* |
| *Outbound* | *16* | *0* | *0* | *0* | *17* | *193* | *0* | *226* |
| **Total Person Trips** | **173** | **0** | **0** | **0** | **541** | **2,185** | **0** | **2,899** |
| ***Inbound*** | ***86*** | ***0*** | ***0*** | ***0*** | ***271*** | ***1,093*** | ***0*** | ***1,449*** |
| ***Outbound*** | ***86*** | ***0*** | ***0*** | ***0*** | ***271*** | ***1,093*** | ***0*** | ***1,449*** |
| Total Vehicle Trips | 101 | 0 | 0 | 0 | 300 | 1,141 | 0 | 1,542 |
| *Inbound* | *51* | *0* | *0* | *0* | *150* | *570* | *0* | *771* |
| *Outbound* | *51* | *0* | *0* | *0* | *150* | *570* | *0* | *771* |
| **Weekday AM Peak Hour** | | | | | | | | |
| Auto Person Trips | 11 | 0 | 0 | 0 | 72 | 126 | 0 | 209 |
| *Inbound* | *9* | *0* | *0* | *0* | *38* | *25* | *0* | *72* |
| *Outbound* | *2* | *0* | *0* | *0* | *34* | *101* | *0* | *137* |
| Transit Person Trips | 3 | 0 | 0 | 0 | 9 | 36 | 0 | 48 |
| *Inbound* | *3* | *0* | *0* | *0* | *5* | *7* | *0* | *14* |
| *Outbound* | *1* | *0* | *0* | *0* | *4* | *28* | *0* | *33* |
| Bike/Ped/Other Person Trips | 3 | 0 | 0 | 0 | 5 | 35 | 0 | 43 |
| *Inbound* | *3* | *0* | *0* | *0* | *3* | *7* | *0* | *12* |
| *Outbound* | *1* | *0* | *0* | *0* | *3* | *28* | *0* | *31* |
| **Total Person Trips** | **17** | **0** | **0** | **0** | **87** | **197** | **0** | **300** |
| ***Inbound*** | ***14*** | ***0*** | ***0*** | ***0*** | ***46*** | ***39*** | ***0*** | ***99*** |
| ***Outbound*** | ***3*** | ***0*** | ***0*** | ***0*** | ***41*** | ***157*** | ***0*** | ***201*** |
| Total Vehicle Trips | 10 | 0 | 0 | 0 | 48 | 103 | 0 | 161 |
| *Inbound* | *8* | *0* | *0* | *0* | *25* | *21* | *0* | *54* |
| *Outbound* | *2* | *0* | *0* | *0* | *23* | *82* | *0* | *107* |
| **Weekday PM Peak Hour** | | | | | | | | |
| Auto Person Trips | 16 | 0 | 0 | 0 | 81 | 147 | 0 | 245 |
| *Inbound* | *3* | *0* | *0* | *0* | *38* | *103* | *0* | *144* |
| *Outbound* | *13* | *0* | *0* | *0* | *43* | *44* | *0* | *100* |
| Transit Person Trips | 5 | 0 | 0 | 0 | 10 | 42 | 0 | 57 |
| *Inbound* | *1* | *0* | *0* | *0* | *5* | *29* | *0* | *35* |
| *Outbound* | *4* | *0* | *0* | *0* | *5* | *12* | *0* | *22* |
| Bike/Ped/Other Person Trips | 5 | 0 | 0 | 0 | 6 | 41 | 0 | 52 |
| *Inbound* | *1* | *0* | *0* | *0* | *3* | *28* | *0* | *32* |
| *Outbound* | *4* | *0* | *0* | *0* | *3* | *12* | *0* | *19* |
| **Total Person Trips** | **26** | **0** | **0** | **0** | **97** | **229** | **0** | **353** |
| ***Inbound*** | ***5*** | ***0*** | ***0*** | ***0*** | ***46*** | ***161*** | ***0*** | ***212*** |
| ***Outbound*** | ***21*** | ***0*** | ***0*** | ***0*** | ***52*** | ***69*** | ***0*** | ***141*** |
| Total Vehicle Trips | 15 | 0 | 0 | 0 | 54 | 120 | 0 | 189 |
| *Inbound* | *3* | *0* | *0* | *0* | *25* | *84* | *0* | *112* |
| *Outbound* | *12* | *0* | *0* | *0* | *29* | *36* | *0* | *77* |

TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO
PHSH EA ALTERNATIVE 3 ONLY
EXTERNAL TRIPS

| | Industrial Warehouse | Office | Conference | Recreation | Day Care | Std. Residential | Sr. Residential | Total |
|---|---|---|---|---|---|---|---|---|
| **Weekday Daily** | | | | | | | | |
| Auto Person Trips | 100 | 0 | 0 | 0 | 436 | 1,346 | 0 | 1,881 |
| *Inbound* | *50* | *0* | *0* | *0* | *218* | *673* | *0* | *941* |
| *Outbound* | *50* | *0* | *0* | *0* | *218* | *673* | *0* | *941* |
| Transit Person Trips | 28 | 0 | 0 | 0 | 51 | 373 | 0 | 452 |
| *Inbound* | *14* | *0* | *0* | *0* | *26* | *186* | *0* | *226* |
| *Outbound* | *14* | *0* | *0* | *0* | *26* | *186* | *0* | *226* |
| Bike/Ped/Other Person Trips | 26 | 0 | 0 | 0 | 26 | 352 | 0 | 404 |
| *Inbound* | *13* | *0* | *0* | *0* | *13* | *176* | *0* | *202* |
| *Outbound* | *13* | *0* | *0* | *0* | *13* | *176* | *0* | *202* |
| **Total Person Trips** | **154** | **0** | **0** | **0** | **513** | **2,070** | **0** | **2,736** |
| ***Inbound*** | ***77*** | ***0*** | ***0*** | ***0*** | ***256*** | ***1,035*** | ***0*** | ***1,368*** |
| ***Outbound*** | ***77*** | ***0*** | ***0*** | ***0*** | ***256*** | ***1,035*** | ***0*** | ***1,368*** |
| Total Vehicle Trips | 92 | 0 | 0 | 0 | 290 | 1,094 | 0 | 1,477 |
| *Inbound* | *46* | *0* | *0* | *0* | *145* | *547* | *0* | *738* |
| *Outbound* | *46* | *0* | *0* | *0* | *145* | *547* | *0* | *738* |
| **Weekday AM Peak Hour** | | | | | | | | |
| Auto Person Trips | 10 | 0 | 0 | 0 | 70 | 121 | 0 | 201 |
| *Inbound* | *8* | *0* | *0* | *0* | *37* | *24* | *0* | *69* |
| *Outbound* | *2* | *0* | *0* | *0* | *33* | *97* | *0* | *132* |
| Transit Person Trips | 3 | 0 | 0 | 0 | 8 | 34 | 0 | 44 |
| *Inbound* | *2* | *0* | *0* | *0* | *4* | *7* | *0* | *13* |
| *Outbound* | *1* | *0* | *0* | *0* | *4* | *27* | *0* | *31* |
| Bike/Ped/Other Person Trips | 3 | 0 | 0 | 0 | 4 | 32 | 0 | 38 |
| *Inbound* | *2* | *0* | *0* | *0* | *2* | *6* | *0* | *11* |
| *Outbound* | *1* | *0* | *0* | *0* | *2* | *25* | *0* | *28* |
| **Total Person Trips** | **15** | **0** | **0** | **0** | **82** | **186** | **0** | **284** |
| ***Inbound*** | ***12*** | ***0*** | ***0*** | ***0*** | ***43*** | ***37*** | ***0*** | ***93*** |
| ***Outbound*** | ***3*** | ***0*** | ***0*** | ***0*** | ***39*** | ***149*** | ***0*** | ***191*** |
| Total Vehicle Trips | 9 | 0 | 0 | 0 | 46 | 98 | 0 | 154 |
| *Inbound* | *7* | *0* | *0* | *0* | *25* | *20* | *0* | *52* |
| *Outbound* | *2* | *0* | *0* | *0* | *22* | *79* | *0* | *102* |
| **Weekday PM Peak Hour** | | | | | | | | |
| Auto Person Trips | 15 | 0 | 0 | 0 | 78 | 141 | 0 | 235 |
| *Inbound* | *3* | *0* | *0* | *0* | *37* | *99* | *0* | *139* |
| *Outbound* | *12* | *0* | *0* | *0* | *42* | *42* | *0* | *96* |
| Transit Person Trips | 4 | 0 | 0 | 0 | 9 | 39 | 0 | 52 |
| *Inbound* | *1* | *0* | *0* | *0* | *4* | *27* | *0* | *33* |
| *Outbound* | *3* | *0* | *0* | *0* | *5* | *12* | *0* | *20* |
| Bike/Ped/Other Person Trips | 4 | 0 | 0 | 0 | 5 | 37 | 0 | 45 |
| *Inbound* | *1* | *0* | *0* | *0* | *2* | *26* | *0* | *29* |
| *Outbound* | *3* | *0* | *0* | *0* | *2* | *11* | *0* | *17* |
| **Total Person Trips** | **23** | **0** | **0** | **0** | **92** | **217** | **0** | **333** |
| ***Inbound*** | ***5*** | ***0*** | ***0*** | ***0*** | ***43*** | ***152*** | ***0*** | ***200*** |
| ***Outbound*** | ***18*** | ***0*** | ***0*** | ***0*** | ***49*** | ***65*** | ***0*** | ***133*** |
| Total Vehicle Trips | 14 | 0 | 0 | 0 | 52 | 115 | 0 | 181 |
| *Inbound* | *3* | *0* | *0* | *0* | *25* | *80* | *0* | *108* |
| *Outbound* | *11* | *0* | *0* | *0* | *28* | *34* | *0* | *73* |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 4 ONLY**
**LAND USE INTENSITY BY TYPE**

| LAND USE TYPE | Industrial Warehouse (k.g.s.f.) | Office (k.g.s.f.) | Conference (k.g.s.f.) | Recreation (k.g.s.f.) | Day Care (k.g.s.f.) | Std. Residential (d.u.) | Infrastructure (k.g.s.f.) | Military (k.g.s.f.) | Sr. Residential (d.u.) | TOTAL (k.g.s.f.) |
|---|---|---|---|---|---|---|---|---|---|---|
| Land Use Intensity | 15.000 | 0.000 | 0.000 | 5.400 | 9.600 | 114 | 0.000 | 0.000 | 155 | 362.000 |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 4 ONLY**
**PRODUCTIONS AND ATTRACTIONS**

| TIME PERIOD | Total Person Trips | | | | Transit Person Trips | | | Bike/Ped/Other Person Trips | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Productions | Attractions | Attractions | P/A Ratio | Productions | Attractions | P/A Ratio | Productions | Attractions | P/A Ratio |
| Weekday Daily | 385 | 72 | 36 | 5.36 | 77 | 14 | 5.36 | 116 | 22 | 5.36 |
| Weekday AM Peak Hour | 21 | 7 | 4 | 2.94 | 4 | 1 | 2.94 | 6 | 2 | 2.94 |
| Weekday PM Peak Hour | 26 | 10 | 5 | 2.61 | 5 | 2 | 2.61 | 8 | 3 | 2.61 |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 4 ONLY**
**TRIP RATES**

| | Industrial Warehouse | Office | Conference | Recreation | Day Care | Std. Residential | Infrastructure | Military | Sr. Residential | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| % External | 80% | 78% | 75% | 50% | 90% | 90% | 20% | 90% | 65% | 88% |
| % Internal | 20% | 22% | 25% | 50% | 10% | 10% | 80% | 10% | 35% | 12% |
| Non-linked Trip Factor (Internal Only) | 45% | 60% | 60% | 30% | 50% | 100% | 40% | 80% | 100% | 79% |
| Overall Linked Trip Factor | 11% | 0% | 0% | 35% | 5% | 0% | 0% | 0% | 0% | 4% |
| Daily Trip Rate | 6.0 | 15.0 | 8.5 | 45.0 | 57.0 | 10.0 | 1.0 | 1.5 | 5.0 | 6.9 |
| *Inbound* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* |
| *Outbound* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* | *50%* |
| AM Peak Hour Trip Rate | 0.60 | 2.25 | 0.85 | 2.48 | 9.11 | 0.90 | 0.50 | 0.15 | 0.20 | 0.62 |
| *Inbound* | *80%* | *90%* | *80%* | *60%* | *53%* | *20%* | *90%* | *50%* | *20%* | *36%* |
| *Outbound* | *20%* | *10%* | *20%* | *40%* | *47%* | *80%* | *10%* | *50%* | *80%* | *64%* |
| PM Peak Hour Trip Rate | 0.90 | 1.88 | 0.85 | 4.50 | 10.25 | 1.05 | 0.50 | 0.15 | 0.25 | 0.74 |
| *Inbound* | *20%* | *15%* | *30%* | *50%* | *47%* | *70%* | *15%* | *45%* | *70%* | *58%* |
| *Outbound* | *80%* | *85%* | *70%* | *50%* | *53%* | *30%* | *85%* | *55%* | *30%* | *42%* |
| **External Trips** | | | | | | | | | | |
| % Auto | 65% | 65% | 65% | 65% | 85% | 65% | 65% | 65% | 65% | 69% |
| % Transit | 18% | 18% | 18% | 18% | 10% | 18% | 18% | 18% | 18% | 16% |
| % Bike/Ped/Other | 17% | 17% | 17% | 17% | 5% | 17% | 17% | 17% | 17% | 14% |
| Auto Occupancy Rate | 1.08 | 1.03 | 1.26 | 1.50 | 1.50 | 1.23 | 1.08 | 1.50 | 1.23 | 1.30 |
| **Internal Trips** | | | | | | | | | | |
| % Auto | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% |
| % Transit | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% |
| % Bike/Ped/Other | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% | 30% |
| Auto Occupancy Rate | 1.08 | 1.03 | 1.26 | 1.50 | 1.50 | 1.23 | 1.08 | 1.50 | 1.23 | 1.26 |
| **Total Trips** | | | | | | | | | | |
| Auto | 63% | 0% | 0% | 60% | 83% | 64% | 0% | 0% | 62% | 67% |
| Transit | 18% | 0% | 0% | 19% | 11% | 18% | 0% | 0% | 18% | 17% |
| Bike/Ped/Other | 18% | 0% | 0% | 21% | 6% | 18% | 0% | 0% | 20% | 16% |
| Auto Occupancy Rate | 1.08 | 0.00 | 0.00 | 1.50 | 1.50 | 1.23 | 0.00 | 0.00 | 1.23 | 1.30 |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 4 ONLY**
**TOTAL TRIPS**

| | Industrial Warehouse | Office | Conference | Recreation | Day Care | Std. Residential | Sr. Residential | Total |
|---|---|---|---|---|---|---|---|---|
| **Weekday Daily** | | | | | | | | |
| Auto Person Trips | 51 | 0 | 0 | 109 | 432 | 695 | 395 | 1,683 |
| *Inbound* | *26* | *0* | *0* | *55* | *216* | *348* | *198* | *842* |
| *Outbound* | *26* | *0* | *0* | *55* | *216* | *348* | *198* | *842* |
| Transit Person Trips | 15 | 0 | 0 | 34 | 55 | 196 | 118 | 417 |
| *Inbound* | *7* | *0* | *0* | *17* | *27* | *98* | *59* | *209* |
| *Outbound* | *7* | *0* | *0* | *17* | *27* | *98* | *59* | *209* |
| Bike/Ped/Other Person Trips | 15 | 0 | 0 | 39 | 33 | 192 | 126 | 404 |
| *Inbound* | *7* | *0* | *0* | *19* | *16* | *96* | *63* | *202* |
| *Outbound* | *7* | *0* | *0* | *19* | *16* | *96* | *63* | *202* |
| **Total Person Trips** | **81** | **0** | **0** | **182** | **519** | **1,083** | **639** | **2,505** |
| ***Inbound*** | ***41*** | ***0*** | ***0*** | ***91*** | ***260*** | ***542*** | ***320*** | ***1,253*** |
| ***Outbound*** | ***41*** | ***0*** | ***0*** | ***91*** | ***260*** | ***542*** | ***320*** | ***1,253*** |
| Total Vehicle Trips | 48 | 0 | 0 | 73 | 288 | 565 | 321 | 1,295 |
| *Inbound* | *24* | *0* | *0* | *36* | *144* | *283* | *161* | *648* |
| *Outbound* | *24* | *0* | *0* | *36* | *144* | *283* | *161* | *648* |
| **Weekday AM Peak Hour** | | | | | | | | |
| Auto Person Trips | 5 | 0 | 0 | 6 | 69 | 63 | 16 | 159 |
| *Inbound* | *4* | *0* | *0* | *4* | *37* | *13* | *3* | *60* |
| *Outbound* | *1* | *0* | *0* | *2* | *32* | *50* | *13* | *99* |
| Transit Person Trips | 1 | 0 | 0 | 2 | 9 | 18 | 5 | 34 |
| *Inbound* | *1* | *0* | *0* | *1* | *5* | *4* | *1* | *11* |
| *Outbound* | *0* | *0* | *0* | *1* | *4* | *14* | *4* | *23* |
| Bike/Ped/Other Person Trips | 1 | 0 | 0 | 2 | 5 | 17 | 5 | 31 |
| *Inbound* | *1* | *0* | *0* | *1* | *3* | *3* | *1* | *10* |
| *Outbound* | *0* | *0* | *0* | *1* | *2* | *14* | *4* | *21* |
| **Total Person Trips** | **8** | **0** | **0** | **10** | **83** | **97** | **26** | **224** |
| ***Inbound*** | ***6*** | ***0*** | ***0*** | ***6*** | ***44*** | ***19*** | ***5*** | ***81*** |
| ***Outbound*** | ***2*** | ***0*** | ***0*** | ***4*** | ***39*** | ***78*** | ***20*** | ***143*** |
| Total Vehicle Trips | 5 | 0 | 0 | 4 | 46 | 51 | 13 | 119 |
| *Inbound* | *4* | *0* | *0* | *2* | *24* | *10* | *3* | *43* |
| *Outbound* | *1* | *0* | *0* | *2* | *22* | *41* | *10* | *75* |
| **Weekday PM Peak Hour** | | | | | | | | |
| Auto Person Trips | 8 | 0 | 0 | 11 | 78 | 73 | 20 | 189 |
| *Inbound* | *2* | *0* | *0* | *5* | *37* | *51* | *14* | *108* |
| *Outbound* | *6* | *0* | *0* | *5* | *41* | *22* | *6* | *81* |
| Transit Person Trips | 2 | 0 | 0 | 3 | 10 | 21 | 6 | 42 |
| *Inbound* | *0* | *0* | *0* | *2* | *5* | *14* | *4* | *25* |
| *Outbound* | *2* | *0* | *0* | *2* | *5* | *6* | *2* | *17* |
| Bike/Ped/Other Person Trips | 2 | 0 | 0 | 4 | 6 | 20 | 6 | 38 |
| *Inbound* | *0* | *0* | *0* | *2* | *3* | *14* | *4* | *24* |
| *Outbound* | *2* | *0* | *0* | *2* | *3* | *6* | *2* | *15* |
| **Total Person Trips** | **12** | **0** | **0** | **18** | **93** | **114** | **32** | **270** |
| ***Inbound*** | ***2*** | ***0*** | ***0*** | ***9*** | ***44*** | ***80*** | ***22*** | ***157*** |
| ***Outbound*** | ***10*** | ***0*** | ***0*** | ***9*** | ***50*** | ***34*** | ***10*** | ***112*** |
| Total Vehicle Trips | 7 | 0 | 0 | 7 | 52 | 59 | 16 | 142 |
| *Inbound* | *1* | *0* | *0* | *4* | *24* | *42* | *11* | *82* |
| *Outbound* | *6* | *0* | *0* | *4* | *27* | *18* | *5* | *59* |

**TRIP GENERATION AND MODAL SPLIT FOR AREA B OF THE PRESIDIO OF SAN FRANCISCO**
**PHSH EA ALTERNATIVE 4 ONLY**
**EXTERNAL TRIPS**

| | Industrial Warehouse | Office | Conference | Recreation | Day Care | Std. Residential | Sr. Residential | Total |
|---|---|---|---|---|---|---|---|---|
| **Weekday Daily** | | | | | | | | |
| Auto Person Trips | 47 | 0 | 0 | 79 | 418 | 667 | 327 | 1,538 |
| *Inbound* | *23* | *0* | *0* | *39* | *209* | *333* | *164* | *769* |
| *Outbound* | *23* | *0* | *0* | *39* | *209* | *333* | *164* | *769* |
| Transit Person Trips | 13 | 0 | 0 | 22 | 49 | 185 | 91 | 359 |
| *Inbound* | *6* | *0* | *0* | *11* | *25* | *92* | *45* | *180* |
| *Outbound* | *6* | *0* | *0* | *11* | *25* | *92* | *45* | *180* |
| Bike/Ped/Other Person Trips | 12 | 0 | 0 | 21 | 25 | 174 | 86 | 318 |
| *Inbound* | *6* | *0* | *0* | *10* | *12* | *87* | *43* | *159* |
| *Outbound* | *6* | *0* | *0* | *10* | *12* | *87* | *43* | *159* |
| **Total Person Trips** | **72** | **0** | **0** | **122** | **492** | **1,026** | **504** | **2,215** |
| ***Inbound*** | ***36*** | ***0*** | ***0*** | ***61*** | ***246*** | ***513*** | ***252*** | ***1,108*** |
| ***Outbound*** | ***36*** | ***0*** | ***0*** | ***61*** | ***246*** | ***513*** | ***252*** | ***1,108*** |
| Total Vehicle Trips | 43 | 0 | 0 | 53 | 279 | 542 | 266 | 1,183 |
| *Inbound* | *22* | *0* | *0* | *26* | *139* | *271* | *133* | *592* |
| *Outbound* | *22* | *0* | *0* | *26* | *139* | *271* | *133* | *592* |
| **Weekday AM Peak Hour** | | | | | | | | |
| Auto Person Trips | 5 | 0 | 0 | 4 | 67 | 60 | 13 | 149 |
| *Inbound* | *4* | *0* | *0* | *3* | *35* | *12* | *3* | *56* |
| *Outbound* | *1* | *0* | *0* | *2* | *31* | *48* | *10* | *93* |
| Transit Person Trips | 1 | 0 | 0 | 1 | 8 | 17 | 4 | 31 |
| *Inbound* | *1* | *0* | *0* | *1* | *4* | *3* | *1* | *10* |
| *Outbound* | *0* | *0* | *0* | *0* | *4* | *13* | *3* | *21* |
| Bike/Ped/Other Person Trips | 1 | 0 | 0 | 1 | 4 | 16 | 3 | 25 |
| *Inbound* | *1* | *0* | *0* | *1* | *2* | *3* | *1* | *8* |
| *Outbound* | *0* | *0* | *0* | *0* | *2* | *13* | *3* | *18* |
| **Total Person Trips** | **7** | **0** | **0** | **7** | **79** | **92** | **20** | **205** |
| ***Inbound*** | ***6*** | ***0*** | ***0*** | ***4*** | ***42*** | ***18*** | ***4*** | ***74*** |
| ***Outbound*** | ***1*** | ***0*** | ***0*** | ***3*** | ***37*** | ***74*** | ***16*** | ***131*** |
| Total Vehicle Trips | 4 | 0 | 0 | 3 | 45 | 49 | 11 | 111 |
| *Inbound* | *3* | *0* | *0* | *2* | *24* | *10* | *2* | *41* |
| *Outbound* | *1* | *0* | *0* | *1* | *21* | *39* | *9* | *71* |
| **Weekday PM Peak Hour** | | | | | | | | |
| Auto Person Trips | 7 | 0 | 0 | 8 | 75 | 70 | 16 | 177 |
| *Inbound* | *1* | *0* | *0* | *4* | *35* | *49* | *11* | *101* |
| *Outbound* | *6* | *0* | *0* | *4* | *40* | *21* | *5* | *75* |
| Transit Person Trips | 2 | 0 | 0 | 2 | 9 | 19 | 5 | 37 |
| *Inbound* | *0* | *0* | *0* | *1* | *4* | *14* | *3* | *22* |
| *Outbound* | *2* | *0* | *0* | *1* | *5* | *6* | *1* | *15* |
| Bike/Ped/Other Person Trips | 2 | 0 | 0 | 2 | 4 | 18 | 4 | 31 |
| *Inbound* | *0* | *0* | *0* | *1* | *2* | *13* | *3* | *19* |
| *Outbound* | *1* | *0* | *0* | *1* | *2* | *5* | *1* | *12* |
| **Total Person Trips** | **11** | **0** | **0** | **12** | **89** | **108** | **25** | **244** |
| ***Inbound*** | ***2*** | ***0*** | ***0*** | ***6*** | ***42*** | ***75*** | ***18*** | ***143*** |
| ***Outbound*** | ***9*** | ***0*** | ***0*** | ***6*** | ***47*** | ***32*** | ***8*** | ***102*** |
| Total Vehicle Trips | 7 | 0 | 0 | 5 | 50 | 57 | 13 | 132 |
| *Inbound* | *1* | *0* | *0* | *3* | *24* | *40* | *9* | *77* |
| *Outbound* | *5* | *0* | *0* | *3* | *27* | *17* | *4* | *56* |

# APPENDIX B

# PARKING DEMAND BY ALTERNATIVE

**PHSH Site Environmental Assessment**
**Parking Demand**
**Upper Plateau**

| LAND USE | | | | | LONG-TERM DEMAND | | | | | | | SHORT-TERM DEMAND | | | | | | | TOTAL DEMAND | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | Intensity | Unit | Midday to Evening Factor | Midday to Weekend Factor | Spaces per Unit | Empl./ 1,000 gsq.ft. | Auto Mode Share | Vehicle Occupancy Rate | Midday Demand (spaces) | Evening Demand (spaces) | Weekend Demand (spaces) | Daily Vehicle Trips | % Non-work | Trip Ends | Turnover Rate | Midday Demand (spaces) | Evening Demand (spaces) | Weekend Demand (spaces) | Midday | Evening | Weekend |
| **PHSH - PTMP Final Plan Alternative** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 0 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Office | 9,583 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 63% | 1.03 | 19 | 1 | 2 | 78 | 47% | 2 | 6 | 3 | 0 | 0 | **22** | **1** | **2** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 0 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 63% | 1.26 | 0 | 0 | 0 | 0 | 92% | 2 | 3 | 0 | 0 | 0 | **0** | **0** | **0** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 7,724 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 63% | 1.50 | 5 | 3 | 5 | 117 | 92% | 2 | 10 | 5 | 4 | 5 | **10** | **7** | **9** |
| Day Care | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Std. Residential | 0 | d.u. | 2.0 | 2.0 | 1.13 | --- | 61% | 1.23 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 100 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 55% | 1.08 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 17,307 | gsq.ft. | | | | | 63% | 1.44 | 24 | 4 | 6 | 196 | | | | 8 | 4 | 5 | **32** | **8** | **11** |
| **PHSH - Requested No Action Alternative (January 31, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 0 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Office | 9,583 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 63% | 1.03 | 19 | 1 | 2 | 78 | 47% | 2 | 6 | 3 | 0 | 0 | **22** | **1** | **2** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 0 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 3 | 0 | 0 | 0 | **0** | **0** | **0** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Day Care | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Std. Residential | 0 | d.u. | 2.0 | 2.0 | 0.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 0 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 9,583 | gsq.ft. | | | | | 81% | 1.44 | 19 | 1 | 2 | 78 | | | | 3 | 0 | 0 | **22** | **1** | **2** |
| **PHSH - E.A. Alternative 1 (January 31, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 0 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Office | 9,583 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 63% | 1.03 | 19 | 1 | 2 | 78 | 47% | 2 | 6 | 3 | 0 | 0 | **22** | **1** | **2** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 0 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 63% | 1.26 | 0 | 0 | 0 | 0 | 92% | 2 | 3 | 0 | 0 | 0 | **0** | **0** | **0** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 7,724 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 63% | 1.50 | 5 | 3 | 5 | 117 | 92% | 2 | 10 | 5 | 4 | 5 | **10** | **7** | **9** |
| Day Care | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Std. Residential | 0 | d.u. | 2.0 | 2.0 | 1.13 | --- | 61% | 1.23 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 100 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 55% | 1.08 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 17,307 | gsq.ft. | | | | | 67% | 1.44 | 24 | 4 | 6 | 196 | | | | 8 | 4 | 5 | **32** | **8** | **11** |

**PHSH Site Environmental Assessment**
**Parking Demand**
**Upper Plateau**

| LAND USE | | | | | LONG-TERM DEMAND | | | | | | | SHORT-TERM DEMAND | | | | | | | TOTAL DEMAND | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | Intensity | Unit | Midday to Evening Factor | Midday to Weekend Factor | Spaces per Unit | Empl./ 1,000 gsq.ft. | Auto Mode Share | Vehicle Occupancy Rate | Midday Demand (spaces) | Evening Demand (spaces) | Weekend Demand (spaces) | Daily Vehicle Trips | % Non-work | Trip Ends | Turnover Rate | Midday Demand (spaces) | Evening Demand (spaces) | Weekend Demand (spaces) | Midday | Evening | Weekend |
| **PHSH - E.A. Alternative 2 (January 11, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 0 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Office | 0 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 63% | 1.03 | 0 | 0 | 0 | 0 | 47% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 0 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 3 | 0 | 0 | 0 | **0** | **0** | **0** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 1,700 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 63% | 1.50 | 1 | 1 | 1 | 26 | 92% | 2 | 10 | 1 | 1 | 1 | **2** | **2** | **2** |
| Day Care | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Std. Residential | 13 | d.u. | 2.0 | 2.0 | 1.32 | --- | 64% | 1.23 | 9 | 17 | 17 | 64 | --- | --- | --- | --- | --- | --- | **9** | **17** | **17** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 0 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 17,300 | gsq.ft. | | | | | 65% | 1.21 | 10 | 18 | 18 | 90 | | | | 1 | 1 | 1 | **11** | **19** | **19** |
| **PHSH - E.A. Alternative 3 (January 31, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 17,300 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 16 | 1 | 2 | 55 | 60% | 2 | 6 | 3 | 0 | 0 | **18** | **1** | **2** |
| Office | 0 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 0% | 0.00 | 0 | 0 | 0 | 0 | 47% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 0 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 3 | 0 | 0 | 0 | **0** | **0** | **0** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Day Care | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Std. Residential | 0 | d.u. | 2.0 | 2.0 | 1.21 | --- | 64% | 1.23 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 0 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 17,300 | gsq.ft. | | | | | 68% | 1.27 | 16 | 1 | 2 | 55 | | | | 3 | 0 | 0 | **18** | **1** | **2** |
| **PHSH - E.A. Alternative 4 (January 31, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 0 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Office | 0 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 0% | 0.00 | 0 | 0 | 0 | 0 | 47% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 0 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 3 | 0 | 0 | 0 | **0** | **0** | **0** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 60% | 1.50 | 0 | 0 | 0 | 0 | 92% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Day Care | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Std. Residential | 77 | d.u. | 2.0 | 2.0 | 1.32 | --- | 64% | 1.23 | 51 | 102 | 102 | 382 | --- | --- | --- | --- | --- | --- | **51** | **102** | **102** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 62% | 1.23 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 0 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 71,280 | gsq.ft. | | | | | 67% | 1.30 | 51 | 102 | 102 | 382 | | | | 0 | 0 | 0 | **51** | **102** | **102** |

**PHSH Site Environmental Assessment**
**Parking Demand**
**Lower Plateau**

| LAND USE | | | | | | LONG-TERM DEMAND | | | | | | SHORT-TERM DEMAND | | | | | | | TOTAL DEMAND | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | Intensity | Unit | Midday to Evening Factor | Midday to Weekend Factor | Spaces per Unit | Empl./ 1,000 gsq.ft. | Auto Mode Share | Vehicle Occupancy Rate | Midday Demand (spaces) | Evening Demand (spaces) | Weekend Demand (spaces) | Daily Vehicle Trips | % Non-work | Trip Ends | Turnover Rate | Midday Demand (spaces) | Evening Demand (spaces) | Weekend Demand (spaces) | Midday | Evening | Weekend |
| **PHSH - PTMP Final Plan Alternative** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 1,480 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 1 | 0 | 0 | 5 | 60% | 2 | 6 | 0 | 0 | 0 | **2** | **0** | **0** |
| Office | 0 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 63% | 1.03 | 0 | 0 | 0 | 0 | 47% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 10,000 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 63% | 1.26 | 8 | 5 | 10 | 37 | 92% | 2 | 3 | 6 | 4 | 8 | **13** | **9** | **18** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 0 | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 183,198 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 63% | 1.50 | 118 | 79 | 108 | 2,785 | 92% | 2 | 10 | 128 | 85 | 117 | **246** | **164** | **224** |
| Day Care | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Std. Residential | 185 * | d.u. | 2.0 | 2.0 | 1.13 | --- | 61% | 1.23 | 104 | 208 | 208 | 706 | --- | --- | --- | --- | --- | --- | **104** | **208** | **208** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 0 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 55% | 1.08 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 382,693 | gsq.ft. | | | | | 63% | 1.44 | 232 | 292 | 326 | 3,532 | | | | 134 | 89 | 124 | **365** | **381** | **450** |
| **PHSH - Requested No Action Alternative (January 31, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 15,105 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 14 | 1 | 1 | 48 | 60% | 2 | 6 | 2 | 0 | 0 | **16** | **1** | **2** |
| Office | 4,749 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 63% | 1.03 | 10 | 0 | 1 | 39 | 47% | 2 | 6 | 2 | 0 | 0 | **11** | **1** | **1** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 0 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 3 | 0 | 0 | 0 | **0** | **0** | **0** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Day Care | 37,708 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 32 | 21 | 29 | 1,131 | 92% | 2 | 10 | 52 | 35 | 47 | **84** | **56** | **76** |
| Std. Residential | 0 | d.u. | 2.0 | 2.0 | 0.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 0 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 57,562 | gsq.ft. | | | | | 81% | 1.44 | 55 | 22 | 31 | 1,218 | | | | 56 | 35 | 48 | **111** | **58** | **79** |
| **PHSH - E.A. Alternative 1 (January 31, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 1,480 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 1 | 0 | 0 | 5 | 60% | 2 | 6 | 0 | 0 | 0 | **2** | **0** | **0** |
| Office | 0 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 63% | 1.03 | 0 | 0 | 0 | 0 | 47% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 10,000 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 63% | 1.26 | 8 | 5 | 10 | 37 | 92% | 2 | 3 | 6 | 4 | 8 | **13** | **9** | **18** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 0 | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 145,490 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 63% | 1.50 | 94 | 63 | 86 | 2,211 | 92% | 2 | 10 | 102 | 68 | 93 | **196** | **130** | **178** |
| Day Care | 37,708 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 32 | 21 | 29 | 1,131 | 92% | 2 | 10 | 52 | 35 | 47 | **84** | **56** | **76** |
| Std. Residential | 185 * | d.u. | 2.0 | 2.0 | 1.13 | --- | 61% | 1.23 | 104 | 208 | 208 | 706 | --- | --- | --- | --- | --- | --- | **104** | **208** | **208** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 0 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 55% | 1.08 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 382,693 | gsq.ft. | | | | | 67% | 1.44 | 239 | 298 | 333 | 4,090 | | | | 160 | 106 | 148 | **399** | **403** | **480** |

(*) Reflects the actual number of regular dwelling units (150 regular units and 52 dorm units)
A factor of 2/3 is applied to dorm units for trip generation purposes, to convert them into regular units

**PHSH Site Environmental Assessment**
**Parking Demand**
**Lower Plateau**

| LAND USE | | | | | | LONG-TERM DEMAND | | | | | | SHORT-TERM DEMAND | | | | | | | TOTAL DEMAND | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | Intensity | Unit | Midday to Evening Factor | Midday to Weekend Factor | Spaces per Unit | Empl./ 1,000 gsq.ft. | Auto Mode Share | Vehicle Occupancy Rate | Midday Demand (spaces) | Evening Demand (spaces) | Weekend Demand (spaces) | Daily Vehicle Trips | % Non-work | Trip Ends | Turnover Rate | Midday Demand (spaces) | Evening Demand (spaces) | Weekend Demand (spaces) | Midday | Evening | Weekend |
| **PHSH - E.A. Alternative 2 (January 11, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 15,000 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 13 | 1 | 1 | 48 | 60% | 2 | 6 | 2 | 0 | 0 | **16** | **1** | **2** |
| Office | 45,050 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 63% | 1.03 | 90 | 5 | 9 | 369 | 47% | 2 | 6 | 14 | 1 | 1 | **105** | **5** | **10** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 0 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 3 | 0 | 0 | 0 | **0** | **0** | **0** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 0 | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 63% | 1.50 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Day Care | 4,750 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 4 | 3 | 4 | 142 | 92% | 2 | 10 | 7 | 4 | 6 | **11** | **7** | **10** |
| Std. Residential | 217 | d.u. | 2.0 | 2.0 | 1.32 | --- | 64% | 1.23 | 143 | 286 | 286 | 1,076 | --- | --- | --- | --- | --- | --- | **143** | **286** | **286** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 0 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 382,700 | gsq.ft. | | | | | 65% | 1.21 | 251 | 294 | 300 | 1,635 | | | | 23 | 5 | 8 | **275** | **299** | **308** |
| **PHSH - E.A. Alternative 3 (January 31, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 14,700 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 13 | 1 | 1 | 47 | 60% | 2 | 6 | 2 | 0 | 0 | **16** | **1** | **2** |
| Office | 0 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 0% | 0.00 | 0 | 0 | 0 | 0 | 47% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 0 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 3 | 0 | 0 | 0 | **0** | **0** | **0** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 0 | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Day Care | 10,000 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 8 | 6 | 8 | 300 | 92% | 2 | 10 | 14 | 9 | 13 | **22** | **15** | **20** |
| Std. Residential | 230 | d.u. | 2.0 | 2.0 | 1.21 | --- | 64% | 1.23 | 139 | 278 | 278 | 1,141 | --- | --- | --- | --- | --- | --- | **139** | **278** | **278** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 0 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 257,700 | gsq.ft. | | | | | 68% | 1.27 | 161 | 284 | 287 | 1,487 | | | | 16 | 9 | 13 | **177** | **294** | **300** |
| **PHSH - E.A. Alternative 4 (January 31, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 15,000 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 13 | 1 | 1 | 48 | 60% | 2 | 6 | 2 | 0 | 0 | **16** | **1** | **2** |
| Office | 0 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 0% | 0.00 | 0 | 0 | 0 | 0 | 47% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 0 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 3 | 0 | 0 | 0 | **0** | **0** | **0** |
| Recreational | 5,400 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 60% | 1.50 | 2 | 2 | 3 | 73 | 92% | 2 | 6 | 6 | 6 | 8 | **7** | **7** | **11** |
| Cultural/Education | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Day Care | 9,600 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 8 | 5 | 7 | 288 | 92% | 2 | 10 | 13 | 9 | 12 | **21** | **14** | **19** |
| Std. Residential | 37 | d.u. | 2.0 | 2.0 | 1.32 | --- | 64% | 1.23 | 25 | 49 | 49 | 183 | --- | --- | --- | --- | --- | --- | **25** | **49** | **49** |
| Senior Residential | 155 | d.u. | 2.0 | 2.0 | 0.27 | --- | 62% | 1.23 | 21 | 42 | 42 | 321 | --- | --- | --- | --- | --- | --- | **21** | **42** | **42** |
| Infrastructure | 0 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 290,700 | gsq.ft. | | | | | 67% | 1.30 | 69 | 99 | 102 | 913 | | | | 21 | 15 | 21 | **90** | **113** | **123** |

**PHSH Site Environmental Assessment**
**Total Parking Demand**
**(Upper + Lower Plateaus)**

| LAND USE | | | | | | LONG-TERM DEMAND | | | | | | SHORT-TERM DEMAND | | | | | | | TOTAL DEMAND | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | Intensity | Unit | Midday to Evening Factor | Midday to Weekend Factor | Spaces per Unit | Empl./ 1,000 gsq.ft. | Auto Mode Share | Vehicle Occupancy Rate | Midday Demand (spaces) | Evening Demand (spaces) | Weekend Demand (spaces) | Daily Vehicle Trips | % Non-work | Trip Ends | Turnover Rate | Midday Demand (spaces) | Evening Demand (spaces) | Weekend Demand (spaces) | Midday | Evening | Weekend |
| **PHSH - PTMP Final Plan Alternative** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 1,480 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 1 | 0 | 0 | 5 | 60% | 2 | 6 | 0 | 0 | 0 | **2** | **0** | **0** |
| Office | 9,583 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 63% | 1.03 | 19 | 1 | 2 | 78 | 47% | 2 | 6 | 3 | 0 | 0 | **22** | **1** | **2** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 10,000 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 63% | 1.26 | 8 | 5 | 10 | 37 | 92% | 2 | 3 | 6 | 4 | 8 | **13** | **9** | **18** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 0 | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 190,922 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 63% | 1.50 | 123 | 82 | 112 | 2,902 | 92% | 2 | 10 | 133 | 89 | 121 | **257** | **171** | **234** |
| Day Care | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Std. Residential | 185 * | d.u. | 2.0 | 2.0 | 1.13 | --- | 61% | 1.23 | 104 | 208 | 208 | 706 | --- | --- | --- | --- | --- | --- | **104** | **208** | **208** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 100 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 55% | 1.08 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 400,000 | gsq.ft. | | | | | 63% | 1.44 | 256 | 297 | 333 | 3,728 | | | | 142 | 93 | 129 | **398** | **389** | **462** |
| **PHSH - Requested No Action Alternative (January 31, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 15,105 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 14 | 1 | 1 | 48 | 60% | 2 | 6 | 2 | 0 | 0 | **16** | **1** | **2** |
| Office | 14,332 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 63% | 1.03 | 29 | 1 | 3 | 117 | 47% | 2 | 6 | 5 | 0 | 0 | **33** | **2** | **3** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 0 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 3 | 0 | 0 | 0 | **0** | **0** | **0** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Day Care | 37,708 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 32 | 21 | 29 | 1,131 | 92% | 2 | 10 | 52 | 35 | 47 | **84** | **56** | **76** |
| Std. Residential | 0 | d.u. | 2.0 | 2.0 | 0.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 0 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 67,145 | gsq.ft. | | | | | 81% | 1.44 | 74 | 23 | 33 | 1,296 | | | | 59 | 35 | 48 | **133** | **59** | **81** |
| **PHSH - E.A. Alternative 1 (January 31, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 1,480 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 1 | 0 | 0 | 5 | 60% | 2 | 6 | 0 | 0 | 0 | **2** | **0** | **0** |
| Office | 9,583 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 63% | 1.03 | 19 | 1 | 2 | 78 | 47% | 2 | 6 | 3 | 0 | 0 | **22** | **1** | **2** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 10,000 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 63% | 1.26 | 8 | 5 | 10 | 37 | 92% | 2 | 3 | 6 | 4 | 8 | **13** | **9** | **18** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 0 | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 153,214 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 63% | 1.50 | 99 | 66 | 90 | 2,329 | 92% | 2 | 10 | 107 | 71 | 97 | **206** | **137** | **188** |
| Day Care | 37,708 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 32 | 21 | 29 | 1,131 | 92% | 2 | 10 | 52 | 35 | 47 | **84** | **56** | **76** |
| Std. Residential | 185 * | d.u. | 2.0 | 2.0 | 1.13 | --- | 61% | 1.23 | 104 | 208 | 208 | 706 | --- | --- | --- | --- | --- | --- | **104** | **208** | **208** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 100 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 55% | 1.08 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 400,000 | gsq.ft. | | | | | 67% | 1.44 | 263 | 302 | 340 | 4,286 | | | | 168 | 110 | 153 | **431** | **411** | **492** |

(*) Reflects the actual number of regular dwelling units (150 regular units and 52 dorm units)
A factor of 2/3 is applied to dorm units for trip generation purposes, to convert them into regular units

**PHSH Site Environmental Assessment**
**Total Parking Demand**
**(Upper + Lower Plateaus)**

| LAND USE | | | | | | LONG-TERM DEMAND | | | | | | SHORT-TERM DEMAND | | | | | | | TOTAL DEMAND | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | Intensity | Unit | Midday to Evening Factor | Midday to Weekend Factor | Spaces per Unit | Empl./ 1,000 gsq.ft. | Auto Mode Share | Vehicle Occupancy Rate | Midday Demand (spaces) | Evening Demand (spaces) | Weekend Demand (spaces) | Daily Vehicle Trips | % Non-work | Trip Ends | Turnover Rate | Midday Demand (spaces) | Evening Demand (spaces) | Weekend Demand (spaces) | Midday | Evening | Weekend |
| **PHSH - E.A. Alternative 2 (January 11, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 15,000 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 13 | 1 | 1 | 48 | 60% | 2 | 6 | 2 | 0 | 0 | **16** | **1** | **2** |
| Office | 45,050 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 63% | 1.03 | 90 | 5 | 9 | 369 | 47% | 2 | 6 | 14 | 1 | 1 | **105** | **5** | **10** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 0 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 3 | 0 | 0 | 0 | **0** | **0** | **0** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 0 | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 1,700 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 63% | 1.50 | 1 | 1 | 1 | 26 | 92% | 2 | 10 | 1 | 1 | 1 | **2** | **2** | **2** |
| Day Care | 4,750 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 4 | 3 | 4 | 142 | 92% | 2 | 10 | 7 | 4 | 6 | **11** | **7** | **10** |
| Std. Residential | 230 | d.u. | 2.0 | 2.0 | 1.32 | --- | 64% | 1.23 | 152 | 303 | 303 | 1,141 | --- | --- | --- | --- | --- | --- | **152** | **303** | **303** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 0 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 400,000 | gsq.ft. | | | | | 65% | 1.21 | 260 | 312 | 318 | 1,725 | | | | 25 | 6 | 9 | **286** | **318** | **327** |
| **PHSH - E.A. Alternative 3 (January 31, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 32,000 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 29 | 1 | 3 | 101 | 60% | 2 | 6 | 5 | 0 | 1 | **34** | **2** | **3** |
| Office | 0 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 0% | 0.00 | 0 | 0 | 0 | 0 | 47% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 0 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 3 | 0 | 0 | 0 | **0** | **0** | **0** |
| Recreational | 0 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 0 | 0 | 0 | 0 | **0** | **0** | **0** |
| Cultural/Education | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Day Care | 10,000 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 8 | 6 | 8 | 300 | 92% | 2 | 10 | 14 | 9 | 13 | **22** | **15** | **20** |
| Std. Residential | 230 | d.u. | 2.0 | 2.0 | 1.21 | --- | 64% | 1.23 | 139 | 278 | 278 | 1,141 | --- | --- | --- | --- | --- | --- | **139** | **278** | **278** |
| Senior Residential | 0 | d.u. | 2.0 | 2.0 | 0.27 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Infrastructure | 0 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | 275,000 | gsq.ft. | | | | | 68% | 1.27 | 176 | 285 | 289 | 1,542 | | | | 19 | 9 | 13 | **195** | **295** | **301** |
| **PHSH - E.A. Alternative 4 (January 31, 2006)** | | | | | | | | | | | | | | | | | | | | | |
| Industr./Warehouse | 15,000 | gsq.ft. | 0.05 | 0.10 | | 1.53 | 63% | 1.08 | 13 | 1 | 1 | 48 | 60% | 2 | 6 | 2 | 0 | 0 | **16** | **1** | **2** |
| Office | 0 | gsq.ft. | 0.05 | 0.10 | | 3.27 | 0% | 0.00 | 0 | 0 | 0 | 0 | 47% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Retail | 0 | gsq.ft. | 2/3 | 3/4 | | 2.86 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Lodging | 0 | rooms | 2.0 | 2.0 | 1.00 | --- | 0% | 0.00 | 0 | 0 | 0 | 0 | --- | --- | --- | --- | --- | --- | **0** | **0** | **0** |
| Conference | 0 | gsq.ft. | 2/3 | 1 1/3 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 3 | 0 | 0 | 0 | **0** | **0** | **0** |
| Recreational | 5,400 | gsq.ft. | 1.0 | 1.5 | | 0.81 | 60% | 1.50 | 2 | 2 | 3 | 73 | 92% | 2 | 6 | 6 | 6 | 8 | **7** | **7** | **11** |
| Cultural/Education | 0 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 0% | 0.00 | 0 | 0 | 0 | 0 | 92% | 2 | 10 | 0 | 0 | 0 | **0** | **0** | **0** |
| Day Care | 9,600 | gsq.ft. | 2/3 | 0.91 | | 1.53 | 83% | 1.50 | 8 | 5 | 7 | 288 | 92% | 2 | 10 | 13 | 9 | 12 | **21** | **14** | **19** |
| Std. Residential | 114 | d.u. | 2.0 | 2.0 | 1.32 | --- | 64% | 1.23 | 76 | 151 | 151 | 565 | --- | --- | --- | --- | --- | --- | **76** | **151** | **151** |
| Senior Residential | 155 | d.u. | 2.0 | 2.0 | 0.27 | --- | 62% | 1.23 | 21 | 42 | 42 | 321 | --- | --- | --- | --- | --- | --- | **21** | **42** | **42** |
| Infrastructure | 0 | gsq.ft. | 2/3 | 0.91 | | 0.81 | 0% | 0.00 | 0 | 0 | 0 | 0 | 60% | 2 | 6 | 0 | 0 | 0 | **0** | **0** | **0** |
| Military | 0 | gsq.ft. | | | | | 0% | 0.00 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | **0** | **0** | **0** |
| **TOTAL** | ERROR! | gsq.ft. | | | | | 67% | 1.30 | 120 | 201 | 204 | 1,295 | | | | 21 | 15 | 21 | **141** | **215** | **225** |

Wilbur Smith Associates

ENGINEERS PLANNERS ECONOMISTS

# MEMO

**SAN FRANCISCO OFFICE**
**April 19, 2006**

Project Number: 395900

**To:** Amy Marshall, The Presidio Trust

**From:** José I. Farrán, Project Manager
Nate Chanchareon, Senior Transportation Engineer

**Subject:** The Presidio of San Francisco
Public Health Service Hospital Site Supplemental Environmental Impact Statement
Technical Memorandum No. 3 – Expanded Transportation Impact Analysis of Alternatives

## 1. INTRODUCTION

This Technical Memorandum estimates and describes the potential impacts parameters associated with the Requested No Action Alternative and Alternatives 1, 2, 3 and 4 for rehabilitation and reuse of the Presidio of San Francisco's Public Health Service Hospital (PHSH) development site. This Technical Memorandum estimates the impact of each land use alternative with respect to:

- Traffic levels in and adjacent to the Presidio,
- Traffic at adjacent intersections,
- On/Off-site pedestrian and bicycle facilities,
- Public transportation
- Parking, and
- Cumulative impacts.

## 2. TRAFFIC OPERATIONS

### 2.1 Future Highway Network

Currently, the 15th Avenue Gate is open to vehicular and pedestrian traffic while the 14th Avenue Gate is open only to pedestrians. This roadway configuration is assumed to be maintained for the Requested No Action Alternative. Although this configuration functions adequately with the existing level of traffic, future occupancy of the PHSH and other Presidio buildings is expected to warrant improved access and circulation. The NPS 1994 General Management Plan Amendment for the Presidio recognized such access needs and recommended reopening the 14th



Avenue Gate to vehicular traffic and operating the 14th Avenue and 15th Avenue Gates as a one-way couplet with the 14th Avenue Gate accommodating northbound traffic entering the Presidio and the 15th Avenue Gate accommodating southbound traffic exiting the Presidio. This one-way couplet was assumed in the analysis of transportation-related impacts of land use alternatives in the *Presidio Trust Management Plan – Background Transportation Report for the Final EIS*, prepared by Wilbur Smith Associates (WSA) in May 2002 and has also been assumed for the assessment of traffic impacts related to Alternatives 1, 2, 3, and 4 in the Final EIS for the PHSH district.

### 2.2 Intersection Analysis

Intersection operating conditions have been evaluated for weekday AM and PM peak period conditions in the year 2025 at eight key intersections in the vicinity of the PHSH site. Because these intersections are the intersections closest to the PHSH district, these are the intersections that would most likely experience the greatest change in traffic volumes due to changes in land uses at the PHSH site. The dispersion of traffic to several routes radiating from the PHSH district would yield a decreasing effect on individual intersections with increased distance from the PHSH district, and therefore the effect of the PHSH alternatives on intersections beyond those identified below would be minimal. The eight study intersections are:

- Lake Street/17th Avenue
- Lake Street/15th Avenue
- Lake Street/14th Avenue
- Lake Street/Park Presidio Boulevard
- Lake Street/Funston Avenue
- California Street/15th Avenue
- California Street/14th Avenue
- California Street/Park Presidio Boulevard

The AM and PM peak hour intersection operations analysis was conducted according to the methodology described in the 2000 Highway Capacity Manual (HCM 2000) (Transportation Research Board, 2000). The HCM 2000 methodology is appropriate as it is the same methodology used by the San Francisco Planning Department (Transportation Impact Analysis Guidelines for Environmental Review, October 2002) and is also being used for the Doyle Drive study. The HCM methodology calculates the average delay experienced by a vehicle traveling through the intersection, and assigns a corresponding level of service (LOS). The levels of service range from LOS A, indicating volumes well below capacity with vehicles experiencing little or no delay, to LOS F, indicating volumes near capacity with vehicles experiencing extremely high delays[1].

[1] The City and County of San Francisco generally considers intersection operation at LOS D or better to be acceptable, and intersection operation at LOS E or F to be unacceptable.

For signalized intersections, the HCM 2000 methodology determines the average delay per vehicle for each lane group based on the particular movement, and traffic volume and capacity associated with that lane group. The average delay per vehicle is then aggregated for each approach and for the intersection as a whole. A combined weighted average delay and LOS is then presented for the intersection as a whole. For unsignalized intersections, average delay and LOS operating conditions are calculated by approach (e.g., northbound) and movement (e.g., northbound left-turn). For two-way stop-controlled intersections, delay and LOS are calculated for each of the stop-controlled approaches and operating conditions are reported for the worst approach. For all-way stop-controlled intersections, average delay per vehicle is averaged across all approaches, and operating conditions are reported for the average delay and LOS for the intersection as a whole. LOS calculation worksheets are included in Appendix A.

### 2.2.1 One-Way Couplet at 14th and 15th Avenue Gates

Tables 1 and 2 present the results of the intersection LOS analysis for the 2025 weekday AM and PM peak hour conditions for the four land use alternatives (Alternatives 1-4) assuming that the 14th Avenue and 15th Avenue Gates operate as a one-way couplet with the 14th Avenue Gate accommodating northbound traffic entering the Presidio and the 15th Avenue Gate accommodating southbound traffic exiting the Presidio (Appendix A contains the detailed calculations of the intersection LOS analysis). Under the Requested No Action Alternative, the 14th Avenue Gate would remain closed to both inbound and outbound traffic, with the 15th Avenue Gate maintaining its existing operations as the entrance and exit to the Presidio and PHSH site.



**Table 1**
**Intersection Levels of Service – Year 2025 Weekday AM Peak Hour**

| Intersection | Traffic Control Device | No Action Alt | | Alt. 1 | | Alt. 2 | | Alt. 3 | | Alt. 4 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS |
| Lake St/ 17th Ave [2] | 2-Way Stop | 20.7 (SB) | C | 21.2 (SB) | C | 20.6 (SB) | C | 20.6 (SB) | C | 20.4 (SB) | C |
| Lake St/ 15th Ave | 4-Way Stop | **43.3** | **E** | **38.3** | **E** | 30.4 | D | 30.2 | D | 27.6 | D |
| Lake St/ 14th Ave [2] | 2-Way Stop | **39.0** (SB) | **E** | **>50** (SB) | **F** | **>50** (NB) | **F** | **>50** (NB) | **F** | **>50** (NB) | **F** |
| Lake St/ Park Presidio Blvd. | Traffic Signal | 22.0 | C | 22.9 | C | 21.9 | C | 21.8 | C | 21.6 | C |
| Lake St/Funston Ave [2] | 2-Way Stop | 20.6 (SB) | C | 21.2 (SB) | C | 20.5 (SB) | C | 20.4 (SB) | C | 20.3 (SB) | C |
| California St/ 15th Ave [2] | 2-Way Stop | 24.5 (NB) | C | 20.9 (NB) | C | 19.9 (NB) | C | 19.8 (NB) | C | 19.6 (NB) | C |
| California St/ 14th Ave [2] | 2-Way Stop | **>50** (SB) | **F** | **>50** (SB) | **F** | **>50** (SB) | **F** | **>50** (SB) | **F** | **>50** (SB) | **F** |
| California St/ Park Presidio Blvd. | Traffic Signal | 20.4 | C | 20.5 | C | 20.4 | C | 20.4 | C | 20.4 | C |

Source: Wilbur Smith Associates – February 2006

Notes:

[1] Delay presented in seconds per vehicle based on the 2000 HCM methodology.

[2] LOS and delay shown for worst minor stop-controlled approach. Major approach is uncontrolled and without delay.

**Table 2**
**Intersection Levels of Service – Year 2025 Weekday PM Peak Hour**

| Intersection | Traffic Control Device | No Action Alt | | Alt. 1 | | Alt. 2 | | Alt. 3 | | Alt. 4 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS |
| Lake St/ 17th Ave[2] | 2-Way Stop | 21.0 (SB) | C | 22.0 (SB) | C | 20.9 (SB) | C | 20.9 (SB) | C | 20.7 (SB) | C |
| Lake St/ 15th Ave | 4-Way Stop | 31.4 | D | 28.2 | D | 18.3 | C | 17.8 | C | 17.2 | C |
| Lake St/ 14th Ave [2] | 2-Way Stop | **>50** (SB) | **F** | **>50** (SB) | **F** | **>50** (SB) | **F** | **>50** (SB) | **F** | **>50** (SB) | **F** |
| Lake St/ Park Presidio Blvd. | Traffic Signal | 39.8 | D | 49.1 | D | 39.7 | D | 39.6 | D | 38.7 | D |
| Lake St/Funston Ave[2] | 2-Way Stop | 19.2 (NB) | C | 20.5 (NB) | C | 19.1 (NB) | C | 19.1 (NB) | C | 18.9 (NB) | C |
| California St/ 15th Ave [2] | 2-Way Stop | 30.1 (SB) | D | 29.4 (SB) | D | 25.3 (SB) | D | 25.6 (SB) | D | 25.3 (SB) | D |
| California St/ 14th Ave [2] | 2-Way Stop | **>50** (SB) | **F** | **>50** (SB) | **F** | **>50** (SB) | **F** | **>50** (SB) | **F** | **>50** (SB) | **F** |
| California St/ Park Presidio Blvd. | Traffic Signal | 42.1 | D | 42.2 | D | 42.1 | D | 42.1 | D | 42.1 | D |

Source: Wilbur Smith Associates – February 2006
Notes:
[1] Delay presented in seconds per vehicle based on the 2000 HCM methodology.
[2] LOS and delay shown for worst minor stop-controlled approach. Major approach is uncontrolled and without delay.



**Requested No Action Alternative** – As Table 1 indicates, under the Requested No Action Alternative, in the AM peak hour, all but three intersections would operate at LOS D or better. The minor approaches to the two-way stop-controlled intersections of Lake Street/14th Avenue and California Street/14th Avenue would operate at LOS E and F, respectively. The all-way stop-controlled intersection of Lake Street/15th Avenue would also operate at LOS E, primarily due to the retention of the existing circulation (closure of 14th Avenue gate with all traffic through the 15th Avenue gate).

As shown in Table 2, in the PM peak hour, the minor approaches to the two-way stop-controlled intersections of Lake Street/14th Avenue, and California Street/14th Avenue would operate at LOS F. All other intersections would operate at LOS D or better.

**Alternative 1: PTMP Alternative** –As Table 1 indicates, under Alternative 1, in the AM peak hour, all but three intersections would operate at LOS D or better. The minor approaches to the two-way stop-controlled intersections of Lake Street/14th Avenue and California Street/14th Avenue would operate at LOS F. The all-way stop-controlled intersection of Lake Street/15th Avenue would also operate at LOS E.

As shown in Table 2, in the PM peak hour, the minor approaches to the two-way stop-controlled intersections of Lake Street/14th Avenue and California Street/14th Avenue would operate at LOS F. All other intersections would operate at LOS D or better.

*Comparison of Alternative 1 to the Requested No Action Alternative*
Compared to the Requested No Action Alternative, Alternative 1 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/15th Avenue (approximate reduction of 11%)
- California Street/15th Avenue (approximate reduction of 15%)

Alternative 1 results in no substantive change to the delay compared to the Requested No Action Alternative at the following intersection during the AM peak hour:

- California Street/14th Avenue

During the AM peak hour, Alternative 1 results in increased delays at the following intersections compared to the Requested No Action Alternative:

- Lake Street/17h Avenue (approximate increase of 2%)
- Lake Street/14th Avenue (approximate increase of more than 28%)
- Lake Street/Park Presidio Boulevard (approximate increase of 4%)
- Lake Street/Funston Avenue (approximate increase of 3%)

- California Street/Park Presidio Boulevard (approximate increase of 1%)

Compared to the Requested No Action Alternative, Alternative 1 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/15th Avenue (approximate reduction of 10%)
- California Street/15th Avenue (approximate reduction of 2%)

Alternative 1 results in no substantive changes to the delays compared to the Requested No Action Alternative at the following intersections during the PM peak hour:

- Lake Street/14th Avenue
- California Street/14th Avenue

During the PM peak hour, Alternative 1 results in increased delays at the following intersections compared to the Requested No Action Alternative:

- Lake Street/17th Avenue (approximate increase of 5%)
- Lake Street/Park Presidio Boulevard (approximate increase of 23%)
- Lake Street/Funston Avenue (approximate increase of 7%)
- California Street/Park Presidio Boulevard (approximate increase of less than 1%)

**Alternative 2: Wings Retained/Trust Revised Alternative** – As shown in Table 1, during both the AM and PM peak hours in 2025, Alternative 2 would yield the same intersection levels of service as Alternative 1 (the PTMP Alternative) with the exception of Lake Street/15th Avenue intersection. The LOS results at the Lake Street/15th Avenue intersection are expected to improve from LOS E (Alternative 1) to LOS D (Alternative 2) in the AM peak hour and from LOS D (Alternative 1) to LOS C (Alternative 2) in the PM peak hour.

*Comparison of Alternative 2 to Alternative 1*
Compared to Alternative 1, Alternative 2 results in reduced delays at six of the eight study intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 3%)
- Lake Street/15th Avenue (approximate reduction of 21%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 4%)
- Lake Street/Funston Avenue (approximate reduction of 3%)
- California Street/15th Avenue (approximate reduction of 5%)
- California Street/Park Presidio Boulevard (approximate reduction of 1%)



Alternative 2 results in no substantive change to the delay compared to Alternative 1 at the following intersections during the AM peak hour:

- Lake Street/14th Avenue
- California Street/14th Avenue

During the PM peak hour, Alternative 2 results in reduced delays at six of the eight study intersections compared to Alternative 1:

- Lake Street/17th Avenue (approximate reduction of 5%)
- Lake Street/15th Avenue (approximate reduction of 35%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 19%)
- Lake Street/Funston Avenue (approximate reduction of 7%)
- California Street/15th Avenue (approximate reduction of 14%)
- California Street/Park Presidio Boulevard (approximate reduction of less than 1%)

Alternative 2 results in no substantive changes to the delays compared to Alternative 1 at the following intersection during the PM peak hour:

- Lake Street/14th Avenue
- California Street/14th Avenue

*Comparison of Alternative 2 to the Requested No Action Alternative*
Compared to the Requested No Action Alternative, Alternative 2 results in reduced delays at five of the eight study intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 1%)
- Lake Street/15th Avenue (approximate reduction of 30%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 1%)
- Lake Street/Funston Avenue (approximate reduction of 1%)
- California Street/15th Avenue (approximate reduction of 19%)

Alternative 2 results in no substantive change to the delay compared to the Requested No Action Alternative at the following intersection during the AM peak hour:

- California Street/14th Avenue
- California Street/Park Presidio Boulevard

During the AM peak hour, Alternative 2 results in increased delay on the minor approaches of the following intersection compared to the Requested No Action Alternative:

- Lake Street/14th Avenue (approximate increase of more than 28%)

Compared to the Requested No Action Alternative, Alternative 2 results in reduced delays at five of the eight study intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 1%)
- Lake Street/15th Avenue (approximate reduction of 42%)
- Lake Street/Park Presidio Boulevard (approximate reduction of less than 1%)
- Lake Street/Funston Avenue (approximate reduction of 1%)
- California Street/15th Avenue (approximate reduction of 16%)

Alternative 2 results in no substantive changes to the delays compared to the Requested No Action Alternative at the following intersections during the PM peak hour:

- Lake Street/14th Avenue
- California Street/14th Avenue
- California Street/Park Presidio Boulevard

**Alternative 3: Wings Removed Alternative** – As shown in Table 1, during the AM peak hour in 2025, Alternative 3 would yield the same intersection levels of service as Alternative 1 with the exception of Lake Street/15th Avenue intersection, where its level of service is expected to improve from LOS E under Alternative 1 to LOS D under Alternative 3.

Similarly, as shown in Table 2, during the PM peak hour in 2025, Alternative 3 would yield the same levels of service as Alternative 1 with the exception of Lake Street/15th Avenue intersection, where its level of service is expected to improve from LOS D under Alternative 1 to LOS C under Alternative 3.

*Comparison of Alternative 3 to Alternative 2*

Compared to Alternative 2, Alternative 3 results in reduced delays at four of the eight study intersections during the AM peak hour:

- Lake Street/15th Avenue (approximate reduction of 1%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 1%)
- Lake Street/Funston Avenue (approximate reduction of 1%)
- California Street/15th Avenue (approximate reduction of 1%)

Alternative 3 results in no substantive change to the delay compared to Alternative 2 at the remaining study intersections during the AM peak hour:



- Lake Street/17th Avenue
- Lake Street/14th Avenue
- California Street/14th Avenue
- California Street/Park Presidio Boulevard

Compared to Alternative 2, Alternative 3 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/15th Avenue (approximate reduction of 3%)
- Lake Street/Park Presidio Boulevard (approximate reduction of less than 1%)

Alternative 3 results in no substantive changes to the delays compared to Alternative 2 at the following intersections during the PM peak hour:

- Lake Street/17th Avenue
- Lake Street/14th Avenue
- Lake Street/Funston Avenue
- California Street/14th Avenue
- California Street/Park Presidio Boulevard

During the PM peak hour, Compared to Alternative 2, Alternative 3 results in increased delay on the minor approaches of the following intersection:

- California Street/15th Avenue (approximate increase of 1%)

*Comparison of Alternative 3 to Alternative 1*

Compared to Alternative 1, Alternative 3 results in reduced delays at six of the eight study intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 3%)
- Lake Street/15th Avenue (approximate reduction of 21%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 5%)
- Lake Street/Funston Avenue (approximate reduction of 4%)
- California Street/15th Avenue (approximate reduction of 5%)
- California Street/Park Presidio Boulevard (approximate reduction of 1%)

Alternative 3 results in no substantive change to the delay compared to Alternative 1 at two of the eight study intersections during the AM peak hour:

- Lake Street/14th Avenue
- California Street/14th Avenue

Compared to Alternative 1, Alternative 3 results in reduced delays at six of the eight study intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 5%)
- Lake Street/15th Avenue (approximate reduction of 37%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 19%)
- Lake Street/Funston Avenue (approximate reduction of 7%)
- California Street/15th Avenue (approximate reduction of 13%)
- California Street/Park Presidio Boulevard (approximate reduction of less than 1%)

Alternative 3 results in no substantive change to the delay compared to Alternative 1 at the remaining two study intersections during the PM peak hour:

- Lake Street/14th Avenue
- California Street/14th Avenue

*Comparison of Alternative 3 to the Requested No Action Alternative*
Compared to the Requested No Action Alternative, Alternative 3 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 1%)
- Lake Street/15th Avenue (approximate reduction of 30%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 1 %)
- Lake Street/Funston Avenue (approximate reduction of 1%)
- California Street/15th Avenue (approximate reduction of 19%)

Alternative 3 results in no substantive change to the delay compared to the Requested No Action Alternative at the following intersections during the AM peak hour:

- California Street/14th Avenue
- California Street/Park Presidio Boulevard

During the AM peak hour, Alternative 3 results in increased delay at the following intersection compared to the Requested No Action Alternative:

- Lake Street/14th Avenue (approximate increase of more than 28%)



Compared to the Requested No Action Alternative, Alternative 3 results in reduced delays at five of the eight study intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 1%)
- Lake Street/15th Avenue (approximate reduction of 43%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 1%)
- Lake Street/Funston Avenue (approximate reduction of 1%)
- California Street/15th Avenue (approximate reduction of 15%)

Alternative 3 results in no substantive changes to the delays compared to the Requested No Action Alternative at the following intersections during the PM peak hour:

- Lake Street/14th Avenue
- California Street/14th Avenue
- California Street/Park Presidio Boulevard

**Alternative 4: Battery Caulfield Alternative** –As shown in Table 1, during the AM peak hour in 2025, Alternative 4 would yield the same intersection levels of service as Alternative 1 for all intersections with the exception of Lake Street/15th Avenue intersection. Its LOS is expected to improve from LOS E under Alternative 1 to LOS D under Alternative 4.

Similarly, as shown in Table 2, during the PM peak hour in 2025, Alternative 4 would yield the same levels of service as Alternative 1 with the exception of Lake Street/15th Avenue intersection, where its level of service is expected to improve from LOS D under Alternative 1 to LOS C under Alternative 4. All intersections under Alternative 4 are expected to operate with the same or less average delay per vehicle than Alternative 1 during both the AM and PM peak hours.

*Comparison of Alternative 4 to Alternative 3*
Compared to Alternative 3, Alternative 4 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 1%)
- Lake Street/15th Avenue (approximate reduction of 9%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 1%)
- Lake Street/Funston Avenue (approximate reduction of 1%)
- California Street/15th Avenue (approximate reduction of 1%)

Alternative 4 would result in no substantive change to the delay compared to Alternative 3 at the following intersections during the AM peak hour:

- Lake Street/14th Street
- California Street/14th Street
- California Street/Park Presidio Boulevard

Compared to Alternative 3, Alternative 4 results in reduced delays at five of the eight study intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 1%)
- Lake Street/15th Avenue (approximate reduction of 3%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 2%)
- Lake Street/Funston Avenue (approximate reduction of 1%)
- California Street/15th Avenue (approximate reduction of 1%)

Alternative 4 results in no substantive change to the delay compared to Alternative 3 at the following intersections during the PM peak hour:

- Lake Street/14th Street
- California Street/14th Street
- California Street/Park Presidio Boulevard

*Comparison of Alternative 4 to Alternative 2*
Compared to Alternative 2, Alternative 4 results in reduced delays at five of the eight study intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 1%)
- Lake Street/15th Avenue (approximate reduction of 9%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 1%)
- Lake Street/Funston Avenue (approximate reduction of 1%)
- California Street/15th Avenue (approximate reduction of 2%)

Alternative 4 results in no substantive change to the delay compared to Alternative 2 at the following intersections during the AM peak hour:

- Lake Street/14th Street
- California Street/14th Street



- California Street/Park Presidio Boulevard

Compared to Alternative 2, Alternative 4 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 1%)
- Lake Street/15th Avenue (approximate reduction of 6%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 3%)
- Lake Street/Funston Avenue (approximate reduction of 1%)

Alternative 4 results in no substantive change to the delay compared to Alternative 2 at the following intersections during the PM peak hour:

- Lake Street/14th Street
- California Street/14th Street
- California Street/Park Presidio Boulevard
- California Street/15th Avenue

*Comparison of Alternative 4 to Alternative 1*
Compared to Alternative 1, Alternative 4 would result in reduced delays at six of the eight study intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 4%)
- Lake Street/15th Avenue (approximate reduction of 28%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 6%)
- Lake Street/Funston Avenue (approximate reduction of 4%)
- California Street/15th Avenue (approximate reduction of 6%)
- California Street/Park Presidio Boulevard (approximate reduction of 1%)

Alternative 4 would result in no substantive change to the delay compared to Alternative 1 at the following intersection during the AM peak hour:

- Lake Street/14th Street
- California Street/14th Street

Compared to Alternative 1, Alternative 4 would result in reduced delays at the remaining study intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 6%)

- Lake Street/15th Avenue (approximate reduction of 39%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 21%)
- Lake Street/Funston Avenue (approximate reduction of 8%)
- California Street/15th Avenue (approximate reduction of 14%)
- California Street/Park Presidio Boulevard (approximate reduction of less than 1%)

Alternative 4 would result in no substantive change to the delay compared to Alternative 1 at the remaining study intersections during the PM peak hour:

- Lake Street/14th Street
- California Street/14th Street

*Comparison of Alternative 4 to the Requested No Action Alternative*
Compared to the Requested No Action Alternative, Alternative 4 would result in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 1%)
- Lake Street/15th Avenue (approximate reduction of 36%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 2%)
- Lake Street/Funston Avenue (approximate reduction of 2%)
- California Street/15th Avenue (approximate reduction of 20%)

Alternative 4 would result in no substantive change to the delay compared to the Requested No Action Alternative at the following intersection during the AM peak hour:

- California Street/14th Avenue
- California Street/Park Presidio Boulevard

During the AM peak hour, Alternative 4 would result in increased delays at the following intersection compared to the Requested No Action Alternative:

- Lake Street/14th Avenue (approximate increase of more than 28%)

Compared to the Requested No Action Alternative, Alternative 4 would result in reduced delays at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 1%)
- Lake Street/15th Avenue (approximate reduction of 45%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 3%)



- Lake Street/Funston Avenue (approximate reduction of 2%)
- California Street/15th Avenue (approximate reduction of 16%)

Alternative 4 would result in no substantive changes to the delays compared to the Requested No Action Alternative at the following intersections during the PM peak hour:

- Lake Street/14th Avenue
- California Street/14th Avenue
- California Street/Park Presidio Boulevard

### 2.2.2 Park Presidio Boulevard Access Variant with Inbound Only Traffic at 14th and 15th Avenue Gates

Tables 3 and 4 present the results of the intersection LOS analysis for the 2025 weekday AM and PM peak hour conditions for the four proposed land use build alternatives (Alternatives 1, 2, 3 and 4) assuming a new connection to Park Presidio Boulevard to and from the PHSH site north of Lake Street. The new intersection would allow traffic leaving the PHSH site to turn left or right on Highway 1, and allow southbound traffic on Highway 1 to enter the PHSH site directly from Highway 1. Both the 14th and 15th Avenue Gates would be open to inbound (northbound) traffic only.

**Table 3**
**Intersection Levels of Service – Weekday AM Peak Hour**
**Year 2025**
**Variant: New Park Presidio Blvd. Access with Inbound Only Traffic at 14th and 15th Ave. Gates**

| Intersection | Traffic Control Device | Alt. 1 | | Alt. 2 | | Alt. 3 | | Alt. 4 | |
|---|---|---|---|---|---|---|---|---|---|
| | | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS |
| Lake St/ 17th Ave [2] | 2-Way Stop | 20.8 | C | 20.3 | C | 20.3 | C | 20.2 | C |
| Lake St/ 15th Ave | 4-Way Stop | 27.0 | D | 23.6 | C | 23.0 | C | 22.6 | C |
| Lake St/ 14th Ave [2] | 2-Way Stop | **>50** | **F** | **43.7** | **E** | **40.3** | **E** | **39.1** | **E** |
| Lake St/ Park Presidio Blvd. | Traffic Signal | 20.9 | C | 20.2 | C | 20.3 | C | 19.9 | B |
| Lake St/ Funston Ave [2] | 2-Way Stop | 23.9 | C | 23.3 | C | 23.2 | C | 23.1 | C |
| California St/ 15th Ave [2] | 2-Way Stop | 22.4 | C | 20.2 | C | 19.9 | C | 19.8 | C |
| California St/ 14th Ave [2] | 2-Way Stop | **>50** | **F** | **>50** | **F** | **>50** | **F** | **>50** | **F** |
| California St/ Park Presidio Blvd. | Traffic Signal | 20.5 | C | 20.5 | C | 20.5 | C | 20.5 | C |
| New Alternative Access/ Park Presidio Blvd. | Traffic Signal | 5.5 | A | 5.1 | A | 5.1 | A | 5.0 | A |

Source: Wilbur Smith Associates – March 2006.
Notes:
[1] Delay presented in seconds per vehicle based on the 2000 HCM methodology.
[2] LOS and delay shown for worst minor stop-controlled approach. Major approach is uncontrolled and without delay.



**Table 4**
**Intersection Levels of Service – Weekday PM Peak Hour**
**Year 2025**
**Variant: New Park Presidio Blvd. Access with Inbound Only Traffic at 14th and 15th Ave. Gates**

| Intersection | Traffic Control Device | Alt. 1 | | Alt. 2 | | Alt. 3 | | Alt. 4 | |
|---|---|---|---|---|---|---|---|---|---|
| | | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS |
| Lake St/ 17th Ave [2] | 2-Way Stop | 21.8 | C | 20.7 | C | 20.6 | C | 16.1 | C |
| Lake St/ 15th Ave | 4-Way Stop | 20.0 | C | 17.3 | C | 17.2 | C | 16.9 | C |
| Lake St/ 14th Ave [2] | 2-Way Stop | **>50** | **F** | **>50** | **F** | **>50** | **F** | **>50** | **F** |
| Lake St/ Park Presidio Blvd. | Traffic Signal | 41.5 | D | 35.9 | D | 35.3 | D | 35.3 | D |
| Lake St/ Funston Ave [2] | 2-Way Stop | 23.3 | C | 22.6 | C | 22.6 | C | 22.5 | C |
| California St/ 15th Ave [2] | 2-Way Stop | 28.8 | D | 26.1 | D | 26.2 | D | 25.8 | D |
| California St/ 14th Ave [2] | 2-Way Stop | **>50** | **F** | **>50** | **F** | **>50** | **F** | **>50** | **F** |
| California St/ Park Presidio Blvd. | Traffic Signal | 47.9 | D | 43.6 | D | 43.2 | D | 42.9 | D |
| New Alternative Access/ Park Presidio Blvd. | Traffic Signal | 16.3 | B | 7.4 | A | 6.9 | A | 6.8 | A |

Source: Wilbur Smith Associates – March 2006.
Notes:
[1] Delay presented in seconds per vehicle based on the 2000 HCM methodology.
[2] LOS and delay shown for worst minor stop-controlled approach. Major approach is uncontrolled and without delay.

**Alternative 1: PTMP Alternative** – For the Park Presidio Boulevard Access variant, Tables 3 and 4 show that seven intersections would operate at LOS D or better under both AM and PM peak hour conditions. During both the AM and PM peak hours, the minor street approaches to the two-way stop-controlled intersections of Lake Street/14th Avenue and California Street/14th would operate at LOS F. All other intersections would operate at LOS D or better.

*Comparison of Alternative 1 to the Requested No Action Alternative*
Compared to the Requested No Action Alternative, Alternative 1 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/15th Avenue (approximate reduction of 38%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 5%)
- California Street/15th Avenue (approximate reduction of 9%)

Alternative 1 results in no substantive change to the delay compared to the Requested No Action Alternative at one study intersection during the AM peak hour:

- California Street/14th Avenue

During the AM peak hour, Alternative 1 results in increased delays at the following intersections compared to the Requested No Action Alternative:

- Lake Street/17th Avenue (approximate increase of 0.5%)
- Lake Street/14th Avenue (approximate increase of 81%)
- Lake Street/Funston Avenue (approximate increase of 16%)
- California Street/14th Avenue
- California Street/Park Presidio Boulevard (approximate increase of 0.5%)

Compared to the Requested No Action Alternative, Alternative 1 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/15th Avenue (approximate reduction of 36%)
- California Street/15th Avenue (approximate reduction of 4%)

Alternative 1 results in no substantive change to the delay compared to the Requested No Action Alternative at one study intersection during the AM peak hour:

- California Street/14th Avenue

During the PM peak hour, Alternative 1 results in increased delays at the following intersections compared to the Requested No Action Alternative:

- Lake Street/17th Avenue (approximate increase of 4%)
- Lake Street/14th Avenue (approximate increase of more than 28%)
- Lake Street/Park Presidio Boulevard (approximate increase of 4%)
- Lake Street/Funston Avenue (approximate increase of 21%)
- California Street/Park Presidio Boulevard (approximate increase of 14%)

**Alternative 2: Wings Retained/Trust Revised Alternative** – As shown in Table 3, in the AM peak hour in 2025, the minor approaches to the two-way stop-controlled intersections of Lake Street/14th Avenue and California Street/14th Avenue would operate at LOS E and LOS F, respectively under Alternative 2. As Table 4 indicates, in the PM peak hour in 2025, levels of service for Alternative 2 would be the same as under Alternative 1, except for the intersection of New Alternative Access/Park Presidio Boulevard which would operate at LOS A rather than LOS B.



*Comparison of Alternative 2 to Alternative 1*

Compared to Alternative 1, Alternative 2 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 2%)
- Lake Street/15th Avenue (approximate reduction of 13%)
- Lake Street/14th Avenue (approximate reduction of more than 13%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 3%)
- Lake Street/Funston Avenue (approximate reduction of 3%)
- California Street/15th Avenue (approximate reduction of 10%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 7%)

Alternative 2 results in no substantive change to the delay compared to Alternative 1 at the following intersections during the AM peak hour:

- California Street/Park Presidio Boulevard
- California Street/14th Avenue

Compared to Alternative 1, Alternative 2 results in reduced delays at five of the study intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 5%)
- Lake Street/15th Avenue (approximate reduction of 14%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 14%)
- Lake Street/Funston Avenue (approximate reduction of 3%)
- California Street/15th Avenue (approximate reduction of 9%)

Alternative 2 would result in no substantive change to the delay compared to Alternative 1 at the following intersections in the PM peak hour:

- Lake Street/14th Avenue
- California Street/14th Avenue
- California Street/Park Presidio Boulevard (approximate reduction of 9%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 55%)

*Comparison of Alternative 2 to the Requested No Action Alternative*

Compared to the Requested No Action Alternative, Alternative 2 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 2%)
- Lake Street/15th Avenue (approximate reduction of 46%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 8%)
- California Street/15th Avenue (approximate reduction of 18%)

Alternative 2 results in no substantive change to the delay compared to the Requested No Action Alternative at one study intersection during the AM peak hour.

- California Street/14th Avenue

During the AM peak hour, Alternative 2 results in increased delays at the following intersections compared to the Requested No Action Alternative:

- Lake Street/14th Avenue (approximate increase of 12%)
- Lake Street/Funston Avenue (approximate increase of 13%)
- California Street/ Park Presidio Boulevard (approximate increase of 0.5%)

Compared to the Requested No Action Alternative, Alternative 2 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 1%)
- Lake Street/15th Avenue (approximate reduction of 45%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 10%)
- California Street/15th Avenue (approximate reduction of 13%)

During the PM peak hour, Alternative 2 results in increased delays at the following intersections compared to the Requested No Action Alternative:

- Lake Street/Funston Avenue (approximate increase of 18%)
- California Street/Park Presidio Boulevard (approximate increase of 4%)

Alternative 2 results in no substantive change to the delay compared to the Requested No Action Alternative at the following study intersections during the AM peak hour:

- Lake Street/14th Avenue
- California Street/14th Avenue



**Alternative 3: Wings Removed Alternative** – As Table 3 indicates, in the AM peak hour in 2025, the levels of service for Alternative 3 would be the same as with Alternative 2. As shown in Table 4, the PM peak hour levels of service under Alternative 3 would also be the same as with Alternative 2.

*Comparison of Alternative 3 to Alternative 2*
Compared to Alternative 2, Alternative 3 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/15th Avenue (approximate reduction of 3%)
- Lake Street/14th Avenue (approximate reduction of 8%)
- Lake Street/Funston Avenue (approximate reduction of less than 1%)
- California Street/15th Avenue (approximate reduction of 2%)

Alternative 3 results in no substantive change to the delay compared to Alternative 2 at the following intersections during the AM peak hour:

- Lake Street/17th Avenue
- California Street/Park Presidio Boulevard
- New Alternative Access/Park Presidio Boulevard
- California Street/14th Avenue

During the AM peak hour, Alternative 3 results in increased delays at the following study intersection compared to Alternative 2:

- Lake Street/Park Presidio Boulevard (approximate increase of less than 1%)

Compared to Alternative 2, Alternative 3 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of less than 1%)
- Lake Street/15th Avenue (approximate reduction of 1%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 2%)
- California Street/Park Presidio Boulevard (approximate reduction of less than 1%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 7%)

Alternative 3 results in no substantive changes to the delays compared to Alternative 2 at the following intersections during the PM peak hour:

- Lake Street/Funston Avenue

- Lake Street/14th Avenue
- California Street/14th Avenue

During the PM peak hour, Alternative 3 results in increased delays at the following study intersection compared to Alternative 2:

- California Street/15th Avenue (approximate increase of less than 1%)

*Comparison of Alternative 3 to Alternative 1*
Compared to Alternative 1, Alternative 3 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 2%)
- Lake Street/15th Avenue (approximate reduction of 15%)
- Lake Street/14th Avenue (approximate reduction of more than 19%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 3%)
- Lake Street/Funston Avenue (approximate reduction of 3%)
- California Street/15th Avenue (approximate reduction of 11%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 7%)

Alternative 3 results in no substantive change to the delay compared to Alternative 1 at the following intersections during the AM peak hour:

- California Street/Park Presidio Boulevard
- California Street/14th Avenue

Compared to Alternative 1, Alternative 3 results in reduced delays at seven of the study intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 6%)
- Lake Street/15th Avenue (approximate reduction of 14%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 15%)
- Lake Street/Funston Avenue (approximate reduction of 3%)
- California Street/15th Avenue (approximate reduction of 9%)
- California Street/Park Presidio Boulevard (approximate reduction of 10%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 58%)



Alternative 3 would result in no substantive change in delay compared to Alternative 1at the following intersections during the PM peak hour:

- Lake Street/14th Avenue
- California Street/14th Avenue

*Comparison of Alternative 3 to the Requested No Action Alternative*
Compared to the Requested No Action Alternative, Alternative 3 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 2%)
- Lake Street/15th Avenue (approximate reduction of 47%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 8%)
- California Street/15th Avenue (approximate reduction of 19%)

Alternative 3 results in no substantive change to the delay compared to the Requested No Action Alternative at one study intersection during the AM peak hour.

- California Street/14th Avenue

During the AM peak hour, Alternative 3 results in increased delays at the following intersections compared to the Requested No Action Alternative:

- Lake Street/14th Avenue (approximate increase of 3%)
- Lake Street/Funston Avenue (approximate increase of 13%)
- California Street/ Park Presidio Boulevard (approximate increase of less than 1%)

Compared to the Requested No Action Alternative, Alternative 3 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 2%)
- Lake Street/15th Avenue (approximate reduction of 45%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 11%)
- California Street/15th Avenue (approximate reduction of 13%)

Alternative 3 results in no substantive change to the delay compared to the Requested No Action Alternative at two of the study intersections during the PM peak hour:

- Lake Street/14th Avenue
- California Street/14th Avenue

During the PM peak hour, Alternative 3 results in increased delays at the following intersections compared to the Requested No Action Alternative:

- Lake Street/Funston Avenue (approximate increase of 18%)
- California Street/Park Presidio Boulevard (approximate increase of 3%)

**Alternative 4: Battery Caulfield Alternative** – As shown in Table 3, in the AM peak hour in 2025, levels of service with Alternative 4 would be the same as with Alternatives 2 and 3, except for the intersection of Lake Street/Park Presidio Boulevard which would operate at LOS B rather than LOS C. In the PM peak hour in 2025, all intersections would operate under Alternative 4 at the same levels of service as with Alternatives 2 and 3.

*Comparison of Alternative 4 to Alternative 3*
Compared to Alternative 3, Alternative 4 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of less than 1%)
- Lake Street/15th Avenue (approximate reduction of 2%)
- Lake Street/14th Avenue (approximate reduction of 3%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 2%)
- Lake Street/Funston Avenue (approximate reduction of less than 1%)
- California Street/15th Avenue (approximate reduction of less than 1%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 2%)

Alternative 4 results in no substantive change to the delays compared to Alternative 3 at the following intersections during the AM peak hour:

- California Street/Park Presidio Boulevard
- California Street/14th Avenue

Compared to Alternative 3, Alternative 4 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 22%)
- Lake Street/15th Avenue (approximate reduction of 2%)
- Lake Street/Funston Avenue (approximate reduction of less than 1%)
- California Street/15th Avenue (approximate reduction of 2%)
- California Street/Park Presidio Boulevard (approximate reduction of less than 1%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 1%)



Alternative 4 results in no substantive changes to the delays compared to Alternative 3 at the following intersections during the PM peak hour:

- Lake Street/Park Presidio Boulevard
- Lake Street/14th Avenue
- California Street/14th Avenue

*Comparison of Alternative 4 to Alternative 2*
Compared to Alternative 2, Alternative 4 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of less than 1%)
- Lake Street/15th Avenue (approximate reduction of 4%)
- Lake Street/14th Avenue (approximate reduction of 11%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 2%)
- Lake Street/Funston Avenue (approximate reduction of less than 1%)
- California Street/15th Avenue (approximate reduction of 2%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 2%)

Alternative 4 results in no substantive change to the delay compared to Alternative 2 at the following intersections during the AM peak hour:

- California Street/Park Presidio Boulevard
- California Street/14th Avenue\

Compared to Alternative 2, Alternative 4 results in reduced delays at seven of the study intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 22%)
- Lake Street/15th Avenue (approximate reduction of 2%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 2%)
- Lake Street/Funston Avenue (approximate reduction of less than 1%)
- California Street/15th Avenue (approximate reduction of 1%)
- California Street/Park Presidio Boulevard (approximate reduction of 2%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 8%)

During the PM peak hour, Alternative 4 would result in no substantive change in delays at the two study intersections compared to Alternative 2:

- Lake Street/14th Avenue
- California Street/14th Avenue

*Comparison of Alternative 4 to Alternative 1*
Compared to Alternative 1, Alternative 4 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 3%)
- Lake Street/15th Avenue (approximate reduction of 16%)
- Lake Street/14th Avenue (approximate reduction of more than 22%)
- Lake Street/Park Presidio Boulevard (approximate reduction of less than 5%)
- Lake Street/Funston Avenue (approximate reduction of 3%)
- California Street/15th Avenue (approximate reduction of 12%)
- California Street/14th Avenue (approximate reduction of 29%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 9%)

Alternative 4 results in no substantive change to the delays compared to Alternative 1 at the following intersections during the AM peak hour:

- California Street/Park Presidio Boulevard
- California Street/14th Avenue

Compared to Alternative 1, Alternative 4 results in reduced delays at most study intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 26%)
- Lake Street/15th Avenue (approximate reduction of 15%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 15%)
- Lake Street/Funston Avenue (approximate reduction of 3%)
- California Street/15th Avenue (approximate reduction of 10%)
- California Street/Park Presidio Boulevard (approximate reduction of 10%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 58%)

During the PM peak hour, Alternative 4 would result in no substantive change in delays at two study intersections compared to Alternative 1.



- Lake Street/14th Avenue
- California Street/14th Avenue

*Comparison of Alternative 4 to the Requested No Action Alternative*
Compared to the Requested No Action Alternative, Alternative 4 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 3%)
- Lake Street/15th Avenue (approximate reduction of 48%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 10%)
- California Street/15th Avenue (approximate reduction of 19%)

Alternative 4 results in no substantive change to the delay compared to the Requested No Action Alternative at one of the study intersection during the AM peak hour:

- California Street/14th Avenue

During the AM peak hour, Alternative 4 results in increased delays at the following intersections compared to the Requested No Action Alternative:

- Lake Street/14th Avenue (approximate increase of less than 1%)
- Lake Street/Funston Avenue (approximate increase of 12%)
- California Street/Park Presidio Boulevard (approximate increase of less than 1%)

Compared to the Requested No Action Alternative, Alternative 4 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 23%)
- Lake Street/15th Avenue (approximate reduction of 48%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 11%)
- California Street/15th Avenue (approximate reduction of 14%)

During the PM peak hour, Alternative 4 results in increased delays at the following intersections compared to the Requested No Action Alternative:

- Lake Street/Funston Avenue (approximate increase of 17%)
- California Street/ Park Presidio Boulevard (approximate increase of 2%)

Alternative 4 results in no substantive change to the delays compared to the Requested No Action Alternative at two study intersections during the PM peak hour:

- Lake Street/14th Avenue
- California Street/14th Avenue

### 2.3 Traffic Operations and Safety Considerations

Traffic conditions on Park Presidio Boulevard and in the surrounding residential neighborhood would vary across alternatives. Tables 5 and 6 show anticipated peak hour traffic volumes through the 14th and 15th Avenue Gates for each of the alternatives with and without the Park Presidio Boulevard Access Variant. Future traffic volumes through the 14th and 15th Avenue Gates would relate directly to the level of comfort and safety concerns of the residents of the surrounding neighborhood.

#### 2.3.1 One-Way Couplet at 14th and 15th Avenue Gates

**Requested No Action Alternative** – The Requested No Action Alternative is expected to result in approximately 310 and 330 vehicles per hour traveling through the 15th Avenue Gate in the AM and PM peak hours, respectively. A PM peak hour volume of 330 vehicles is about 136% greater than the PM peak hour volume of 140 vehicles per hour observed in October 2005.

**Table 5**
**Comparison of Peak Hour Traffic Volumes[1] through 14th /15th Avenue Gates**
**Year 2025**

| Land Use Alternative | AM Peak Hour | PM Peak Hour |
|---|---|---|
| Requested No Action Alternative | 310[2] | 330[2] |
| Alternative 1 | 420 | 590 |
| Alternative 2 | 300 | 310 |
| Alternative 3 | 280 | 310 |
| Alternative 4 | 250 | 270 |

Source: Wilbur Smith Associates – February 2006.
Note:
1. Forecasted 2025 gate volumes have been rounded to the nearest 10.
2. Under the Requested No Action Alternative, all traffic in and out of the Presidio would use the 15th Avenue Gate; the 14th Avenue Gate would remain closed.

**Alternative 1: PTMP Alternative** –Alternative 1 is expected to result in approximately 420 and 590 vehicles per hour traveling through the 14th and 15th Avenue Gates in the AM and PM peak hours, respectively. A PM peak hour volume of 590 vehicles is about four times the PM peak hour volume of 140 vehicles per hour observed in October 2005. Compared to the Requested No Action Alternative, Alternative 1 would generate approximately 35 percent more trips through the gates during the AM peak hour and 79 percent more trips through the gates during the PM peak hour.



**Alternative 2: Wings Retained/Trusted Revised Alternative** – Alternative 2 would result in 47 percent fewer PM peak hour vehicle trips through the 14th and 15th Avenue Gates than Alternative 1, and approximately 6 percent fewer trips during the PM peak hour compared to the Requested No Action Alternative. During the AM peak hour, Alternative 2 would generate 29 percent fewer vehicle trips through the gates than Alternative 1, and approximately 3 percent fewer vehicle trips through the gates than the Requested No Action Alternative. The reduction in traffic volume through the 14th and 15th Avenue Gates would result in less traffic on nearby residential neighborhood streets, and therefore could result in a higher level of comfort, quality of life benefits, and safer conditions for neighborhood residents.

**Alternative 3: Wings Removed Alternative** – Compared to Alternative 2, Alternative 3 would result in 7 percent fewer trips through the 14th and 15th Avenue Gates during the AM peak hour, respectively. When compared to Alternative 1, Alternative 3 would result in approximately 33 percent and 47 percent fewer vehicle trips through the 14th and 15th Avenue Gates during the AM and PM peak hours, respectively; and approximately 10 and 6 percent fewer vehicle trips through the Gates during the AM and PM peak hours, respectively compared to the Requested No Action Alternative.

**Alternative 4: Battery Caulfield Alternative** – Alternative 4 would generate 19 and 18 percent fewer vehicle trips through the 14th and 15th Avenue Gates in the AM and PM peak hours than the Requested No Action Alternative, respectively; 40 and 54 percent fewer vehicle trips through the 14th and 15th Avenue Gates in the AM and PM peak hours than Alternative 1, respectively; 17 and 13 percent fewer vehicle trips through the 14th and 15th Avenue Gates in both the AM and PM peak hours than Alternative 2 respectively ; and 11 and 13 percent fewer vehicle trips through the 14th and 15th Avenue Gates in the AM and PM peak hours, respectively, than Alternative 3.

#### 2.3.2 Park Presidio Boulevard Access Variant with Inbound Only Traffic at 14th and 15th Avenue Gates

**Requested No Action Alternative** – The Requested No Action Alternative is expected to result in approximately 310 and 330 vehicles per hour traveling through the 15th Avenue Gate in the AM and PM peak hours, respectively. A PM peak hour volume of 330 vehicles is about 136% greater than the PM peak hour volume of 140 vehicles per hour observed in October 2005.

**Table 6**
**Comparison of Peak Hour Traffic Volumes[1] through 14th /15th Avenue Gates**
**Year 2025 (Park Presidio Boulevard Access Variant)**

| Land Use Alternative | AM Peak Hour | PM Peak Hour |
|---|---|---|
| Requested No Action Alternative | 310[2] | 330[2] |
| Alternative 1 | 200 | 220 |
| Alternative 2 | 140 | 140 |
| Alternative 3 | 130 | 140 |
| Alternative 4 | 120 | 130 |

Source: Wilbur Smith Associates – April 2006.
Note:
1. Forecasted 2025 gate volumes have been rounded to the nearest 10.
2. Under the Requested No Action Alternative, all traffic in and out of the Presidio would use the 15th Avenue Gate; the 14th Avenue Gate would remain closed.

**Alternative 1: PTMP Alternative** –Alternative 1 is expected to result in approximately 200 and 220 vehicles per hour traveling through the 14th and 15th Avenue Gates in the AM and PM peak hours, respectively. A PM peak hour volume of 220 vehicles is about one and a half times the PM peak hour volume of 140 vehicles per hour observed in October 2005. Compared to the Requested No Action Alternative, Alternative 1 would generate approximately 35 percent fewer trips through the gates during the AM peak hour and 33 percent fewer trips through the gates during the PM peak hour.

**Alternative 2: Wings Retained/Trusted Revised Alternative** – Alternative 2 would result in 36 percent fewer PM peak hour vehicle trips through the 14th and 15th Avenue Gates than Alternative 1, and approximately 57 percent fewer trips during the PM peak hour compared to the Requested No Action Alternative. During the AM peak hour, Alternative 2 would generate 30 percent fewer vehicle trips through the gates than Alternative 1, and approximately 54 percent fewer vehicle trips through the gates than the Requested No Action Alternative. The reduction in traffic volume through the 14th and 15th Avenue Gates would result in less traffic on nearby residential neighborhood streets, and therefore could result in a higher level of comfort, quality of life benefits, and safer conditions for neighborhood residents.

**Alternative 3: Wings Removed Alternative** – Compared to Alternative 2, Alternative 3 would result in 7 percent fewer trips through the 14th and 15th Avenue Gates during the AM peak hour, respectively. When compared to Alternative 1, Alternative 3 would result in approximately 35 percent and 36 percent fewer vehicle trips through the 14th and 15th Avenue Gates during the AM and PM peak hours, respectively; and approximately 58 and 60 percent fewer vehicle trips through the Gates during the AM and PM peak hours, respectively, compared to the Requested No Action Alternative.



**Alternative 4: Battery Caulfield Alternative** – Alternative 4 would generate 61 percent fewer vehicle trips through the 14th and 15th Avenue Gates in the AM and PM peak hours than the Requested No Action Alternative; 40 percent fewer vehicle trips through the 14th and 15th Avenue Gates in the AM and PM peak hours than Alternative 1, respectively; 14 and 7 percent fewer vehicle trips through the 14th and 15th Avenue Gates in both the AM and PM peak hours than Alternative 2 respectively ; and 7 percent fewer vehicle trips through the 14th and 15th Avenue Gates in the AM and PM peak hours, respectively, than Alternative 3.

## 3. TRANSIT SERVICE

The land uses associated with the PHSH alternatives would generate transit trips on several Bay Area transit providers, and would most affect the three transit providers that directly serve the project site, the San Francisco Municipal Railway (Muni), Golden Gate Transit (GGT) and the Presidio's internal shuttle (PresidiGo). Trips to and from the project site expected to be made by transit were estimated based on the expected mode split discussed in Technical Memorandum No. 2, and then assigned to transit routes based on the geographic distribution of origins and destinations, also discussed in Technical Memorandum No. 2. Because some transit passengers may use more than one transit mode (e.g., transfer from Muni to PresidiGo), the sum of transit trips made on each transit provider may exceed the total number of people choosing transit to travel to/from the PHSH district. Table 7 summarizes the expected AM peak hour and PM peak hour transit trips to and from the project site by transit service provider for each alternative. Tables 8, 9, 10 and 11 summarize the AM and PM peak hour ridership on Muni, Golden Gate Transit and PresidiGo for all trips to and from the Presidio, including the PHSH district.

Under Year 2025 conditions, the majority of Muni lines will have sufficient capacity to accommodate all project alternatives; however, forecast ridership on some Muni lines will exceed capacity unless Muni expands service, without or with the additional ridership associated with the PHSH project alternatives. During the AM peak hour under Year 2025 conditions, the PHSH alternatives will contribute less than 2% to the total ridership on the Muni routes anticipated to exceed capacity, and between 1% and 11% to the total ridership during the PM peak hour. GGT Route 10 is not expected to exceed capacity under Year 2025 conditions with any of the alternatives. The future MUNI analysis does not assume an increase in peak hour capacity between 2006 and 2025. However, both Muni and GGT periodically assess system efficiency and capacity, and will generally modify or expand service to meet ridership demands. Detailed transit ridership tables are provided in Appendix B.



**Table 7**
**Peak Hour Transit Trips to/from Project Site by Service Provider and Alternative**
**Year 2025**

| Time Period and Service Provider | Requested No Action Alternative | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 |
|---|---|---|---|---|---|
| **AM Peak Hour** | | | | | |
| S.F. Muni | 35 | 90 | 50 | 42 | 29 |
| Golden Gate Transit | 4 | 10 | 5 | 4 | 3 |
| PresidiGo | 14 | 44 | 18 | 14 | 11 |
| **PM Peak Hour** | | | | | |
| S.F. Muni | 38 | 169 | 55 | 49 | 35 |
| Golden Gate Transit | 4 | 18 | 6 | 5 | 4 |
| PresidiGo | 15 | 78 | 20 | 17 | 14 |

Source: Wilbur Smith Associates – February 2006.

**Table 8**
**Year 2025 Muni Cumulative Passenger Loads and Load Factors**
**AM Peak Hour**

| Line | Direction | Maximum Load Point | Number of Passengers | | | | | Average Load Factor | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Requested No Action | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Requested No Action | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 |
| 1 | to Howard/Main | Clay/Powell | 1,129 | 1,133 | 1,132 | 1,132 | 1,130 | 130% | 131% | 131% | 131% | 130% |
| | to Geary/33rd | Sacramento/Polk | 477 | 496 | 478 | 473 | 471 | 58% | 61% | 58% | 58% | 58% |
| 1AX | to Davis/Pine | California/Park Presidio | 414 | 419 | 418 | 418 | 416 | 117% | 119% | 118% | 118% | 118% |
| | to Geary/33rd | n.a. | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% | 0% |
| 1BX | to Davis/Pine | California/Fillmore | 805 | 810 | 809 | 809 | 806 | 114% | 115% | 114% | 114% | 114% |
| | to Park Presidio/California | n.a. | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% | 0% |
| 28 | to Fort Mason | 19th Ave/Lincoln | 361 | 365 | 364 | 364 | 362 | 86% | 87% | 87% | 87% | 86% |
| | to Daly City BART | 19th Ave/Sloat | 266 | 274 | 266 | 264 | 264 | 70% | 72% | 70% | 70% | 70% |
| 28L | to Park Presidio/ California | 19th Ave/Lincoln | 216 | 220 | 219 | 219 | 217 | 91% | 93% | 93% | 93% | 92% |
| | to Daly City BART | 19th Ave/Sloat | 180 | 189 | 180 | 178 | 178 | 54% | 57% | 55% | 54% | 54% |

Source: Wilbur Smith Associates – February 2006.
Notes:
1. n.a. – Not applicable; Indicates that no runs are made on that route in that direction during that particular time period.
2. Peak hour capacity is based on the Muni Bus and Metro FY 2004-2005 Weekday Conditions. It assumes an appreciable number of standees per vehicle (somewhere between 60% and 80% of the number of seated passengers, depending on the specific transit vehicle configuration) and may not include the effects of missed or late runs.
3. Peak hour ridership is assumed to be 60% of the two-hour peak period ridership.
4. The 1-California line operates at an eight-minute headway west of Fillmore Street and at a three-minute headway east of Fillmore Street. The peak hour loads correspond to maximum load points located east of Fillmore Street.



**Table 9**
**Year 2025 Muni Cumulative Passenger Loads and Load Factors**
**PM Peak Hour**

| Line | Direction | Maximum Load Point | Number of Passengers | | | | | Average Load Factor | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Requested No Action | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Requested No Action | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 |
| 1 | to Howard/Main | Clay/Powell | 754 | 786 | 755 | 752 | 749 | 59% | 62% | 59% | 59% | 59% |
| | to Geary/33rd | Sacramento/Polk | 1,276 | 1,289 | 1,278 | 1,278 | 1,277 | 109% | 110% | 109% | 109% | 109% |
| 1AX | to Davis/Pine | n.a. | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% | 0% |
| | to Geary/33rd | California/Park Presidio | 267 | 284 | 270 | 270 | 268 | 91% | 96% | 92% | 92% | 91% |
| 1BX | to Davis/Pine | n.a. | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% | 0% |
| | to Park Presidio/California | California/Fillmore | 343 | 360 | 346 | 346 | 344 | 103% | 108% | 104% | 104% | 103% |
| 28 | to Fort Mason | 19th Ave/Lincoln | 313 | 341 | 315 | 312 | 310 | 117% | 128% | 118% | 117% | 116% |
| | to Daly City BART | 19th Ave/Sloat | 432 | 455 | 437 | 437 | 434 | 142% | 149% | 143% | 143% | 142% |
| 28L | to Park Presidio/ California | n.a. | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% | 0% |
| | to Daly City BART | n.a. | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% | 0% |

Source: Wilbur Smith Associates – February 2006.
Notes:
1. n.a. – Not applicable; Indicates that no runs are made on that route in that direction during that particular time period.
2. Peak hour capacity is based on the Muni Bus and Metro FY 2004-2005 Weekday Conditions. It assumes an appreciable number of standees per vehicle (somewhere between 60% and 80% of the number of seated passengers, depending on the specific transit vehicle configuration) and may not include the effects of missed or late runs.
3. Peak hour ridership is assumed to be 60% of the two-hour peak period ridership.
4. The 1-California line operates at an eight-minute headway west of Fillmore Street and at a three-minute headway east of Fillmore Street. The peak hour loads correspond to maximum load points located east of Fillmore Street.

**Table 10**
**Route 10 Golden Gate Transit Bus Cumulative Passenger Loads and Load Factors**
**Year 2025**

| Time Period | Number of Passengers | | | | | Average Load Factor(1) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Requested No Action | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Requested No Action | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 |
| **AM Peak Hour** | | | | | | | | | | |
| - Northbound | 35 | 37 | 36 | 36 | 35 | 59% | 63% | 62% | 62% | 60% |
| - Southbound | 30 | 34 | 30 | 29 | 29 | 19% | 22% | 19% | 19% | 19% |
| **PM Peak Hour** | | | | | | | | | | |
| - Northbound | 24 | 31 | 25 | 24 | 23 | 12% | 16% | 13% | 12% | 12% |
| - Southbound | 40 | 47 | 41 | 41 | 40 | 17% | 20% | 18% | 18% | 17% |

Source: Wilbur Smith Associates – February 2006.
Notes:
1. Peak hour capacity assumes 39 passengers per bus.

**Table 11**
**PresidiGo Cumulative Ridership by Alternative**
**Year 2025**

| Alternative | AM Peak Hour | PM Peak Hour |
|---|---|---|
| Requested No Action Alt. | 231 | 341 |
| Alternative 1 | 244 | 369 |
| Alternative 2 | 231 | 342 |
| Alternative 3 | 230 | 341 |
| Alternative 4 | 230 | 342 |

Source: Wilbur Smith Associates – February 2006.

**Requested No Action Alternative –** The Requested No Action Alternative would generate 265 daily transit trips. The alternative would generate 41 transit trips in the AM peak hour and 45 transit trips in the PM peak hour. The transit analysis of year 2025 conditions shows that cumulative ridership due to regional growth trends on Routes 1, 1AX, and 1BX could exceed capacity in the inbound (toward downtown) direction during the AM peak hour if additional capacity is not added to these routes by 2025. However, the Presidio is expected to contribute less than two percent to the total projected 2025 AM peak hour ridership on these routes in this direction. In the PM peak hour, cumulative ridership on Muni Routes 1, 1BX, and 28 could exceed capacity if additional capacity is not added. The projected ridership on Muni Route 28 is expected to exceed capacity in both the inbound and outbound directions. The maximum load point for the Muni Route 28 occurs south of Golden Gate Park, and many passengers traveling to and from the Presidio are expected to board the bus at a considerable distance from the maximum load point.



Golden Gate Transit (GGT) Route 10 is the route that directly serves the project site. As shown in Table 10, ridership on GGT Route 10 is not expected to exceed capacity during either the AM or PM peak hours. This analysis conservatively assumes that all transit ridership to/from the North Bay would be on GGT Route 10. In reality, some passengers may choose to ride PresidiGo to the Golden Gate Bridge Toll Plaza, and transfer to another GGT route, in which case, the transit load would be distributed across more routes, thereby resulting in a lesser impact.

**Alternative 1: PTMP Alternative –** Alternative 1 would generate 1,524 daily transit trips, which is approximately 475 percent more transit trips than the Requested No Action Alternative. The alternative would generate 114 transit trips in the AM peak hour and 212 transit trips in the PM peak hour; which is an increase of 178 and 371 percent, respectively, compared to the Requested No Action Alternative. If Muni does not provide additional capacity for Routes 1, 1AX, and 1BX on California Street by 2025, the cumulative ridership due to regional growth trends and implementation of the PTMP could exceed capacity on one or more of these three routes in the inbound (toward downtown) direction in the AM peak hour. However, the Presidio is expected to contribute less than three percent to the total AM peak hour projected 2025 ridership on these routes in this direction. In the PM peak hour, cumulative ridership on Muni Route1, 1BX, and 28 could exceed capacity if additional capacity is not added to this route. The projected ridership on Muni Route 28 is expected to exceed capacity in both the inbound and outbound directions. The maximum load point for the Muni Route 28 occurs south of Golden Gate Park, and many passengers traveling to and from the Presidio are expected to board the bus at a considerable distance from the maximum load point.

As shown in Table 10, ridership on GGT Route 10 with Alternative 1is not expected to exceed capacity during either the AM or PM peak hours. Alternative 1 results in similar load factors for GGT ridership as the Requested No Action Alternative. This analysis conservatively assumes that all transit ridership to/from the North Bay would be on GGT Route 10. In reality, some passengers may choose to ride PresidiGo to the Golden Gate Bridge Toll Plaza, and transfer to another GGT route, in which case, the transit load would be distributed across more routes, thereby resulting in a lesser impact.

**Alternative 2: Wings Retained/Trust Revised Alternative –** Alternative 2 would generate 558 daily transit trips, or 62 percent fewer than Alternative 1, and approximately 111 percent more than the Requested No Action Alternative. In the AM peak hour, Alternative 2 would generate 58 transit trips, or 49 percent fewer than Alternative 1 and approximately 41 percent more than the Requested No Action Alternative. In the PM peak hour, Alternative 2 would generate 64 transit trips, or 70 percent fewer than Alternative 1, and approximately 42 percent more than the Requested No Action Alternative.

As shown in Tables 8 and 9, average load factors on Muni lines during the AM and PM peak hours with Alternative 2 would be virtually the same as with the Requested No Action Alternative and similar to that with Alternative 1. The Muni lines that would experience an average load factor at the maximum load point higher than 100 percent (1, 1AX, and 1BX in the AM peak hour; 1, 1BX, and 28 in the PM peak hour) under Alternative 1 due to the growth in cumulative ridership associated with Bay Area regional trends in population and employment would also do so under Alternative 2.

As shown in Table 10, the average load factor on GGT Route 10 in the AM peak hour in the northbound direction would improve to 62 percent, from 63 percent under Alternative 1. None of the average load factors in the year 2025 under Alternative 2 would be above 100 percent. This analysis conservatively assumes that all transit ridership to/from the North Bay would be on GGT Route 10. In reality, some passengers may choose to ride PresidiGo to the Golden Gate Bridge Toll Plaza, and transfer to another GGT route, in which case, the transit load would be distributed across more routes, thereby resulting in a lesser impact.

As Table 11 indicates, PresidiGo ridership in the year 2025 under Alternative 2 would decrease by approximately five percent in the AM peak hour and seven percent in the PM peak hour when compared to Alternative 1, due to the lower development intensity associated with Alternative 2. PresidiGo ridership for Alternative 2 effectively be the same as that for the Requested No Action Alternative in both the AM and PM peak hours.

**Alternative 3: Wings Removed Alternative –**Alternative 3 would generate 484 daily transit trips, or 83 percent more than the Requested No Action Alternative; 68 percent fewer than Alternative 1; and 13 percent fewer than Alternative 2. In the AM peak hour, Alternative 3 would generate 48 transit trips, or 17 percent more than the Requested No Action Alternative; 58 percent fewer than Alternative 1; and 17 percent fewer than Alternative 2. In the PM peak hour, Alternative 3 would generate 57 transit trips, or 27 percent more than the Requested No Action Alternative; 73 percent fewer than Alternative 1; and 11 percent fewer than Alternative 2.

As shown in Tables 8 and 9, average load factors on Muni lines during the AM and PM peak hours with Alternative 3 would be similar to other alternatives. The Muni lines that would experience an average load factor at the maximum load point higher than 100 percent (1, 1AX, and 1BX in the AM peak hour; 1, 1BX, and 28 in the PM peak hour) under Alternative 1 due to the growth in cumulative ridership associated with Bay Area regional trends in population and employment would also do so under Alternative 3.

As shown in Table 10, GGT's average load factor for the AM peak hour in the northbound direction would improve to 62 percent, from 63 percent under Alternative 1. None of the average load factors in the year 2025 under Alternative 3 would be above 100 percent for Alternative 3 in either the AM or PM peak hour. This analysis conservatively assumes that all transit ridership to/from the North Bay would be on GGT Route 10. In reality, some passengers may choose to ride PresidiGo to the Golden Gate Bridge Toll Plaza, and transfer to another GGT route, in which case, the transit load would be distributed across more routes, thereby resulting in a lesser impact.



As Table 11 indicates, PresidiGo ridership in the year 2025 under Alternative 3 would decrease slightly in the AM and PM peak hours when compared to Alternative 2; decrease by approximately six percent in the AM peak hour and eight percent in the PM peak hour when compared to Alternative 1, due to the lower development intensity associated with Alternative 3; and effectively be the same as that with the Requested No Action Alternative.

**Alternative 4: Battery Caulfield Alternative –**Alternative 4 would generate 417 daily transit trips, or 57 percent more than the Requested No Action Alternative; 73 percent fewer than Alternative 1; 25 percent fewer than Alternative 2; and 14 percent fewer than Alternative 3. In the AM peak hour, Alternative 4 would generate 34 transit trips, or 17 percent fewer than the Requested No Action Alternative; 70 percent fewer than Alternative 1; 41 percent fewer than Alternative 2; and 29 percent fewer than Alternative 3. In the PM peak hour, Alternative 4 would generate 42 transit trips, or 7 percent fewer than the Requested No Action Alternative; 80 percent fewer than Alternative 1; 34 percent fewer than Alternative 2; and 26 percent fewer than Alternative 3.

As shown in Tables 8 and 9, average load factors on Muni lines during the AM and PM peak hours with Alternative 3 would be similar to other alternatives. The Muni lines that would experience an average load factor at the maximum load point higher than 100 percent (1, 1AX, and 1BX in the AM peak hour; 1, 1BX, and 28 in the PM peak hour) under Alternative 1 due to the growth in cumulative ridership associated with Bay Area regional trends in population and employment would also do so under Alternative 4.

As shown in Table 10, GGT's average load factor for the AM peak hour in the northbound direction would improve to 60 percent, from 62 percent under Alternative 2 and 3, from 63 percent under Alternative 1, and from 59 percent under the Requested No Action Alternative. None of the average load factors in the year 2025 under Alternative 4 would be above 100 percent.

As Table 11 indicates, PresidiGo ridership in the year 2025 under Alternative 4 would effectively be the same compared to Alternative 3; decrease by approximately six percent in the AM peak hour and seven percent in the PM peak hour when compared to Alternative 1, due to the lower development intensity associated with Alternative 4; and effectively be the same compared to the Requested No Action Alternative.

## 4. BICYCLE AND PEDESTRIAN CONDITIONS

The number of person trips to and from the project site expected to be made by bicycling, walking, or some other mode was calculated assuming the mode split discussed in Technical Memorandum No. 2.

All of the alternatives assume improvements to the pedestrian and bicycle circulation network consistent with the Trails and Bikeways Master Plan. In the vicinity of the project site, the Trails and Bikeways Master Plan would provide a multi-use path that would extend from Battery Caulfield Road on the west side of the site around the south side of the site to connect with Park

Boulevard, which is an existing multi-use path that continues under Highway 1 to the Mountain Lake area. The Master Plan would also provide an uphill bike lane on Wedemeyer Street/Battery Caulfield Road between 15th Avenue and Washington Boulevard, a pedestrian path in the Wedemeyer Street/Battery Caulfield corridor, and pedestrian paths that connect the project site to Lobos Creek and the Baker Beach Apartments.

**Requested No Action Alternative –** The Requested No Action Alternative would generate 179 daily pedestrian or bicycle trips. The alternative would generate 27 pedestrian or bicycle trips in the AM peak hour and 30 pedestrian or bicycle trips in the PM peak hour.

**Alternative 1: PTMP Alternative –** Alternative 1 would generate 1,483 daily pedestrian or bicycle trips, which is about 8 times that of the Requested No Action Alternative. In the AM peak hour, Alternative 1 would generate 103 pedestrian or bicycle trips, or more than 3 times that of the Requested No Action Alternative. In the PM peak hour, Alternative 1 would generate 203 pedestrian or bicycle trips, or more than 6 times that of the Requested No Action Alternative. The expected level of pedestrian and bicycle activity with Alternative 1 would be accommodated within the bicycle and pedestrian network planned as part of the Presidio Trails and Bikeways Master Plan.

**Alternative 2: Wings Retained/Trust Revised Alternative –** Alternative 2 would generate 541 daily pedestrian or bicycle trips, or 64 percent fewer than Alternative 1; and approximately 3 times more than for the Requested No Action Alternative. In the AM peak hour, Alternative 2 would generate 56 pedestrian or bicycle trips, or 46 percent fewer than Alternative 1; and approximately twice that for the Requested No Action Alternative. In the PM peak hour, Alternative 2 would generate 61 pedestrian or bicycle trips, or 70 percent fewer than Alternative 1; and approximately twice that for the Requested No Action Alternative. Since Alternative 2 would generate fewer bicycle and pedestrian trips than Alternative 1, the expected level of pedestrian and bicycle activity with Alternative 2 could be accommodated within the bicycle and pedestrian network planned as part of the Presidio Trails and Bikeways Master Plan.

**Alternative 3: Wings Removed Alternative –** Alternative 3 would generate 452 daily pedestrian or bicycle trips, or 16 percent fewer than Alternative 2; 70 percent fewer than Alternative 1; and approximately 152 percent more than the Requested No Action Alternative. In the AM peak hour, Alternative 3 would generate 43 pedestrian or bicycle trips, or 23 percent fewer than Alternative 2; 58 percent fewer than Alternative 1; and approximately 59 percent more than the Requested No Action Alternative. In the PM peak hour, Alternative 3 would generate 52 pedestrian or bicycle trips, or 15 percent fewer than Alternative 2; 74 percent fewer than Alternative 1; and approximately 73 percent more than the Requested No Action Alternative. The expected level of pedestrian and bicycle activity with Alternative 3 would be accommodated within the bicycle and pedestrian network planned as part of the Presidio Trails and Bikeways Master Plan.

**Alternative 4: Battery Caulfield Alternative –** Alternative 4 would generate 404 daily pedestrian or bicycle trips, or 11 percent fewer than Alternative 3; 25 percent fewer than



Alternative 2; 73 percent fewer than Alternative 1; and approximately 126 percent more than the Requested No Action Alternative. In the AM peak hour, Alternative 4 would generate 31 pedestrian or bicycle trips, or 28 percent fewer than Alternative 3; 45 percent fewer than Alternative 2; 70 percent fewer than Alternative 1; and approximately 15 percent more than the Requested No Action Alternative. In the PM peak hour, Alternative 4 would generate 38 pedestrian or bicycle trips, or 27 percent fewer than Alternative 3; 38 percent fewer than Alternative 2; 81 percent fewer than Alternative 1; and approximately 27 percent more than the Requested No Action Alternative. The expected level of pedestrian and bicycle activity with Alternative 4 would be accommodated within the bicycle and pedestrian network planned as part of the Presidio Trails and Bikeways Master Plan.

## 5. PARKING CONDITIONS

Parking demand generated by the five land use alternatives has been estimated for the midday weekday, evening, and weekend conditions, based on the methodology used in the PTMP EIS. Parking demand consists of both long-term demand (i.e., employee and resident parking) and short-term demand (i.e., visitor parking). Consistent with the methodology outlined in the San Francisco Planning Department's Transportation Impact Analysis Guidelines for Environmental Review (October 2002), long-term parking for non-residential land uses was estimated by determining the number of employees for each land use and applying the average mode split and vehicle occupancy from the trip generation estimates for both external and internal trips. Each employee vehicle trip was assumed to require one space per day. A long-term rate of 1.13 to 1.32 spaces per dwelling unit was used for standard residential units (depending on the mix of unit types/sizes for each alternative), and a rate of 0.27 space per dwelling unit was used for all senior housing, based on the Institute of Transportation Engineers' Parking Generation Manual, Second Edition.

Like the methodology for estimating long-term parking demand, the methodology for estimating short-term parking demand is also consistent with the methodology outlined in the San Francisco Planning Department's Transportation Impact Analysis Guidelines for Environmental Review (October 2002). Short-term parking was estimated based on the total daily visitor trips and the average turnover rate. A short-term parking turnover rate of six vehicles per space per day was applied to industrial/warehousing and office uses, ten vehicles per space per day was used for cultural/educational uses, and three vehicles per space per day was used for conference uses. Tables 12 and 13 present the estimated average weekday midday, evening, and weekend parking demand for all alternatives.

**Requested No Action Alternative –** There are currently approximately 306 parking spaces on the lower plateau of the project site and 30 spaces on the upper plateau. Under the Requested No Action Alternative there would continue to be 30 spaces on the upper plateau, and approximately 60 of the 306 spaces on the lower plateau would be removed during remediation of Landfill 10. Under the Requested No Action Alternative, 22 of the 30 parking spaces available on the upper plateau would be occupied during peak demand periods, leaving a surplus of 8 parking spaces (representing approximately 26% of the parking capacity on the upper plateau). On the lower plateau, 111 of the 246 parking spaces available would be occupied during the peak demand period, leaving a surplus of 135 parking spaces (representing approximately 55% of the parking capacity on the lower plateau).

**Table 12**
**Parking Supply and Demand at the PHSH site by Time of Day and Alternative – Upper plateau**

| Time Period/ Supply and Demand | Number of Parking Spaces | | | | |
|---|---|---|---|---|---|
| | Requested No Action Alt. | Alt. 1[(1)] | Alt. 2 | Alt. 3[(2)] | Alt. 4 |
| Weekday Midday | 22 | 32 | 11 | 18 | 51 |
| Weekday Evening | 1 | 8 | 19 | 1 | 102 |
| Weekend | 2 | 11 | 19 | 2 | 102 |
| Peak Period Demand | 22 | 32 | 19 | 18 | 102 |
| Proposed Supply | 30 | 32 | 21 | 18 | 107 |
| Surplus / (Deficit) | 8 | 0 | 2 | 0 | 5 |
| Surplus / (Deficit) as % or Available Spaces | 26% | 0 | 9% | 0 | 5% |

Source: Wilbur Smith Associates – February 2006
(1) Note: Alternative 1 parking supply meets parking demand.
(2) Note: Alternative 3: parking supply meets parking demand.

**Table 13**
**Parking Supply and Demand at the PHSH site by Time of Day and Alternative – Lower plateau**

| Time Period/ Supply and Demand | Number of Parking Spaces | | | | |
|---|---|---|---|---|---|
| | Requested No Action Alt. | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 |
| Weekday Midday | 111 | 399 | 275 | 177 | 90 |
| Weekday Evening | 58 | 403 | 299 | 294 | 113 |
| Weekend | 79 | 480 | 308 | 300 | 123 |
| Peak Period Demand | 111 | 480 | 308 | 300 | 123 |
| Proposed Supply | 246 | 505 | 431 | 312 | 160 |
| Surplus / (Deficit) | 135 | 25 | 123 | 12 | 37 |
| Surplus / (Deficit) as % or Available Spaces | 55% | 5% | 29% | 4% | 23% |

Source: Wilbur Smith Associates – February 2006

**Alternative 1: PTMP Alternative –** According to the Final Plan Alternative described in the PTMP, the PHSH district was estimated to have a demand of 674 spaces, and therefore was proposed to have a parking supply of 708 spaces. The parking demand calculation assumptions for residential uses in the PTMP EIS were intended to reflect the wide range of types and sizes of residential units throughout the Presidio. The parking demand assumptions used for the



calculations in the PTMP EIS have been refined for the purposes of this site-specific study, and consequently the parking demand for Alternative 1 is estimated to be 491 spaces. The parking supply of 708 parking spaces called for in the PTMP would far exceed the peak period demand, thus allowing for a reduction in this proposed parking supply to 537 spaces. It should be noted that for Alternative 1, parking supply would meet the parking demand on the upper plateau. Of the 505 spaces available on the lower plateau, 480 spaces would be occupied during peak demand period, leaving a surplus of 25 parking spaces.

As a percentage of supply, on the lower plateau Alternative 1 has approximately 5% excess capacity, which is substantially less than the 55% excess capacity of the Requested No Action Alternative.

**Alternative 2: Wings Retained/Trust Revised Alternative –** Alternative 2 would increase the total parking supply from 336 to 452, where the upper plateau would have 21 spaces and the lower plateau would have 431 spaces. About 123 of the spaces on the lower plateau would be underground beneath Building 1801. Of the 21 spaces on the upper level, 19 would be occupied during peak demand periods. Of the 431 spaces on the lower plateau, 308 would be occupied during peak demand periods. As such, the proposed supply of 452 spaces would accommodate the estimated demand, and provide a surplus of about 125 spaces. Some of these spaces would be underground.

**Alternative 3: Wings Removed Alternative –** Alternative 3 is expected to have a peak period demand of 18 spaces on the upper plateau and 300 spaces on the lower plateau. The proposed supply of 330 spaces would adequately accommodate the estimated demand, and would provide about twelve additional spaces on the lower plateau for drivers circulating to find parking spaces and for trailhead parking.

**Alternative 4: Battery Caulfield Alternative –** Of Alternatives 1, 2, 3 and 4, Alternative 4 would generate the least overall parking demand, with a weekend demand for about 225 spaces in 2025, or approximately 69 percent more than the peak period demand expected for the Requested No Action Alternative. The proposed supply of 267 spaces would accommodate the expected demand.

## 6. MITIGATION MEASURES

### 6.1 Potential Impacts Identified

The possible mitigation measure identified for Lake Street/14th Avenue in the PTMP EIS included signalization and restriping to provide a westbound left-turn pocket at Lake Street /14th Avenue (Mitigation Measure TR-11). The possible mitigation measure identified in the PTMP EIS for the California Street/14th Avenue intersection included installing STOP signs on California Street at the intersection and restriping to add a right-turn lane to the northbound approach, or possibly installing a traffic signal if queues on the westbound approach were determined to extend into the adjacent intersection of Park Presidio Boulevard/California Street.

While signalization would mitigate the operation of these intersections, coordination with the San Francisco Department of Parking and Traffic following its comments on the PTMP EIS raised questions about the need for improving the minor approaches to these intersections (PTMP EIS, Volume II, Chapter 5, page 5-59). It has been determined, through subsequent analysis (Access Study at 14th/15th Avenue Gates, Presidio Trust, February 2003) , that if LOS E or F conditions occur on the minor approaches to Lake Street/14th Avenue, they could be mitigated with other measures such as RIGHT TURN ONLY restrictions for the minor approaches if the City determines that this is warranted. The minor approaches to the intersection of Lake Street/14th Avenue are expected to operate with an average delay per vehicle that is comparable to that for the minor approaches to the intersection of California Street/14th Avenue. Therefore, such measures would also likely improve the minor approaches to the intersection of California Street/14th Avenue to LOS D or better in the AM and PM peak hours, and to improve the minor approaches to the intersection of California Street/15th Avenue to LOS D or better in the PM peak hour.

As discussed in Section 3 Transit Service, if Muni does not add capacity to the routes, four Muni lines (1, 1AX, 1BX, and 28) would experience a maximum peak hour load factor higher than 100 percent under all alternatives in the year 2025 due to the growth in cumulative ridership associated with trends in population and employment in the Bay Area region and at the Presidio. Mitigation measures called for in the PTMP EIS, including increased frequency on MUNI lines, PresidiGo service, and monitoring of GGT routes and coordination with GGT, would reduce the effects of these alternatives on transit service.

### 6.2 Mitigation Measures Identified in the PTMP EIS

The following measures are part of the PTMP EIS and would apply to all PHSH site alternatives, with and without the Park Presidio Boulevard Access Variant, unless indicated otherwise. For measures that fall outside the Presidio, the Trust would coordinate with the City's Department of Parking and Traffic, which would have sole jurisdiction.

TR-11 *Lake Street / 14th Avenue Intersection Improvements (Alternatives 1,2, and 3 with the couplet and Alternative 1 with the Variant)* – Designate the 15th Avenue Gate for outbound traffic, and open the 14th Avenue Gate for inbound traffic. Alternatively, if the Park Presidio Boulevard Access Variant is implemented, designate both the 14th and 15th Avenue Gates for inbound traffic only. Prior to the operation of the minor approach(es) deteriorating to LOS E or F, implement right-turn-only restrictions for the minor approach(es) at the intersection of Lake Street/14th Avenue if the City determines that this is warranted. The Trust would coordinate with the City and County of San Francisco to determine the contribution of each party to the cost of the improvements. Using the forecasted peak hour turning movement volumes, and analysis of Caltrans' Peak Hour Signal Warrant indicates that at least one of the two parts of the warrant would be met with Alternatives 1, 2, and 3 with the couplet and Alternative 1 with the Park Presidio Boulevard Access Variant. Therefore, the effect is considered significant with these alternatives, and less than significant with all other alternatives.



Of the alternatives with which there would be a significant effect, Alternative 1 with the couplet would have a project-specific effect on this intersection, as Alternative 1 would comprise the majority of the expected growth in total intersection traffic volume. The effect would be cumulatively significant with Alternatives 2 and 3 with the couplet and Alternative 1 with the Variant.

TR-15 *California Street / 14th Avenue Intersection Improvements* **–** Prior to the operations of the minor approach(es) deteriorating to LOS E or F, implement right-turn only restrictions for the minor approaches at the two-way stop-controlled intersection of Lake Street/14th Avenue.[2] Using the forecasted peak-hour turning movement volumes, an analysis of Caltrans' Peak Hour Signal Warrant indicates that at least one part of the warrant would be met with Alternatives 1,2, 3, and 4 as well as the Requested No Action Alternative. The Trust would coordinate with the City and County of San Francisco to determine the contribution of each party to the cost of the improvements.

Traffic associated with alternatives (all alternatives would meet at least one part of the Caltrans peak hour volume warrant) would comprise 12 (Requested No Action Alternative) to 47 (Alternative 1) percent of the cumulative growth in the AM peak hour volume between 2005 and 2025. Traffic associated with Alternatives 2, 3, and 4 would comprise 10 to 18 percent of the cumulative growth in the AM peak hour volume between 2005 and 2025. In the PM peak hour, alternatives would comprise 7 to 31 percent of the cumulative growth in the PM peak hour intersection volume between 2005 and 2025. Although all alternatives are expected to meet at least one part of the Caltrans peak hour volume warrant in 2025, the warrant would be met with volume on the southbound approach in all cases, and none of the alternatives are expected to add traffic to the southbound approach of this intersection. Therefore, the effect is considered cumulatively significant with all alternatives.

TR-22 *TDM Program Monitoring* **–** The Trust has agreed to implement a TDM Program to reduce automobile usage by all tenants, occupants, and visitors (see Appendix D of the PTMP for a full description). The Trust would monitor implementation and effectiveness of the TDM program on an ongoing basis. If the TDM performance standards as described in the PTMP (Appendix D) are not being reached, the Trust will implement more aggressive TDM strategies or intensify components of the existing TDM program, such as requiring tenant participation in more TDM program elements, or implementing more frequent and/or extensive shuttle service.

TR-10 and TR-25 *Transit Service Improvements and Monitoring Program* – The Trust currently monitors Muni operations and passenger loads within the Presidio. Continued

[2] The PTMP EIS proposed installing all-way stop control at this intersction, and if that were not feasible because of queues extending into the adjacent intersection on Park Presidio Boulevard, installing a traffic signal. In a comment letter on the PTMP EIS, the San Francisco Department of Parking and Traffic (DPT) expressed concern about the reasonableness of signalization at this intersection. The alternatives to signalization developed for the intersection of Lake Stree/t14th Avenue (right-turn-only restrictions) would also likely improve the operation of the minor approaches of the intersection of California Street/14th Avenue.

monitoring of Muni service in the Presidio, and similar monitoring of GGT service at the Presidio would indicate any capacity problems. If the monitoring were to reveal insufficient capacity for northbound Presidio-generated passengers during the PM peak hour, the Trust will notify Muni and/or the Golden Gate Bridge Highway and Transportation District of the deficiencies. Transit service providers could then reduce passenger load factors through increased frequency.

TR-26 *Construction Traffic Management Plan* – During pre-construction activities, the contractor(s) of individual projects will work with the Trust to develop a construction traffic management protocol. The plan will include information on construction phases and duration, scheduling, proposed haul routes, permit parking, staging area management, visitor safety, detour routes, and pedestrian movements on adjacent routes.

### 6.3 Additional PHSH-related Mitigation Measure

TR-27 *Lake Street /* 15$^{th}$ *Avenue Intersection Improvements (Requested No Action Alternative Only.)* **–** This all-way stop-controlled intersection is expected to operate at LOS E in the AM peak hour with the Requested No Action Alternative. Implementation of the one-way couplet assumed in PTMP and under the other alternatives will improve the operation of this intersection to LOS D or better.

It should be noted that the intersection is also expected to operate at LOS E under Alternative 1 during the AM peak hour. However, the average intersection delay would improve compared to the Requested No Action Alternative. Additionally, the result of the signal warrant analysis attached in Appendix C shows that the intersection is not expected to meet the Caltrans peak hour signal warrant. Therefore, the LOS E operating conditions in the AM peak hour with Alternative 1 do not constitute a significant impact.

PTMP mitigation measures related to parking supply and the use of the 14$^{th}$/15$^{th}$ Avenue Gates (TR-23 and TR-11 portion) have been addressed in the definition of the project alternatives and are therefore not repeated here. Other intersection improvement measures included in the PTMP EIS fall outside the PHSH district and vicinity, and also are not repeated here. Mitigation Measure TR-9 *Bicycle and Pedestrian Amenities* will be implemented as planned improvements are funded pursuant to the adopted Presidio Trails and Bikeways Master Plan. Mitigation Measure TR-21 *Presidio-wide Parking Management*, which applies to the Crissy Field area, does not apply to the PHSH district.

# APPENDICES

# APPENDIX A

**Year 2025**
**Requested No Action Alternative**
**AM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 616 | 14 | 17 | 300 | 1 | 3 | 1 | 43 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 670 | 15 | 18 | 326 | 1 | 3 | 1 | 47 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 327 | | | 685 | | | 1051 | 1046 | 677 | 1092 | 1053 | 327 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 327 | | | 685 | | | 1051 | 1046 | 677 | 1092 | 1053 | 327 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 98 | 100 | 90 | 97 | 98 | 100 |
| cM capacity (veh/h) | 1244 | | | 918 | | | 199 | 225 | 456 | 170 | 223 | 719 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 687 | 346 | 51 | 12 |
| Volume Left | 2 | 18 | 3 | 4 |
| Volume Right | 15 | 1 | 47 | 3 |
| cSH | 1244 | 918 | 413 | 241 |
| Volume to Capacity | 0.00 | 0.02 | 0.12 | 0.05 |
| Queue Length 95th (ft) | 0 | 2 | 10 | 4 |
| Control Delay (s) | 0.0 | 0.7 | 14.9 | 20.7 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.7 | 14.9 | 20.7 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 43.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 48 | 601 | 14 | 14 | 292 | 90 | 2 | 64 | 41 | 52 | 40 | 24 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 50 | 626 | 15 | 15 | 304 | 94 | 2 | 67 | 43 | 54 | 42 | 25 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 691 | 413 | 111 | 121 |
| Volume Left (vph) | 50 | 15 | 2 | 54 |
| Volume Right (vph) | 15 | 94 | 43 | 25 |
| Hadj (s) | 0.00 | -0.13 | -0.23 | -0.03 |
| Departure Headway (s) | 5.4 | 5.6 | 6.8 | 7.0 |
| Degree Utilization, x | 1.04 | 0.64 | 0.21 | 0.23 |
| Capacity (veh/h) | 658 | 622 | 479 | 479 |
| Control Delay (s) | 68.9 | 18.1 | 11.6 | 12.1 |
| Approach Delay (s) | 68.9 | 18.1 | 11.6 | 12.1 |
| Approach LOS | F | C | B | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 43.3 | | |
| HCM Level of Service | E | | |
| Intersection Capacity Utilization | 72.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 3 | 685 | 6 | 177 | 388 | 7 | 4 | 5 | 44 | 3 | 2 | 4 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 3 | 706 | 6 | 182 | 400 | 7 | 4 | 5 | 45 | 3 | 2 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.93 | | | | | | 0.93 | 0.93 | | 0.93 | 0.93 | 0.93 |
| vC, conflicting volume | 407 | | | 712 | | | 1489 | 1488 | 709 | 1532 | 1487 | 404 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 363 | | | 712 | | | 1526 | 1524 | 709 | 1572 | 1523 | 359 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 80 | | | 94 | 94 | 90 | 95 | 98 | 99 |
| cM capacity (veh/h) | 1123 | | | 897 | | | 74 | 88 | 437 | 61 | 88 | 642 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 715 | 590 | 55 | 9 |
| Volume Left | 3 | 182 | 4 | 3 |
| Volume Right | 6 | 7 | 45 | 4 |
| cSH | 1123 | 897 | 251 | 115 |
| Volume to Capacity | 0.00 | 0.20 | 0.22 | 0.08 |
| Queue Length 95th (ft) | 0 | 19 | 20 | 6 |
| Control Delay (s) | 0.1 | 5.0 | 23.3 | 39.0 |
| Lane LOS | A | A | C | E |
| Approach Delay (s) | 0.1 | 5.0 | 23.3 | 39.0 |
| Approach LOS | | | C | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.4 | | |
| Intersection Capacity Utilization | 80.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4925 | |
| Flt Permitted | 0.58 | 1.00 | 1.00 | 0.23 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1058 | 1756 | 1492 | 397 | 1756 | 1492 | | 5012 | | | 4925 | |
| Volume (vph) | 253 | 447 | 32 | 65 | 182 | 137 | 0 | 2605 | 85 | 0 | 2266 | 390 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 258 | 456 | 33 | 66 | 186 | 140 | 0 | 2658 | 87 | 0 | 2312 | 398 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 28 | 0 |
| Lane Group Flow (vph) | 258 | 456 | 30 | 66 | 186 | 139 | 0 | 2741 | 0 | 0 | 2682 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 349 | 578 | 491 | 131 | 578 | 491 | | 2889 | | | 2839 | |
| v/s Ratio Prot | | c0.26 | | | 0.11 | | | c0.55 | | | 0.54 | |
| v/s Ratio Perm | 0.24 | | 0.02 | 0.17 | | 0.09 | | | | | | |
| v/c Ratio | 0.74 | 0.79 | 0.06 | 0.50 | 0.32 | 0.28 | | 0.95 | | | 0.94 | |
| Uniform Delay, d1 | 25.3 | 25.8 | 19.5 | 22.9 | 21.4 | 21.1 | | 16.8 | | | 16.7 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.65 | | | 1.00 | |
| Incremental Delay, d2 | 13.1 | 10.5 | 0.2 | 13.2 | 1.5 | 1.4 | | 4.0 | | | 8.1 | |
| Delay (s) | 38.4 | 36.3 | 19.7 | 36.1 | 22.8 | 22.5 | | 14.9 | | | 24.9 | |
| Level of Service | D | D | B | D | C | C | | B | | | C | |
| Approach Delay (s) | | 36.3 | | | 25.0 | | | 14.9 | | | 24.9 | |
| Approach LOS | | D | | | C | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 22.0 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.89 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 89.6% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 517 | 14 | 3 | 370 | 4 | 12 | 3 | 18 | 3 | 2 | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 1 | 533 | 14 | 3 | 381 | 4 | 12 | 3 | 19 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 69 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.76 | | | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | |
| vC, conflicting volume | 386 | | | 547 | | | 935 | 934 | 540 | 952 | 939 | 384 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 386 | | | 408 | | | 915 | 914 | 399 | 937 | 920 | 384 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 94 | 99 | 96 | 98 | 99 | 100 |
| cM capacity (veh/h) | 1178 | | | 884 | | | 193 | 209 | 501 | 179 | 208 | 668 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 548 | 389 | 34 | 7 |
| Volume Left | 1 | 3 | 12 | 3 |
| Volume Right | 14 | 4 | 19 | 2 |
| cSH | 1178 | 884 | 293 | 238 |
| Volume to Capacity | 0.00 | 0.00 | 0.12 | 0.03 |
| Queue Length 95th (ft) | 0 | 0 | 10 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 18.9 | 20.6 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 18.9 | 20.6 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.9 | | |
| Intersection Capacity Utilization | 38.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 49 | 600 | 15 | 12 | 277 | 39 | 8 | 19 | 32 | 4 | 18 | 45 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 53 | 645 | 16 | 13 | 298 | 42 | 9 | 20 | 34 | 4 | 19 | 48 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 528 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 340 | | | 661 | | | 1161 | 1124 | 653 | 1148 | 1111 | 319 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 280 | | | 661 | | | 1176 | 1135 | 653 | 1161 | 1121 | 257 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 99 | | | 93 | 88 | 93 | 97 | 89 | 93 |
| cM capacity (veh/h) | 1187 | | | 937 | | | 127 | 176 | 471 | 129 | 180 | 721 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 714 | 353 | 63 | 72 |
| Volume Left | 53 | 13 | 9 | 4 |
| Volume Right | 16 | 42 | 34 | 48 |
| cSH | 1187 | 937 | 247 | 346 |
| Volume to Capacity | 0.04 | 0.01 | 0.26 | 0.21 |
| Queue Length 95th (ft) | 3 | 1 | 25 | 19 |
| Control Delay (s) | 1.2 | 0.5 | 24.5 | 18.1 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 1.2 | 0.5 | 24.5 | 18.1 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.2 | | |
| Intersection Capacity Utilization | 65.1% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 29 | 594 | 14 | 55 | 309 | 13 | 5 | 12 | 29 | 158 | 13 | 14 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 31 | 625 | 15 | 58 | 325 | 14 | 5 | 13 | 31 | 166 | 14 | 15 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 228 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 339 | | | 640 | | | 994 | 1148 | 320 | 858 | 1149 | 169 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 265 | | | 640 | | | 949 | 1110 | 320 | 807 | 1111 | 88 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 94 | | | 97 | 93 | 96 | 26 | 93 | 98 |
| cM capacity (veh/h) | 1255 | | | 954 | | | 182 | 185 | 682 | 224 | 185 | 919 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 343 | 327 | 221 | 176 | 48 | 195 |
| Volume Left | 31 | 0 | 58 | 0 | 5 | 166 |
| Volume Right | 0 | 15 | 0 | 14 | 31 | 15 |
| cSH | 1255 | 1700 | 954 | 1700 | 341 | 234 |
| Volume to Capacity | 0.02 | 0.19 | 0.06 | 0.10 | 0.14 | 0.83 |
| Queue Length 95th (ft) | 2 | 0 | 5 | 0 | 12 | 161 |
| Control Delay (s) | 0.9 | 0.0 | 2.8 | 0.0 | 17.3 | 67.3 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 0.5 | | 1.6 | | 17.3 | 67.3 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 11.4 | | |
| Intersection Capacity Utilization | 55.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3186 | | | 4960 | | | 5002 | |
| Flt Permitted | 0.44 | 1.00 | | 0.22 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 778 | 3318 | | 388 | 3186 | | | 4960 | | | 5002 | |
| Volume (vph) | 104 | 653 | 24 | 102 | 270 | 115 | 0 | 2472 | 276 | 0 | 2255 | 107 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 107 | 673 | 25 | 105 | 278 | 119 | 0 | 2548 | 285 | 0 | 2325 | 110 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 16 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 107 | 695 | 0 | 105 | 395 | 0 | 0 | 2817 | 0 | 0 | 2429 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 238 | 1015 | | 119 | 975 | | | 2976 | | | 3001 | |
| v/s Ratio Prot | | 0.21 | | | 0.12 | | | c0.57 | | | 0.49 | |
| v/s Ratio Perm | 0.14 | | | c0.27 | | | | | | | | |
| v/c Ratio | 0.45 | 0.68 | | 0.88 | 0.41 | | | 0.95 | | | 0.81 | |
| Uniform Delay, d1 | 23.7 | 25.9 | | 28.0 | 23.4 | | | 15.7 | | | 13.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.69 | |
| Incremental Delay, d2 | 6.0 | 3.8 | | 55.4 | 1.3 | | | 8.0 | | | 1.0 | |
| Delay (s) | 29.8 | 29.7 | | 83.5 | 24.6 | | | 23.8 | | | 10.1 | |
| Level of Service | C | C | | F | C | | | C | | | B | |
| Approach Delay (s) | | 29.7 | | | 36.9 | | | 23.8 | | | 10.1 | |
| Approach LOS | | C | | | D | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.4 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.93 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.4% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

**Year 2025**
**Alternative 1 (PTMP Alternative) One-way Couplet**
**AM Peak Hour**

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 627 | 14 | 17 | 307 | 1 | 3 | 1 | 43 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 682 | 15 | 18 | 334 | 1 | 3 | 1 | 47 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 335 | | | 697 | | | 1070 | 1065 | 689 | 1112 | 1072 | 334 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 335 | | | 697 | | | 1070 | 1065 | 689 | 1112 | 1072 | 334 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 98 | 100 | 90 | 97 | 98 | 100 |
| cM capacity (veh/h) | 1236 | | | 909 | | | 193 | 219 | 449 | 165 | 217 | 712 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 699 | 353 | 51 | 12 |
| Volume Left | 2 | 18 | 3 | 4 |
| Volume Right | 15 | 1 | 47 | 3 |
| cSH | 1236 | 909 | 406 | 235 |
| Volume to Capacity | 0.00 | 0.02 | 0.13 | 0.05 |
| Queue Length 95th (ft) | 0 | 2 | 11 | 4 |
| Control Delay (s) | 0.0 | 0.7 | 15.1 | 21.2 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.7 | 15.1 | 21.2 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 44.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 658 | 14 | 14 | 292 | 3 | 2 | 3 | 41 | 77 | 52 | 31 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 2 | 685 | 15 | 15 | 304 | 3 | 2 | 3 | 43 | 80 | 54 | 32 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 702 | 322 | 48 | 167 |
| Volume Left (vph) | 2 | 15 | 2 | 80 |
| Volume Right (vph) | 15 | 3 | 43 | 32 |
| Hadj (s) | -0.01 | 0.00 | -0.53 | -0.02 |
| Departure Headway (s) | 5.2 | 5.6 | 6.4 | 6.5 |
| Degree Utilization, x | 1.00 | 0.50 | 0.09 | 0.30 |
| Capacity (veh/h) | 696 | 629 | 511 | 525 |
| Control Delay (s) | 57.5 | 14.1 | 10.0 | 12.3 |
| Approach Delay (s) | 57.5 | 14.1 | 10.0 | 12.3 |
| Approach LOS | F | B | B | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 38.3 | | |
| HCM Level of Service | E | | |
| Intersection Capacity Utilization | 58.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 60 | 710 | 6 | 177 | 301 | 130 | 4 | 86 | 44 | 3 | 2 | 4 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 62 | 732 | 6 | 182 | 310 | 134 | 4 | 89 | 45 | 3 | 2 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 444 | | | 738 | | | 1606 | 1668 | 735 | 1691 | 1604 | 377 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 399 | | | 738 | | | 1656 | 1722 | 735 | 1747 | 1653 | 327 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 94 | | | 79 | | | 93 | 0 | 89 | 0 | 97 | 99 |
| cM capacity (veh/h) | 1082 | | | 877 | | | 57 | 62 | 423 | 0 | 69 | 665 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 800 | 627 | 138 | 9 |
| Volume Left | 62 | 182 | 4 | 3 |
| Volume Right | 6 | 134 | 45 | 4 |
| cSH | 1082 | 877 | 86 | 0 |
| Volume to Capacity | 0.06 | 0.21 | 1.60 | Err |
| Queue Length 95th (ft) | 5 | 20 | 279 | Err |
| Control Delay (s) | 1.5 | 5.0 | 403.4 | Err |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 1.5 | 5.0 | 403.4 | Err |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | Err | | |
| Intersection Capacity Utilization | 92.1% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4919 | |
| Flt Permitted | 0.57 | 1.00 | 1.00 | 0.22 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1029 | 1756 | 1492 | 382 | 1756 | 1492 | | 5012 | | | 4919 | |
| Volume (vph) | 271 | 454 | 32 | 65 | 193 | 137 | 0 | 2605 | 85 | 0 | 2266 | 415 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 277 | 463 | 33 | 66 | 197 | 140 | 0 | 2658 | 87 | 0 | 2312 | 423 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 31 | 0 |
| Lane Group Flow (vph) | 277 | 463 | 30 | 66 | 197 | 139 | 0 | 2741 | 0 | 0 | 2704 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 339 | 578 | 491 | 126 | 578 | 491 | | 2889 | | | 2836 | |
| v/s Ratio Prot | | 0.26 | | | 0.11 | | | 0.55 | | | c0.55 | |
| v/s Ratio Perm | c0.27 | | 0.02 | 0.17 | | 0.09 | | | | | | |
| v/c Ratio | 0.82 | 0.80 | 0.06 | 0.52 | 0.34 | 0.28 | | 0.95 | | | 0.95 | |
| Uniform Delay, d1 | 26.2 | 26.0 | 19.5 | 23.1 | 21.5 | 21.1 | | 16.8 | | | 16.9 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.65 | | | 1.00 | |
| Incremental Delay, d2 | 19.2 | 11.1 | 0.2 | 14.7 | 1.6 | 1.4 | | 4.0 | | | 9.1 | |
| Delay (s) | 45.4 | 37.1 | 19.7 | 37.8 | 23.1 | 22.5 | | 14.9 | | | 26.0 | |
| Level of Service | D | D | B | D | C | C | | B | | | C | |
| Approach Delay (s) | | 39.3 | | | 25.3 | | | 14.9 | | | 26.0 | |
| Approach LOS | | D | | | C | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 22.9 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.90 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 90.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Ave.
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 524 | 14 | 3 | 381 | 4 | 12 | 3 | 18 | 3 | 2 | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 1 | 540 | 14 | 3 | 393 | 4 | 12 | 3 | 19 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 69 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.76 | | | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | |
| vC, conflicting volume | 397 | | | 555 | | | 954 | 953 | 547 | 971 | 958 | 395 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 397 | | | 414 | | | 939 | 938 | 404 | 961 | 944 | 395 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 93 | 98 | 96 | 98 | 99 | 100 |
| cM capacity (veh/h) | 1167 | | | 874 | | | 184 | 202 | 494 | 171 | 200 | 659 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 556 | 400 | 34 | 7 |
| Volume Left | 1 | 3 | 12 | 3 |
| Volume Right | 14 | 4 | 19 | 2 |
| cSH | 1167 | 874 | 283 | 229 |
| Volume to Capacity | 0.00 | 0.00 | 0.12 | 0.03 |
| Queue Length 95th (ft) | 0 | 0 | 10 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 19.4 | 21.2 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 19.4 | 21.2 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.9 | | |
| Intersection Capacity Utilization | 39.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 19 | 647 | 15 | 12 | 277 | 20 | 8 | 7 | 32 | 4 | 19 | 57 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 20 | 696 | 16 | 13 | 298 | 22 | 9 | 8 | 34 | 4 | 20 | 61 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 528 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 319 | | | 712 | | | 1151 | 1090 | 704 | 1117 | 1087 | 309 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 263 | | | 712 | | | 1163 | 1097 | 704 | 1127 | 1094 | 252 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 93 | 96 | 92 | 97 | 89 | 92 |
| cM capacity (veh/h) | 1213 | | | 897 | | | 132 | 192 | 441 | 148 | 193 | 732 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 732 | 332 | 51 | 86 |
| Volume Left | 20 | 13 | 9 | 4 |
| Volume Right | 16 | 22 | 34 | 61 |
| cSH | 1213 | 897 | 277 | 393 |
| Volume to Capacity | 0.02 | 0.01 | 0.18 | 0.22 |
| Queue Length 95th (ft) | 1 | 1 | 16 | 21 |
| Control Delay (s) | 0.4 | 0.5 | 20.9 | 16.7 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.4 | 0.5 | 20.9 | 16.7 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.5 | | |
| Intersection Capacity Utilization | 54.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 75 | 594 | 14 | 55 | 294 | 28 | 1 | 31 | 29 | 158 | 13 | 14 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 79 | 625 | 15 | 58 | 309 | 29 | 1 | 33 | 31 | 166 | 14 | 15 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 228 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 339 | | | 640 | | | 1083 | 1245 | 320 | 957 | 1238 | 169 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 265 | | | 640 | | | 1042 | 1211 | 320 | 911 | 1204 | 88 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 94 | | | 94 | | | 99 | 79 | 96 | 0 | 91 | 98 |
| cM capacity (veh/h) | 1255 | | | 954 | | | 149 | 155 | 682 | 162 | 156 | 919 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 392 | 327 | 213 | 184 | 64 | 195 |
| Volume Left | 79 | 0 | 58 | 0 | 1 | 166 |
| Volume Right | 0 | 15 | 0 | 29 | 31 | 15 |
| cSH | 1255 | 1700 | 954 | 1700 | 245 | 173 |
| Volume to Capacity | 0.06 | 0.19 | 0.06 | 0.11 | 0.26 | 1.13 |
| Queue Length 95th (ft) | 5 | 0 | 5 | 0 | 26 | 251 |
| Control Delay (s) | 2.1 | 0.0 | 2.9 | 0.0 | 24.9 | 161.5 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 1.2 | | 1.6 | | 24.9 | 161.5 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 25.1 | | |
| Intersection Capacity Utilization | 56.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3186 | | | 4960 | | | 5002 | |
| Flt Permitted | 0.44 | 1.00 | | 0.22 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 778 | 3318 | | 388 | 3186 | | | 4960 | | | 5002 | |
| Volume (vph) | 104 | 653 | 24 | 102 | 270 | 115 | 0 | 2472 | 276 | 0 | 2255 | 107 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 107 | 673 | 25 | 105 | 278 | 119 | 0 | 2548 | 285 | 0 | 2325 | 110 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 16 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 107 | 695 | 0 | 105 | 395 | 0 | 0 | 2817 | 0 | 0 | 2429 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 238 | 1015 | | 119 | 975 | | | 2976 | | | 3001 | |
| v/s Ratio Prot | | 0.21 | | | 0.12 | | | c0.57 | | | 0.49 | |
| v/s Ratio Perm | 0.14 | | | c0.27 | | | | | | | | |
| v/c Ratio | 0.45 | 0.68 | | 0.88 | 0.41 | | | 0.95 | | | 0.81 | |
| Uniform Delay, d1 | 23.7 | 25.9 | | 28.0 | 23.4 | | | 15.7 | | | 13.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.70 | |
| Incremental Delay, d2 | 6.0 | 3.8 | | 55.4 | 1.3 | | | 8.0 | | | 1.0 | |
| Delay (s) | 29.8 | 29.7 | | 83.5 | 24.6 | | | 23.8 | | | 10.2 | |
| Level of Service | C | C | | F | C | | | C | | | B | |
| Approach Delay (s) | | 29.7 | | | 36.9 | | | 23.8 | | | 10.2 | |
| Approach LOS | | C | | | D | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.5 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.93 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.4% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

**Year 2025**
**Alternative 2 (Wings Retained/Trust Revised)**
**Alternative) One-way Couplet**
**AM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 613 | 14 | 17 | 301 | 1 | 3 | 1 | 43 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 666 | 15 | 18 | 327 | 1 | 3 | 1 | 47 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 328 | | | 682 | | | 1048 | 1043 | 674 | 1090 | 1051 | 328 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 328 | | | 682 | | | 1048 | 1043 | 674 | 1090 | 1051 | 328 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 98 | 100 | 90 | 97 | 98 | 100 |
| cM capacity (veh/h) | 1243 | | | 921 | | | 200 | 226 | 458 | 171 | 224 | 718 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 684 | 347 | 51 | 12 |
| Volume Left | 2 | 18 | 3 | 4 |
| Volume Right | 15 | 1 | 47 | 3 |
| cSH | 1243 | 921 | 415 | 242 |
| Volume to Capacity | 0.00 | 0.02 | 0.12 | 0.05 |
| Queue Length 95th (ft) | 0 | 2 | 10 | 4 |
| Control Delay (s) | 0.0 | 0.7 | 14.9 | 20.6 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.7 | 14.9 | 20.6 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 43.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 644 | 14 | 14 | 292 | 3 | 2 | 3 | 41 | 57 | 42 | 25 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 2 | 671 | 15 | 15 | 304 | 3 | 2 | 3 | 43 | 59 | 44 | 26 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 688 | 322 | 48 | 129 |
| Volume Left (vph) | 2 | 15 | 2 | 59 |
| Volume Right (vph) | 15 | 3 | 43 | 26 |
| Hadj (s) | -0.01 | 0.00 | -0.53 | -0.03 |
| Departure Headway (s) | 5.0 | 5.4 | 6.3 | 6.5 |
| Degree Utilization, x | 0.95 | 0.48 | 0.08 | 0.23 |
| Capacity (veh/h) | 718 | 649 | 530 | 525 |
| Control Delay (s) | 43.3 | 13.4 | 9.8 | 11.4 |
| Approach Delay (s) | 43.3 | 13.4 | 9.8 | 11.4 |
| Approach LOS | E | B | A | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 30.4 | | |
| HCM Level of Service | D | | |
| Intersection Capacity Utilization | 55.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 46 | 690 | 6 | 177 | 301 | 82 | 4 | 59 | 44 | 3 | 2 | 4 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 47 | 711 | 6 | 182 | 310 | 85 | 4 | 61 | 45 | 3 | 2 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.93 | | | | | | 0.93 | 0.93 | | 0.93 | 0.93 | 0.93 |
| vC, conflicting volume | 395 | | | 718 | | | 1532 | 1569 | 714 | 1603 | 1530 | 353 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 351 | | | 718 | | | 1571 | 1610 | 714 | 1646 | 1568 | 306 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 80 | | | 94 | 19 | 90 | 83 | 97 | 99 |
| cM capacity (veh/h) | 1137 | | | 893 | | | 67 | 75 | 434 | 18 | 80 | 689 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 765 | 577 | 110 | 9 |
| Volume Left | 47 | 182 | 4 | 3 |
| Volume Right | 6 | 85 | 45 | 4 |
| cSH | 1137 | 893 | 113 | 47 |
| Volume to Capacity | 0.04 | 0.20 | 0.98 | 0.20 |
| Queue Length 95th (ft) | 3 | 19 | 157 | 16 |
| Control Delay (s) | 1.1 | 5.0 | 149.9 | 100.5 |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 1.1 | 5.0 | 149.9 | 100.5 |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 14.5 | | |
| Intersection Capacity Utilization | 86.0% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4927 | |
| Flt Permitted | 0.59 | 1.00 | 1.00 | 0.22 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1065 | 1756 | 1492 | 395 | 1756 | 1492 | | 5012 | | | 4927 | |
| Volume (vph) | 256 | 448 | 32 | 65 | 179 | 137 | 0 | 2605 | 85 | 0 | 2266 | 381 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 261 | 457 | 33 | 66 | 183 | 140 | 0 | 2658 | 87 | 0 | 2312 | 389 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 28 | 0 |
| Lane Group Flow (vph) | 261 | 457 | 30 | 66 | 183 | 139 | 0 | 2741 | 0 | 0 | 2673 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 351 | 578 | 491 | 130 | 578 | 491 | | 2889 | | | 2840 | |
| v/s Ratio Prot | | c0.26 | | | 0.10 | | | c0.55 | | | 0.54 | |
| v/s Ratio Perm | 0.24 | | 0.02 | 0.17 | | 0.09 | | | | | | |
| v/c Ratio | 0.74 | 0.79 | 0.06 | 0.51 | 0.32 | 0.28 | | 0.95 | | | 0.94 | |
| Uniform Delay, d1 | 25.3 | 25.8 | 19.5 | 22.9 | 21.3 | 21.1 | | 16.8 | | | 16.7 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.65 | | | 1.00 | |
| Incremental Delay, d2 | 13.3 | 10.6 | 0.2 | 13.5 | 1.4 | 1.4 | | 4.0 | | | 7.8 | |
| Delay (s) | 38.6 | 36.4 | 19.7 | 36.4 | 22.8 | 22.5 | | 14.9 | | | 24.5 | |
| Level of Service | D | D | B | D | C | C | | B | | | C | |
| Approach Delay (s) | | 36.5 | | | 25.0 | | | 14.9 | | | 24.5 | |
| Approach LOS | | D | | | C | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 21.9 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.89 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 89.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Ave.
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | | ✣ | | | ✣ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 518 | 14 | 3 | 367 | 4 | 12 | 3 | 18 | 3 | 2 | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 1 | 534 | 14 | 3 | 378 | 4 | 12 | 3 | 19 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 69 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.76 | | | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | |
| vC, conflicting volume | 382 | | | 548 | | | 933 | 932 | 541 | 950 | 937 | 380 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 382 | | | 409 | | | 912 | 911 | 399 | 935 | 918 | 380 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 94 | 99 | 96 | 98 | 99 | 100 |
| cM capacity (veh/h) | 1182 | | | 882 | | | 193 | 210 | 500 | 180 | 208 | 671 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 549 | 386 | 34 | 7 |
| Volume Left | 1 | 3 | 12 | 3 |
| Volume Right | 14 | 4 | 19 | 2 |
| cSH | 1182 | 882 | 294 | 239 |
| Volume to Capacity | 0.00 | 0.00 | 0.12 | 0.03 |
| Queue Length 95th (ft) | 0 | 0 | 10 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 18.9 | 20.5 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 18.9 | 20.5 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.9 | | |
| Intersection Capacity Utilization | 38.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | | ✣ | | | ✣ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 19 | 624 | 15 | 12 | 277 | 20 | 8 | 7 | 32 | 4 | 18 | 47 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 20 | 671 | 16 | 13 | 298 | 22 | 9 | 8 | 34 | 4 | 19 | 51 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 528 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 319 | | | 687 | | | 1115 | 1065 | 679 | 1092 | 1062 | 309 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 263 | | | 687 | | | 1124 | 1070 | 679 | 1100 | 1068 | 252 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 94 | 96 | 92 | 97 | 90 | 93 |
| cM capacity (veh/h) | 1213 | | | 916 | | | 143 | 199 | 455 | 155 | 200 | 732 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 708 | 332 | 51 | 74 |
| Volume Left | 20 | 13 | 9 | 4 |
| Volume Right | 16 | 22 | 34 | 51 |
| cSH | 1213 | 916 | 292 | 383 |
| Volume to Capacity | 0.02 | 0.01 | 0.17 | 0.19 |
| Queue Length 95th (ft) | 1 | 1 | 15 | 18 |
| Control Delay (s) | 0.5 | 0.5 | 19.9 | 16.6 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.5 | 0.5 | 19.9 | 16.6 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.3 | | |
| Intersection Capacity Utilization | 53.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 53 | 594 | 14 | 55 | 294 | 28 | 1 | 27 | 29 | 158 | 13 | 14 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 56 | 625 | 15 | 58 | 309 | 29 | 1 | 28 | 31 | 166 | 14 | 15 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 228 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 339 | | | 640 | | | 1036 | 1199 | 320 | 909 | 1192 | 169 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 265 | | | 640 | | | 993 | 1163 | 320 | 860 | 1155 | 88 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 94 | | | 99 | 83 | 96 | 11 | 92 | 98 |
| cM capacity (veh/h) | 1255 | | | 954 | | | 165 | 169 | 682 | 186 | 170 | 919 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 368 | 327 | 213 | 184 | 60 | 195 |
| Volume Left | 56 | 0 | 58 | 0 | 1 | 166 |
| Volume Right | 0 | 15 | 0 | 29 | 31 | 15 |
| cSH | 1255 | 1700 | 954 | 1700 | 273 | 197 |
| Volume to Capacity | 0.04 | 0.19 | 0.06 | 0.11 | 0.22 | 0.99 |
| Queue Length 95th (ft) | 3 | 0 | 5 | 0 | 20 | 211 |
| Control Delay (s) | 1.6 | 0.0 | 2.9 | 0.0 | 21.8 | 111.6 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 0.8 | | 1.6 | | 21.8 | 111.6 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 18.0 | | |
| Intersection Capacity Utilization | 56.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3186 | | | 4960 | | | 5002 | |
| Flt Permitted | 0.44 | 1.00 | | 0.22 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 778 | 3318 | | 388 | 3186 | | | 4960 | | | 5002 | |
| Volume (vph) | 104 | 653 | 24 | 102 | 270 | 115 | 0 | 2472 | 276 | 0 | 2255 | 107 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 107 | 673 | 25 | 105 | 278 | 119 | 0 | 2548 | 285 | 0 | 2325 | 110 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 16 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 107 | 695 | 0 | 105 | 395 | 0 | 0 | 2817 | 0 | 0 | 2429 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 238 | 1015 | | 119 | 975 | | | 2976 | | | 3001 | |
| v/s Ratio Prot | | 0.21 | | | 0.12 | | | c0.57 | | | 0.49 | |
| v/s Ratio Perm | 0.14 | | | c0.27 | | | | | | | | |
| v/c Ratio | 0.45 | 0.68 | | 0.88 | 0.41 | | | 0.95 | | | 0.81 | |
| Uniform Delay, d1 | 23.7 | 25.9 | | 28.0 | 23.4 | | | 15.7 | | | 13.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.69 | |
| Incremental Delay, d2 | 6.0 | 3.8 | | 55.4 | 1.3 | | | 8.0 | | | 1.0 | |
| Delay (s) | 29.8 | 29.7 | | 83.5 | 24.6 | | | 23.8 | | | 10.1 | |
| Level of Service | C | C | | F | C | | | C | | | B | |
| Approach Delay (s) | | 29.7 | | | 36.9 | | | 23.8 | | | 10.1 | |
| Approach LOS | | C | | | D | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.4 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.93 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.4% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

**Year 2025**
**Alternative 3 (Wings Removed Alternative)**
**One-way Couplet**
**AM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 609 | 14 | 17 | 302 | 1 | 3 | 1 | 43 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 662 | 15 | 18 | 328 | 1 | 3 | 1 | 47 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 329 | | | 677 | | | 1045 | 1040 | 670 | 1087 | 1047 | 329 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 329 | | | 677 | | | 1045 | 1040 | 670 | 1087 | 1047 | 329 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 98 | 100 | 90 | 97 | 98 | 100 |
| cM capacity (veh/h) | 1242 | | | 924 | | | 201 | 227 | 461 | 172 | 225 | 717 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 679 | 348 | 51 | 12 |
| Volume Left | 2 | 18 | 3 | 4 |
| Volume Right | 15 | 1 | 47 | 3 |
| cSH | 1242 | 924 | 417 | 243 |
| Volume to Capacity | 0.00 | 0.02 | 0.12 | 0.05 |
| Queue Length 95th (ft) | 0 | 2 | 10 | 4 |
| Control Delay (s) | 0.0 | 0.7 | 14.8 | 20.6 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.7 | 14.8 | 20.6 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 43.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 640 | 14 | 14 | 292 | 3 | 2 | 3 | 41 | 60 | 43 | 26 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 2 | 667 | 15 | 15 | 304 | 3 | 2 | 3 | 43 | 62 | 45 | 27 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 683 | 322 | 48 | 134 |
| Volume Left (vph) | 2 | 15 | 2 | 63 |
| Volume Right (vph) | 15 | 3 | 43 | 27 |
| Hadj (s) | -0.01 | 0.00 | -0.53 | -0.03 |
| Departure Headway (s) | 5.0 | 5.4 | 6.3 | 6.5 |
| Degree Utilization, x | 0.94 | 0.49 | 0.08 | 0.24 |
| Capacity (veh/h) | 715 | 647 | 527 | 525 |
| Control Delay (s) | 43.2 | 13.5 | 9.8 | 11.5 |
| Approach Delay (s) | 43.2 | 13.5 | 9.8 | 11.5 |
| Approach LOS | E | B | A | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 30.2 | | |
| HCM Level of Service | D | | |
| Intersection Capacity Utilization | 55.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 42 | 693 | 6 | 177 | 301 | 70 | 4 | 53 | 44 | 3 | 2 | 4 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 43 | 714 | 6 | 182 | 310 | 72 | 4 | 55 | 45 | 3 | 2 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.93 | | | | | | 0.93 | 0.93 | | 0.93 | 0.93 | 0.93 |
| vC, conflicting volume | 382 | | | 721 | | | 1521 | 1552 | 718 | 1588 | 1519 | 346 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 339 | | | 721 | | | 1557 | 1590 | 718 | 1629 | 1555 | 301 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 80 | | | 94 | 30 | 90 | 88 | 97 | 99 |
| cM capacity (veh/h) | 1151 | | | 890 | | | 69 | 78 | 433 | 25 | 82 | 695 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 764 | 565 | 104 | 9 |
| Volume Left | 43 | 182 | 4 | 3 |
| Volume Right | 6 | 72 | 45 | 4 |
| cSH | 1151 | 890 | 120 | 60 |
| Volume to Capacity | 0.04 | 0.20 | 0.87 | 0.15 |
| Queue Length 95th (ft) | 3 | 19 | 133 | 13 |
| Control Delay (s) | 1.0 | 5.1 | 117.5 | 75.7 |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 1.0 | 5.1 | 117.5 | 75.7 |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 11.5 | | |
| Intersection Capacity Utilization | 84.8% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4929 | |
| Flt Permitted | 0.59 | 1.00 | 1.00 | 0.22 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1076 | 1756 | 1492 | 393 | 1756 | 1492 | | 5012 | | | 4929 | |
| Volume (vph) | 259 | 449 | 32 | 65 | 175 | 137 | 0 | 2605 | 85 | 0 | 2266 | 373 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 264 | 458 | 33 | 66 | 179 | 140 | 0 | 2658 | 87 | 0 | 2312 | 381 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 27 | 0 |
| Lane Group Flow (vph) | 264 | 458 | 30 | 66 | 179 | 139 | 0 | 2741 | 0 | 0 | 2666 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 354 | 578 | 491 | 129 | 578 | 491 | | 2889 | | | 2841 | |
| v/s Ratio Prot | | c0.26 | | | 0.10 | | | c0.55 | | | 0.54 | |
| v/s Ratio Perm | 0.25 | | 0.02 | 0.17 | | 0.09 | | | | | | |
| v/c Ratio | 0.75 | 0.79 | 0.06 | 0.51 | 0.31 | 0.28 | | 0.95 | | | 0.94 | |
| Uniform Delay, d1 | 25.3 | 25.9 | 19.5 | 23.0 | 21.3 | 21.1 | | 16.8 | | | 16.6 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.65 | | | 1.00 | |
| Incremental Delay, d2 | 13.4 | 10.7 | 0.2 | 13.8 | 1.4 | 1.4 | | 4.0 | | | 7.6 | |
| Delay (s) | 38.7 | 36.5 | 19.7 | 36.7 | 22.7 | 22.5 | | 14.9 | | | 24.2 | |
| Level of Service | D | D | B | D | C | C | | B | | | C | |
| Approach Delay (s) | | 36.6 | | | 25.0 | | | 14.9 | | | 24.2 | |
| Approach LOS | | D | | | C | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 21.8 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.89 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 89.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Ave.
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 519 | 14 | 3 | 363 | 4 | 12 | 3 | 18 | 3 | 2 | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 1 | 535 | 14 | 3 | 374 | 4 | 12 | 3 | 19 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 69 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.76 | | | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | |
| vC, conflicting volume | 378 | | | 549 | | | 930 | 929 | 542 | 947 | 934 | 376 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 378 | | | 410 | | | 908 | 907 | 400 | 930 | 914 | 376 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 94 | 99 | 96 | 98 | 99 | 100 |
| cM capacity (veh/h) | 1186 | | | 881 | | | 194 | 211 | 499 | 181 | 209 | 675 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 551 | 381 | 34 | 7 |
| Volume Left | 1 | 3 | 12 | 3 |
| Volume Right | 14 | 4 | 19 | 2 |
| cSH | 1186 | 881 | 295 | 240 |
| Volume to Capacity | 0.00 | 0.00 | 0.12 | 0.03 |
| Queue Length 95th (ft) | 0 | 0 | 10 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 18.8 | 20.4 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 18.8 | 20.4 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.9 | | |
| Intersection Capacity Utilization | 38.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 19 | 619 | 15 | 12 | 277 | 20 | 8 | 7 | 32 | 4 | 19 | 49 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 20 | 666 | 16 | 13 | 298 | 22 | 9 | 8 | 34 | 4 | 20 | 53 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 528 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 319 | | | 682 | | | 1112 | 1060 | 674 | 1087 | 1057 | 309 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 263 | | | 682 | | | 1121 | 1065 | 674 | 1094 | 1062 | 252 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 94 | 96 | 92 | 97 | 90 | 93 |
| cM capacity (veh/h) | 1213 | | | 920 | | | 143 | 201 | 458 | 157 | 202 | 732 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 702 | 332 | 51 | 77 |
| Volume Left | 20 | 13 | 9 | 4 |
| Volume Right | 16 | 22 | 34 | 53 |
| cSH | 1213 | 920 | 293 | 386 |
| Volume to Capacity | 0.02 | 0.01 | 0.17 | 0.20 |
| Queue Length 95th (ft) | 1 | 1 | 15 | 18 |
| Control Delay (s) | 0.5 | 0.5 | 19.8 | 16.7 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.5 | 0.5 | 19.8 | 16.7 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.4 | | |
| Intersection Capacity Utilization | 52.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 47 | 594 | 14 | 55 | 294 | 28 | 1 | 26 | 29 | 158 | 13 | 14 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 49 | 625 | 15 | 58 | 309 | 29 | 1 | 27 | 31 | 166 | 14 | 15 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 228 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 339 | | | 640 | | | 1024 | 1186 | 320 | 896 | 1179 | 169 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 265 | | | 640 | | | 980 | 1150 | 320 | 846 | 1142 | 88 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 94 | | | 99 | 84 | 96 | 14 | 92 | 98 |
| cM capacity (veh/h) | 1255 | | | 954 | | | 170 | 173 | 682 | 193 | 174 | 919 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 362 | 327 | 213 | 184 | 59 | 195 |
| Volume Left | 49 | 0 | 58 | 0 | 1 | 166 |
| Volume Right | 0 | 15 | 0 | 29 | 31 | 15 |
| cSH | 1255 | 1700 | 954 | 1700 | 281 | 203 |
| Volume to Capacity | 0.04 | 0.19 | 0.06 | 0.11 | 0.21 | 0.96 |
| Queue Length 95th (ft) | 3 | 0 | 5 | 0 | 19 | 201 |
| Control Delay (s) | 1.4 | 0.0 | 2.9 | 0.0 | 21.2 | 101.0 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 0.7 | | 1.6 | | 21.2 | 101.0 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 16.5 | | |
| Intersection Capacity Utilization | 55.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3186 | | | 4960 | | | 5002 | |
| Flt Permitted | 0.44 | 1.00 | | 0.22 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 778 | 3318 | | 388 | 3186 | | | 4960 | | | 5002 | |
| Volume (vph) | 104 | 653 | 24 | 102 | 270 | 115 | 0 | 2472 | 276 | 0 | 2255 | 107 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 107 | 673 | 25 | 105 | 278 | 119 | 0 | 2548 | 285 | 0 | 2325 | 110 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 16 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 107 | 695 | 0 | 105 | 395 | 0 | 0 | 2817 | 0 | 0 | 2429 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 238 | 1015 | | 119 | 975 | | | 2976 | | | 3001 | |
| v/s Ratio Prot | | 0.21 | | | 0.12 | | | c0.57 | | | 0.49 | |
| v/s Ratio Perm | 0.14 | | | c0.27 | | | | | | | | |
| v/c Ratio | 0.45 | 0.68 | | 0.88 | 0.41 | | | 0.95 | | | 0.81 | |
| Uniform Delay, d1 | 23.7 | 25.9 | | 28.0 | 23.4 | | | 15.7 | | | 13.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.68 | |
| Incremental Delay, d2 | 6.0 | 3.8 | | 55.4 | 1.3 | | | 8.0 | | | 1.0 | |
| Delay (s) | 29.8 | 29.7 | | 83.5 | 24.6 | | | 23.8 | | | 10.1 | |
| Level of Service | C | C | | F | C | | | C | | | B | |
| Approach Delay (s) | | 29.7 | | | 36.9 | | | 23.8 | | | 10.1 | |
| Approach LOS | | C | | | D | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.4 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.93 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.4% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

**Year 2025**
**Alternative 4 (Battery Caulfield Alternative)**
**One-way Couplet**
**AM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 608 | 14 | 17 | 298 | 1 | 3 | 1 | 43 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 661 | 15 | 18 | 324 | 1 | 3 | 1 | 47 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 325 | | | 676 | | | 1040 | 1035 | 668 | 1082 | 1042 | 324 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 325 | | | 676 | | | 1040 | 1035 | 668 | 1082 | 1042 | 324 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 98 | 100 | 90 | 97 | 98 | 100 |
| cM capacity (veh/h) | 1246 | | | 925 | | | 203 | 229 | 461 | 173 | 227 | 721 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 678 | 343 | 51 | 12 |
| Volume Left | 2 | 18 | 3 | 4 |
| Volume Right | 15 | 1 | 47 | 3 |
| cSH | 1246 | 925 | 418 | 245 |
| Volume to Capacity | 0.00 | 0.02 | 0.12 | 0.05 |
| Queue Length 95th (ft) | 0 | 2 | 10 | 4 |
| Control Delay (s) | 0.0 | 0.7 | 14.8 | 20.4 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.7 | 14.8 | 20.4 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 43.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 639 | 14 | 14 | 292 | 3 | 2 | 3 | 41 | 46 | 37 | 22 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 2 | 666 | 15 | 15 | 304 | 3 | 2 | 3 | 43 | 48 | 39 | 23 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 682 | 322 | 48 | 109 |
| Volume Left (vph) | 2 | 15 | 2 | 48 |
| Volume Right (vph) | 15 | 3 | 43 | 23 |
| Hadj (s) | -0.01 | 0.00 | -0.53 | -0.04 |
| Departure Headway (s) | 4.9 | 5.3 | 6.1 | 6.4 |
| Degree Utilization, x | 0.92 | 0.47 | 0.08 | 0.19 |
| Capacity (veh/h) | 730 | 660 | 539 | 525 |
| Control Delay (s) | 38.5 | 13.0 | 9.7 | 11.0 |
| Approach Delay (s) | 38.5 | 13.0 | 9.7 | 11.0 |
| Approach LOS | E | B | A | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 27.6 | | |
| HCM Level of Service | D | | |
| Intersection Capacity Utilization | 54.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 41 | 679 | 6 | 177 | 301 | 66 | 4 | 50 | 44 | 3 | 2 | 4 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 42 | 700 | 6 | 182 | 310 | 68 | 4 | 52 | 45 | 3 | 2 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 378 | | | 706 | | | 1502 | 1531 | 703 | 1568 | 1500 | 344 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 335 | | | 706 | | | 1537 | 1568 | 703 | 1607 | 1535 | 299 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 80 | | | 94 | 36 | 90 | 89 | 98 | 99 |
| cM capacity (veh/h) | 1155 | | | 901 | | | 72 | 81 | 441 | 29 | 84 | 697 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 748 | 561 | 101 | 9 |
| Volume Left | 42 | 182 | 4 | 3 |
| Volume Right | 6 | 68 | 45 | 4 |
| cSH | 1155 | 901 | 126 | 69 |
| Volume to Capacity | 0.04 | 0.20 | 0.80 | 0.14 |
| Queue Length 95th (ft) | 3 | 19 | 119 | 11 |
| Control Delay (s) | 1.0 | 5.0 | 99.4 | 65.6 |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 1.0 | 5.0 | 99.4 | 65.6 |
| Approach LOS | | | F | F |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 10.0 | | | |
| Intersection Capacity Utilization | 83.7% | | ICU Level of Service | E |
| Analysis Period (min) | 15 | | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4930 | |
| Flt Permitted | 0.59 | 1.00 | 1.00 | 0.23 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1078 | 1756 | 1492 | 401 | 1756 | 1492 | | 5012 | | | 4930 | |
| Volume (vph) | 249 | 445 | 32 | 65 | 174 | 137 | 0 | 2605 | 85 | 0 | 2266 | 370 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 254 | 454 | 33 | 66 | 178 | 140 | 0 | 2658 | 87 | 0 | 2312 | 378 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 26 | 0 |
| Lane Group Flow (vph) | 254 | 454 | 30 | 66 | 178 | 139 | 0 | 2741 | 0 | 0 | 2664 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 355 | 578 | 491 | 132 | 578 | 491 | | 2889 | | | 2842 | |
| v/s Ratio Prot | | c0.26 | | | 0.10 | | | c0.55 | | | 0.54 | |
| v/s Ratio Perm | 0.24 | | 0.02 | 0.16 | | 0.09 | | | | | | |
| v/c Ratio | 0.72 | 0.79 | 0.06 | 0.50 | 0.31 | 0.28 | | 0.95 | | | 0.94 | |
| Uniform Delay, d1 | 25.0 | 25.8 | 19.5 | 22.9 | 21.3 | 21.1 | | 16.8 | | | 16.6 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.65 | | | 1.00 | |
| Incremental Delay, d2 | 11.7 | 10.3 | 0.2 | 12.9 | 1.4 | 1.4 | | 4.0 | | | 7.5 | |
| Delay (s) | 36.7 | 36.1 | 19.7 | 35.8 | 22.6 | 22.5 | | 14.9 | | | 24.1 | |
| Level of Service | D | D | B | D | C | C | | B | | | C | |
| Approach Delay (s) | | 35.6 | | | 24.9 | | | 14.9 | | | 24.1 | |
| Approach LOS | | D | | | C | | | B | | | C | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| HCM Average Control Delay | 21.6 | | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.89 | | | |
| Actuated Cycle Length (s) | 85.0 | | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 89.2% | | ICU Level of Service | E |
| Analysis Period (min) | 15 | | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Ave.
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✥ | | | ✥ | | | ✥ | | | ✥ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 515 | 14 | 3 | 362 | 4 | 12 | 3 | 18 | 3 | 2 | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 1 | 531 | 14 | 3 | 373 | 4 | 12 | 3 | 19 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 69 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.77 | | | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | |
| vC, conflicting volume | 377 | | | 545 | | | 925 | 924 | 538 | 942 | 929 | 375 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 377 | | | 406 | | | 902 | 900 | 397 | 924 | 907 | 375 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 94 | 99 | 96 | 98 | 99 | 100 |
| cM capacity (veh/h) | 1187 | | | 887 | | | 197 | 214 | 503 | 183 | 212 | 676 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 546 | 380 | 34 | 7 |
| Volume Left | 1 | 3 | 12 | 3 |
| Volume Right | 14 | 4 | 19 | 2 |
| cSH | 1187 | 887 | 298 | 243 |
| Volume to Capacity | 0.00 | 0.00 | 0.11 | 0.03 |
| Queue Length 95th (ft) | 0 | 0 | 10 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 18.6 | 20.3 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 18.6 | 20.3 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.9 | | |
| Intersection Capacity Utilization | 38.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✥ | | | ✥ | | | ✥ | | | ✥ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 19 | 617 | 15 | 12 | 277 | 20 | 8 | 7 | 32 | 4 | 18 | 43 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 20 | 663 | 16 | 13 | 298 | 22 | 9 | 8 | 34 | 4 | 19 | 46 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 528 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 319 | | | 680 | | | 1103 | 1058 | 672 | 1085 | 1055 | 309 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 263 | | | 680 | | | 1111 | 1062 | 672 | 1092 | 1059 | 252 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 94 | 96 | 93 | 97 | 90 | 94 |
| cM capacity (veh/h) | 1213 | | | 922 | | | 147 | 202 | 460 | 157 | 202 | 732 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 700 | 332 | 51 | 70 |
| Volume Left | 20 | 13 | 9 | 4 |
| Volume Right | 16 | 22 | 34 | 46 |
| cSH | 1213 | 922 | 296 | 375 |
| Volume to Capacity | 0.02 | 0.01 | 0.17 | 0.19 |
| Queue Length 95th (ft) | 1 | 1 | 15 | 17 |
| Control Delay (s) | 0.5 | 0.5 | 19.6 | 16.8 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.5 | 0.5 | 19.6 | 16.8 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.3 | | |
| Intersection Capacity Utilization | 52.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 45 | 594 | 14 | 55 | 294 | 28 | 1 | 26 | 29 | 158 | 13 | 14 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 47 | 625 | 15 | 58 | 309 | 29 | 1 | 27 | 31 | 166 | 14 | 15 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 228 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 339 | | | 640 | | | 1019 | 1182 | 320 | 892 | 1175 | 169 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 265 | | | 640 | | | 976 | 1146 | 320 | 842 | 1138 | 88 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 94 | | | 99 | 84 | 96 | 15 | 92 | 98 |
| cM capacity (veh/h) | 1255 | | | 954 | | | 171 | 174 | 682 | 195 | 176 | 919 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 360 | 327 | 213 | 184 | 59 | 195 |
| Volume Left | 47 | 0 | 58 | 0 | 1 | 166 |
| Volume Right | 0 | 15 | 0 | 29 | 31 | 15 |
| cSH | 1255 | 1700 | 954 | 1700 | 283 | 205 |
| Volume to Capacity | 0.04 | 0.19 | 0.06 | 0.11 | 0.21 | 0.95 |
| Queue Length 95th (ft) | 3 | 0 | 5 | 0 | 19 | 198 |
| Control Delay (s) | 1.4 | 0.0 | 2.9 | 0.0 | 21.0 | 98.3 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 0.7 | | 1.6 | | 21.0 | 98.3 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 16.1 | | |
| Intersection Capacity Utilization | 55.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3186 | | | 4960 | | | 5002 | |
| Flt Permitted | 0.44 | 1.00 | | 0.22 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 778 | 3318 | | 388 | 3186 | | | 4960 | | | 5002 | |
| Volume (vph) | 104 | 653 | 24 | 102 | 270 | 115 | 0 | 2472 | 276 | 0 | 2255 | 107 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 107 | 673 | 25 | 105 | 278 | 119 | 0 | 2548 | 285 | 0 | 2325 | 110 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 16 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 107 | 695 | 0 | 105 | 395 | 0 | 0 | 2817 | 0 | 0 | 2429 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 238 | 1015 | | 119 | 975 | | | 2976 | | | 3001 | |
| v/s Ratio Prot | | 0.21 | | | 0.12 | | | c0.57 | | | 0.49 | |
| v/s Ratio Perm | 0.14 | | | c0.27 | | | | | | | | |
| v/c Ratio | 0.45 | 0.68 | | 0.88 | 0.41 | | | 0.95 | | | 0.81 | |
| Uniform Delay, d1 | 23.7 | 25.9 | | 28.0 | 23.4 | | | 15.7 | | | 13.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.68 | |
| Incremental Delay, d2 | 6.0 | 3.8 | | 55.4 | 1.3 | | | 8.0 | | | 1.0 | |
| Delay (s) | 29.8 | 29.7 | | 83.5 | 24.6 | | | 23.8 | | | 10.1 | |
| Level of Service | C | C | | F | C | | | C | | | B | |
| Approach Delay (s) | | 29.7 | | | 36.9 | | | 23.8 | | | 10.1 | |
| Approach LOS | | C | | | D | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.4 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.93 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.4% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

**Year 2025**
**Requested No Action Alternative**
**PM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Street

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 356 | 11 | 28 | 491 | 4 | 4 | 1 | 28 | 8 | 3 | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 379 | 12 | 30 | 522 | 4 | 4 | 1 | 30 | 9 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 527 | | | 390 | | | 977 | 975 | 385 | 1003 | 979 | 524 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 527 | | | 390 | | | 977 | 975 | 385 | 1003 | 979 | 524 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 97 | | | 98 | 100 | 96 | 96 | 99 | 100 |
| cM capacity (veh/h) | 1051 | | | 1179 | | | 224 | 247 | 667 | 208 | 245 | 557 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 393 | 556 | 35 | 14 |
| Volume Left | 2 | 30 | 4 | 9 |
| Volume Right | 12 | 4 | 30 | 2 |
| cSH | 1051 | 1179 | 517 | 239 |
| Volume to Capacity | 0.00 | 0.03 | 0.07 | 0.06 |
| Queue Length 95th (ft) | 0 | 2 | 5 | 5 |
| Control Delay (s) | 0.1 | 0.7 | 12.5 | 21.0 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 12.5 | 21.0 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 55.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 38 | 348 | 6 | 20 | 481 | 69 | 9 | 68 | 19 | 80 | 49 | 33 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 40 | 370 | 6 | 21 | 512 | 73 | 10 | 72 | 20 | 85 | 52 | 35 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 417 | 606 | 102 | 172 |
| Volume Left (vph) | 40 | 21 | 10 | 85 |
| Volume Right (vph) | 6 | 73 | 20 | 35 |
| Hadj (s) | 0.01 | -0.07 | -0.10 | -0.02 |
| Departure Headway (s) | 6.0 | 5.6 | 7.3 | 7.0 |
| Degree Utilization, x | 0.69 | 0.95 | 0.21 | 0.34 |
| Capacity (veh/h) | 586 | 631 | 445 | 479 |
| Control Delay (s) | 21.3 | 46.7 | 12.1 | 13.6 |
| Approach Delay (s) | 21.3 | 46.7 | 12.1 | 13.6 |
| Approach LOS | C | E | B | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 31.4 | | |
| HCM Level of Service | D | | |
| Intersection Capacity Utilization | 57.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 441 | 4 | 228 | 567 | 6 | 2 | 2 | 55 | 6 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 469 | 4 | 243 | 603 | 6 | 2 | 2 | 59 | 6 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.84 | | | | | | 0.84 | 0.84 | | 0.84 | 0.84 | 0.84 |
| vC, conflicting volume | 610 | | | 473 | | | 1569 | 1570 | 471 | 1627 | 1569 | 606 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 533 | | | 473 | | | 1681 | 1683 | 471 | 1750 | 1681 | 529 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 78 | | | 96 | 97 | 90 | 85 | 98 | 100 |
| cM capacity (veh/h) | 873 | | | 1099 | | | 52 | 62 | 597 | 41 | 62 | 463 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 476 | 852 | 63 | 9 |
| Volume Left | 2 | 243 | 2 | 6 |
| Volume Right | 4 | 6 | 59 | 1 |
| cSH | 873 | 1099 | 362 | 49 |
| Volume to Capacity | 0.00 | 0.22 | 0.17 | 0.17 |
| Queue Length 95th (ft) | 0 | 21 | 15 | 14 |
| Control Delay (s) | 0.1 | 4.9 | 17.0 | 93.6 |
| Lane LOS | A | A | C | F |
| Approach Delay (s) | 0.1 | 4.9 | 17.0 | 93.6 |
| Approach LOS | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 4.3 | | |
| Intersection Capacity Utilization | 80.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4919 | |
| Flt Permitted | 0.36 | 1.00 | 1.00 | 0.45 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 651 | 1756 | 1492 | 785 | 1756 | 1492 | | 5012 | | | 4919 | |
| Volume (vph) | 201 | 272 | 29 | 81 | 337 | 187 | 0 | 2466 | 80 | 0 | 2521 | 463 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 209 | 283 | 30 | 84 | 351 | 195 | 0 | 2569 | 83 | 0 | 2626 | 482 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 31 | 0 |
| Lane Group Flow (vph) | 209 | 283 | 29 | 84 | 351 | 194 | 0 | 2648 | 0 | 0 | 3077 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 214 | 578 | 491 | 259 | 578 | 491 | | 2889 | | | 2836 | |
| v/s Ratio Prot | | 0.16 | | | 0.20 | | | 0.53 | | | c0.63 | |
| v/s Ratio Perm | c0.32 | | 0.02 | 0.11 | | 0.13 | | | | | | |
| v/c Ratio | 0.98 | 0.49 | 0.06 | 0.32 | 0.61 | 0.39 | | 0.92 | | | 1.09 | |
| Uniform Delay, d1 | 28.2 | 22.8 | 19.5 | 21.4 | 23.9 | 22.0 | | 16.2 | | | 18.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.74 | | | 1.00 | |
| Incremental Delay, d2 | 55.8 | 2.9 | 0.2 | 3.3 | 4.7 | 2.4 | | 2.0 | | | 45.1 | |
| Delay (s) | 83.9 | 25.7 | 19.7 | 24.7 | 28.6 | 24.3 | | 13.9 | | | 63.1 | |
| Level of Service | F | C | B | C | C | C | | B | | | E | |
| Approach Delay (s) | | 48.7 | | | 26.7 | | | 13.9 | | | 63.1 | |
| Approach LOS | | D | | | C | | | B | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 39.8 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 1.04 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 97.9% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 14 | 331 | 7 | 8 | 581 | 6 | 20 | 1 | 18 | 1 | 1 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 14 | 338 | 7 | 8 | 593 | 6 | 20 | 1 | 18 | 1 | 1 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 79 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.87 | | | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | |
| vC, conflicting volume | 599 | | | 345 | | | 987 | 985 | 341 | 1001 | 986 | 596 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 599 | | | 250 | | | 985 | 983 | 246 | 1001 | 984 | 596 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 90 | 100 | 97 | 99 | 100 | 99 |
| cM capacity (veh/h) | 983 | | | 1154 | | | 195 | 214 | 697 | 186 | 214 | 507 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 359 | 607 | 40 | 6 |
| Volume Left | 14 | 8 | 20 | 1 |
| Volume Right | 7 | 6 | 18 | 4 |
| cSH | 983 | 1154 | 293 | 335 |
| Volume to Capacity | 0.01 | 0.01 | 0.14 | 0.02 |
| Queue Length 95th (ft) | 1 | 1 | 12 | 1 |
| Control Delay (s) | 0.5 | 0.2 | 19.2 | 16.0 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.5 | 0.2 | 19.2 | 16.0 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 46.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 57 | 470 | 8 | 18 | 433 | 22 | 9 | 17 | 33 | 20 | 22 | 34 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 58 | 480 | 8 | 18 | 442 | 22 | 9 | 17 | 34 | 20 | 22 | 35 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 524 | | | | | | | |
| pX, platoon unblocked | 0.87 | | | | | | 0.87 | 0.87 | | 0.87 | 0.87 | 0.87 |
| vC, conflicting volume | 464 | | | 488 | | | 1136 | 1101 | 484 | 1132 | 1094 | 453 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 382 | | | 488 | | | 1157 | 1117 | 484 | 1152 | 1108 | 369 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 94 | | | 98 | | | 92 | 90 | 94 | 84 | 87 | 94 |
| cM capacity (veh/h) | 1029 | | | 1086 | | | 121 | 168 | 587 | 125 | 170 | 590 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 546 | 483 | 60 | 78 |
| Volume Left | 58 | 18 | 9 | 20 |
| Volume Right | 8 | 22 | 34 | 35 |
| cSH | 1029 | 1086 | 255 | 219 |
| Volume to Capacity | 0.06 | 0.02 | 0.24 | 0.35 |
| Queue Length 95th (ft) | 4 | 1 | 22 | 38 |
| Control Delay (s) | 1.5 | 0.5 | 23.4 | 30.1 |
| Lane LOS | A | A | C | D |
| Approach Delay (s) | 1.5 | 0.5 | 23.4 | 30.1 |
| Approach LOS | | | C | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 4.1 | | |
| Intersection Capacity Utilization | 62.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 34 | 482 | 7 | 69 | 461 | 16 | 5 | 10 | 33 | 200 | 25 | 8 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 37 | 524 | 8 | 75 | 501 | 17 | 5 | 11 | 36 | 217 | 27 | 9 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 224 | | | | | | | |
| pX, platoon unblocked | 0.91 | | | | | | 0.91 | 0.91 | | 0.91 | 0.91 | 0.91 |
| vC, conflicting volume | 518 | | | 532 | | | 1024 | 1270 | 266 | 1037 | 1265 | 259 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 370 | | | 532 | | | 927 | 1197 | 266 | 941 | 1192 | 85 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 93 | | | 97 | 93 | 95 | 0 | 82 | 99 |
| cM capacity (veh/h) | 1090 | | | 1046 | | | 163 | 153 | 739 | 167 | 154 | 876 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 299 | 270 | 326 | 268 | 52 | 253 |
| Volume Left | 37 | 0 | 75 | 0 | 5 | 217 |
| Volume Right | 0 | 8 | 0 | 17 | 36 | 9 |
| cSH | 1090 | 1700 | 1046 | 1700 | 341 | 170 |
| Volume to Capacity | 0.03 | 0.16 | 0.07 | 0.16 | 0.15 | 1.49 |
| Queue Length 95th (ft) | 3 | 0 | 6 | 0 | 13 | 406 |
| Control Delay (s) | 1.3 | 0.0 | 2.6 | 0.0 | 17.5 | 298.8 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 0.7 | | 1.4 | | 17.5 | 298.8 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 53.0 | | |
| Intersection Capacity Utilization | 59.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| 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 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3309 | | 1668 | 3196 | | | 4968 | | | 4999 | |
| Flt Permitted | 0.34 | 1.00 | | 0.32 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 597 | 3309 | | 556 | 3196 | | | 4968 | | | 4999 | |
| Volume (vph) | 97 | 585 | 34 | 170 | 418 | 163 | 0 | 2287 | 227 | 0 | 2503 | 128 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 100 | 603 | 35 | 175 | 431 | 168 | 0 | 2358 | 234 | 0 | 2580 | 132 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 14 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 100 | 637 | 0 | 175 | 598 | 0 | 0 | 2578 | 0 | 0 | 2706 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Effective Green, g (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | | | 0.51 | | | 0.51 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 239 | 1324 | | 222 | 1278 | | | 2513 | | | 2529 | |
| v/s Ratio Prot | | 0.19 | | | 0.19 | | | 0.52 | | | c0.54 | |
| v/s Ratio Perm | 0.17 | | | c0.31 | | | | | | | | |
| v/c Ratio | 0.42 | 0.48 | | 0.79 | 0.47 | | | 1.03 | | | 1.07 | |
| Uniform Delay, d1 | 18.4 | 18.9 | | 22.3 | 18.8 | | | 21.0 | | | 21.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.79 | |
| Incremental Delay, d2 | 5.3 | 1.3 | | 24.1 | 1.2 | | | 24.9 | | | 32.4 | |
| Delay (s) | 23.7 | 20.2 | | 46.4 | 20.1 | | | 45.9 | | | 48.9 | |
| Level of Service | C | C | | D | C | | | D | | | D | |
| Approach Delay (s) | | 20.7 | | | 26.0 | | | 45.9 | | | 48.9 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 42.1 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.94 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 87.9% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

**Year 2025**
**Alternative 1 (PTMP Alternative) One-way Couplet**
**PM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Street

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 377 | 11 | 28 | 508 | 4 | 4 | 1 | 28 | 8 | 3 | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 401 | 12 | 30 | 540 | 4 | 4 | 1 | 30 | 9 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 545 | | | 413 | | | 1017 | 1015 | 407 | 1044 | 1019 | 543 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 545 | | | 413 | | | 1017 | 1015 | 407 | 1044 | 1019 | 543 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 97 | | | 98 | 100 | 95 | 96 | 99 | 100 |
| cM capacity (veh/h) | 1035 | | | 1157 | | | 210 | 233 | 649 | 195 | 232 | 544 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 415 | 574 | 35 | 14 |
| Volume Left | 2 | 30 | 4 | 9 |
| Volume Right | 12 | 4 | 30 | 2 |
| cSH | 1035 | 1157 | 496 | 225 |
| Volume to Capacity | 0.00 | 0.03 | 0.07 | 0.06 |
| Queue Length 95th (ft) | 0 | 2 | 6 | 5 |
| Control Delay (s) | 0.1 | 0.7 | 12.8 | 22.0 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 12.8 | 22.0 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 56.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 405 | 6 | 20 | 481 | 4 | 9 | 4 | 19 | 147 | 81 | 50 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 431 | 6 | 21 | 512 | 4 | 10 | 4 | 20 | 156 | 86 | 53 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 439 | 537 | 34 | 296 |
| Volume Left (vph) | 2 | 21 | 10 | 156 |
| Volume Right (vph) | 6 | 4 | 20 | 53 |
| Hadj (s) | -0.01 | 0.00 | -0.30 | 0.00 |
| Departure Headway (s) | 6.1 | 5.9 | 7.5 | 6.8 |
| Degree Utilization, x | 0.74 | 0.88 | 0.07 | 0.55 |
| Capacity (veh/h) | 573 | 594 | 405 | 505 |
| Control Delay (s) | 24.5 | 37.9 | 11.1 | 17.8 |
| Approach Delay (s) | 24.5 | 37.9 | 11.1 | 17.8 |
| Approach LOS | C | E | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 28.2 | | |
| HCM Level of Service | D | | |
| Intersection Capacity Utilization | 68.6% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 59 | 508 | 4 | 228 | 502 | 154 | 2 | 106 | 55 | 6 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 63 | 540 | 4 | 243 | 534 | 164 | 2 | 113 | 59 | 6 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.82 | | | | | | 0.82 | 0.82 | | 0.82 | 0.82 | 0.82 |
| vC, conflicting volume | 698 | | | 545 | | | 1771 | 1851 | 543 | 1884 | 1771 | 616 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 632 | | | 545 | | | 1939 | 2036 | 543 | 2077 | 1939 | 532 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 92 | | | 77 | | | 93 | 0 | 89 | 0 | 97 | 100 |
| cM capacity (veh/h) | 789 | | | 1035 | | | 31 | 33 | 544 | 0 | 38 | 453 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 607 | 940 | 173 | 9 |
| Volume Left | 63 | 243 | 2 | 6 |
| Volume Right | 4 | 164 | 59 | 1 |
| cSH | 789 | 1035 | 49 | 0 |
| Volume to Capacity | 0.08 | 0.23 | 3.57 | Err |
| Queue Length 95th (ft) | 6 | 23 | Err | Err |
| Control Delay (s) | 2.1 | 5.3 | Err | Err |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 2.1 | 5.3 | Err | Err |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | Err | | |
| Intersection Capacity Utilization | 97.6% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.97 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4906 | |
| Flt Permitted | 0.33 | 1.00 | 1.00 | 0.42 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 599 | 1756 | 1492 | 738 | 1756 | 1492 | | 5012 | | | 4906 | |
| Volume (vph) | 249 | 291 | 29 | 81 | 358 | 187 | 0 | 2466 | 80 | 0 | 2521 | 526 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 259 | 303 | 30 | 84 | 373 | 195 | 0 | 2569 | 83 | 0 | 2626 | 548 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 38 | 0 |
| Lane Group Flow (vph) | 259 | 303 | 29 | 84 | 373 | 194 | 0 | 2648 | 0 | 0 | 3136 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 197 | 578 | 491 | 243 | 578 | 491 | | 2889 | | | 2828 | |
| v/s Ratio Prot | | 0.17 | | | 0.21 | | | 0.53 | | | c0.64 | |
| v/s Ratio Perm | c0.43 | | 0.02 | 0.11 | | 0.13 | | | | | | |
| v/c Ratio | 1.31 | 0.52 | 0.06 | 0.35 | 0.65 | 0.39 | | 0.92 | | | 1.11 | |
| Uniform Delay, d1 | 28.5 | 23.1 | 19.5 | 21.6 | 24.3 | 22.0 | | 16.2 | | | 18.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.74 | | | 1.00 | |
| Incremental Delay, d2 | 172.9 | 3.4 | 0.2 | 3.9 | 5.5 | 2.4 | | 2.0 | | | 54.8 | |
| Delay (s) | 201.4 | 26.5 | 19.7 | 25.4 | 29.7 | 24.3 | | 13.9 | | | 72.8 | |
| Level of Service | F | C | B | C | C | C | | B | | | E | |
| Approach Delay (s) | | 102.7 | | | 27.6 | | | 13.9 | | | 72.8 | |
| Approach LOS | | F | | | C | | | B | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 49.1 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 1.18 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 103.1% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✥ | | | ✥ | | | ✥ | | | ✥ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 14 | 350 | 7 | 8 | 602 | 6 | 20 | 1 | 18 | 1 | 1 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 14 | 357 | 7 | 8 | 614 | 6 | 20 | 1 | 18 | 1 | 1 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 79 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.86 | | | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | |
| vC, conflicting volume | 620 | | | 364 | | | 1028 | 1026 | 361 | 1042 | 1027 | 617 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 620 | | | 263 | | | 1032 | 1030 | 259 | 1049 | 1031 | 617 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 89 | 99 | 97 | 99 | 99 | 99 |
| cM capacity (veh/h) | 965 | | | 1127 | | | 178 | 198 | 677 | 170 | 198 | 493 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 379 | 629 | 40 | 6 |
| Volume Left | 14 | 8 | 20 | 1 |
| Volume Right | 7 | 6 | 18 | 4 |
| cSH | 965 | 1127 | 271 | 315 |
| Volume to Capacity | 0.01 | 0.01 | 0.15 | 0.02 |
| Queue Length 95th (ft) | 1 | 1 | 13 | 1 |
| Control Delay (s) | 0.5 | 0.2 | 20.5 | 16.6 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.5 | 0.2 | 20.5 | 16.6 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 47.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✥ | | | ✥ | | | ✥ | | | ✥ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 10 | 551 | 8 | 18 | 433 | 15 | 9 | 7 | 33 | 28 | 24 | 55 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 10 | 562 | 8 | 18 | 442 | 15 | 9 | 7 | 34 | 29 | 24 | 56 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 524 | | | | | | | |
| pX, platoon unblocked | 0.87 | | | | | | 0.87 | 0.87 | | 0.87 | 0.87 | 0.87 |
| vC, conflicting volume | 457 | | | 570 | | | 1141 | 1081 | 566 | 1110 | 1077 | 449 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 375 | | | 570 | | | 1163 | 1093 | 566 | 1127 | 1089 | 366 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 98 | | | 92 | 96 | 94 | 80 | 87 | 91 |
| cM capacity (veh/h) | 1038 | | | 1012 | | | 120 | 182 | 527 | 142 | 184 | 594 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 581 | 476 | 50 | 109 |
| Volume Left | 10 | 18 | 9 | 29 |
| Volume Right | 8 | 15 | 34 | 56 |
| cSH | 1038 | 1012 | 278 | 254 |
| Volume to Capacity | 0.01 | 0.02 | 0.18 | 0.43 |
| Queue Length 95th (ft) | 1 | 1 | 16 | 51 |
| Control Delay (s) | 0.3 | 0.5 | 20.7 | 29.4 |
| Lane LOS | A | A | C | D |
| Approach Delay (s) | 0.3 | 0.5 | 20.7 | 29.4 |
| Approach LOS | | | C | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.8 | | |
| Intersection Capacity Utilization | 49.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
106: California Street & 14th Avenue 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 114 | 490 | 7 | 69 | 457 | 20 | 2 | 29 | 33 | 200 | 25 | 8 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 124 | 533 | 8 | 75 | 497 | 22 | 2 | 32 | 36 | 217 | 27 | 9 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 224 | | | | | | | |
| pX, platoon unblocked | 0.91 | | | | | | 0.91 | 0.91 | | 0.91 | 0.91 | 0.91 |
| vC, conflicting volume | 518 | | | 540 | | | 1205 | 1453 | 270 | 1223 | 1446 | 259 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 370 | | | 540 | | | 1125 | 1398 | 270 | 1146 | 1390 | 85 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 89 | | | 93 | | | 98 | 70 | 95 | 0 | 75 | 99 |
| cM capacity (veh/h) | 1090 | | | 1038 | | | 102 | 106 | 734 | 91 | 107 | 876 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 390 | 274 | 323 | 270 | 70 | 253 |
| Volume Left | 124 | 0 | 75 | 0 | 2 | 217 |
| Volume Right | 0 | 8 | 0 | 22 | 36 | 9 |
| cSH | 1090 | 1700 | 1038 | 1700 | 190 | 95 |
| Volume to Capacity | 0.11 | 0.16 | 0.07 | 0.16 | 0.37 | 2.65 |
| Queue Length 95th (ft) | 10 | 0 | 6 | 0 | 39 | 593 |
| Control Delay (s) | 3.6 | 0.0 | 2.6 | 0.0 | 34.6 | 843.7 |
| Lane LOS | A | | A | | D | F |
| Approach Delay (s) | 2.1 | | 1.4 | | 34.6 | 843.7 |
| Approach LOS | | | | | D | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 138.1 | | |
| Intersection Capacity Utilization | 61.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
107: California Street & Park Presidio Boulevard 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| 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 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3309 | | 1668 | 3196 | | | 4968 | | | 4999 | |
| Flt Permitted | 0.34 | 1.00 | | 0.31 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 597 | 3309 | | 548 | 3196 | | | 4968 | | | 4999 | |
| Volume (vph) | 97 | 593 | 34 | 170 | 418 | 163 | 0 | 2287 | 227 | 0 | 2503 | 128 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 100 | 611 | 35 | 175 | 431 | 168 | 0 | 2358 | 234 | 0 | 2580 | 132 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 14 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 100 | 645 | 0 | 175 | 598 | 0 | 0 | 2578 | 0 | 0 | 2706 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Effective Green, g (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | | | 0.51 | | | 0.51 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 239 | 1324 | | 219 | 1278 | | | 2513 | | | 2529 | |
| v/s Ratio Prot | | 0.20 | | | 0.19 | | | 0.52 | | | c0.54 | |
| v/s Ratio Perm | 0.17 | | | c0.32 | | | | | | | | |
| v/c Ratio | 0.42 | 0.49 | | 0.80 | 0.47 | | | 1.03 | | | 1.07 | |
| Uniform Delay, d1 | 18.4 | 19.0 | | 22.5 | 18.8 | | | 21.0 | | | 21.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.80 | |
| Incremental Delay, d2 | 5.3 | 1.3 | | 25.5 | 1.2 | | | 24.9 | | | 32.4 | |
| Delay (s) | 23.7 | 20.3 | | 48.0 | 20.1 | | | 45.9 | | | 49.1 | |
| Level of Service | C | C | | D | C | | | D | | | D | |
| Approach Delay (s) | | 20.7 | | | 26.4 | | | 45.9 | | | 49.1 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 42.2 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.95 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.1% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

**Year 2025**
**Alternative 2 (Wings Retained/Trust Revised Alternative) One-way Couplet**
**PM Peak Hour**

HCM Unsignalized Intersection Capacity Analysis
100: Lake Street & 17th Street
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 357 | 11 | 28 | 487 | 4 | 4 | 1 | 28 | 8 | 3 | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 380 | 12 | 30 | 518 | 4 | 4 | 1 | 30 | 9 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 522 | | | 391 | | | 973 | 972 | 386 | 1000 | 976 | 520 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 522 | | | 391 | | | 973 | 972 | 386 | 1000 | 976 | 520 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 97 | | | 98 | 100 | 96 | 96 | 99 | 100 |
| cM capacity (veh/h) | 1054 | | | 1178 | | | 225 | 248 | 667 | 209 | 246 | 560 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 394 | 552 | 35 | 14 |
| Volume Left | 2 | 30 | 4 | 9 |
| Volume Right | 12 | 4 | 30 | 2 |
| cSH | 1054 | 1178 | 517 | 240 |
| Volume to Capacity | 0.00 | 0.03 | 0.07 | 0.06 |
| Queue Length 95th (ft) | 0 | 2 | 5 | 5 |
| Control Delay (s) | 0.1 | 0.7 | 12.5 | 20.9 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 12.5 | 20.9 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 55.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



HCM Unsignalized Intersection Capacity Analysis
101: Lake Street & 15th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 385 | 6 | 20 | 481 | 4 | 9 | 4 | 19 | 66 | 43 | 29 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 410 | 6 | 21 | 512 | 4 | 10 | 4 | 20 | 70 | 46 | 31 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 418 | 537 | 34 | 147 |
| Volume Left (vph) | 2 | 21 | 10 | 70 |
| Volume Right (vph) | 6 | 4 | 20 | 31 |
| Hadj (s) | -0.01 | 0.00 | -0.30 | -0.03 |
| Departure Headway (s) | 5.2 | 5.1 | 6.4 | 6.3 |
| Degree Utilization, x | 0.61 | 0.76 | 0.06 | 0.26 |
| Capacity (veh/h) | 660 | 691 | 471 | 511 |
| Control Delay (s) | 16.0 | 22.4 | 9.8 | 11.5 |
| Approach Delay (s) | 16.0 | 22.4 | 9.8 | 11.5 |
| Approach LOS | C | C | A | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 18.3 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 59.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 39 | 427 | 4 | 228 | 502 | 73 | 2 | 67 | 55 | 6 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 41 | 454 | 4 | 243 | 534 | 78 | 2 | 71 | 59 | 6 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.83 | | | | | | 0.83 | 0.83 | | 0.83 | 0.83 | 0.83 |
| vC, conflicting volume | 612 | | | 459 | | | 1599 | 1636 | 456 | 1691 | 1599 | 573 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 535 | | | 459 | | | 1718 | 1762 | 456 | 1829 | 1718 | 488 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 95 | | | 78 | | | 95 | 0 | 90 | 0 | 98 | 100 |
| cM capacity (veh/h) | 871 | | | 1113 | | | 47 | 53 | 608 | 0 | 56 | 487 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 500 | 854 | 132 | 9 |
| Volume Left | 41 | 243 | 2 | 6 |
| Volume Right | 4 | 78 | 59 | 1 |
| cSH | 871 | 1113 | 89 | 0 |
| Volume to Capacity | 0.05 | 0.22 | 1.49 | Err |
| Queue Length 95th (ft) | 4 | 21 | 256 | Err |
| Control Delay (s) | 1.3 | 4.8 | 353.4 | Err |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 1.3 | 4.8 | 353.4 | Err |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | Err | | |
| Intersection Capacity Utilization | 85.3% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4918 | |
| Flt Permitted | 0.36 | 1.00 | 1.00 | 0.45 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 648 | 1756 | 1492 | 795 | 1756 | 1492 | | 5012 | | | 4918 | |
| Volume (vph) | 191 | 268 | 29 | 81 | 338 | 187 | 0 | 2466 | 80 | 0 | 2521 | 465 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 199 | 279 | 30 | 84 | 352 | 195 | 0 | 2569 | 83 | 0 | 2626 | 484 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 31 | 0 |
| Lane Group Flow (vph) | 199 | 279 | 29 | 84 | 352 | 194 | 0 | 2648 | 0 | 0 | 3079 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 213 | 578 | 491 | 262 | 578 | 491 | | 2889 | | | 2835 | |
| v/s Ratio Prot | | 0.16 | | | 0.20 | | | 0.53 | | | c0.63 | |
| v/s Ratio Perm | c0.31 | | 0.02 | 0.11 | | 0.13 | | | | | | |
| v/c Ratio | 0.93 | 0.48 | 0.06 | 0.32 | 0.61 | 0.39 | | 0.92 | | | 1.09 | |
| Uniform Delay, d1 | 27.6 | 22.7 | 19.5 | 21.4 | 23.9 | 22.0 | | 16.2 | | | 18.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.74 | | | 1.00 | |
| Incremental Delay, d2 | 46.6 | 2.9 | 0.2 | 3.2 | 4.7 | 2.4 | | 2.0 | | | 45.5 | |
| Delay (s) | 74.2 | 25.6 | 19.7 | 24.6 | 28.6 | 24.3 | | 13.9 | | | 63.5 | |
| Level of Service | E | C | B | C | C | C | | B | | | E | |
| Approach Delay (s) | | 44.3 | | | 26.8 | | | 13.9 | | | 63.5 | |
| Approach LOS | | D | | | C | | | B | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 39.7 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 1.03 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 97.4% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 14 | 327 | 7 | 8 | 582 | 6 | 20 | 1 | 18 | 1 | 1 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 14 | 334 | 7 | 8 | 594 | 6 | 20 | 1 | 18 | 1 | 1 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 79 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.88 | | | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| vC, conflicting volume | 600 | | | 341 | | | 984 | 982 | 337 | 998 | 983 | 597 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 600 | | | 247 | | | 981 | 980 | 243 | 998 | 980 | 597 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 90 | 100 | 97 | 99 | 100 | 99 |
| cM capacity (veh/h) | 982 | | | 1160 | | | 196 | 216 | 701 | 188 | 216 | 507 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 355 | 608 | 40 | 6 |
| Volume Left | 14 | 8 | 20 | 1 |
| Volume Right | 7 | 6 | 18 | 4 |
| cSH | 982 | 1160 | 295 | 336 |
| Volume to Capacity | 0.01 | 0.01 | 0.13 | 0.02 |
| Queue Length 95th (ft) | 1 | 1 | 12 | 1 |
| Control Delay (s) | 0.5 | 0.2 | 19.1 | 15.9 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.5 | 0.2 | 19.1 | 15.9 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 46.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 10 | 518 | 8 | 18 | 433 | 15 | 9 | 7 | 33 | 18 | 21 | 29 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 10 | 529 | 8 | 18 | 442 | 15 | 9 | 7 | 34 | 18 | 21 | 30 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 524 | | | | | | | |
| pX, platoon unblocked | 0.87 | | | | | | 0.87 | 0.87 | | 0.87 | 0.87 | 0.87 |
| vC, conflicting volume | 457 | | | 537 | | | 1080 | 1047 | 533 | 1077 | 1043 | 449 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 375 | | | 537 | | | 1092 | 1054 | 533 | 1088 | 1050 | 366 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 98 | | | 94 | 96 | 94 | 88 | 89 | 95 |
| cM capacity (veh/h) | 1038 | | | 1042 | | | 143 | 192 | 551 | 151 | 194 | 594 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 547 | 476 | 50 | 69 |
| Volume Left | 10 | 18 | 9 | 18 |
| Volume Right | 8 | 15 | 34 | 30 |
| cSH | 1038 | 1042 | 308 | 246 |
| Volume to Capacity | 0.01 | 0.02 | 0.16 | 0.28 |
| Queue Length 95th (ft) | 1 | 1 | 14 | 28 |
| Control Delay (s) | 0.3 | 0.5 | 18.9 | 25.3 |
| Lane LOS | A | A | C | D |
| Approach Delay (s) | 0.3 | 0.5 | 18.9 | 25.3 |
| Approach LOS | | | C | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.7 | | |
| Intersection Capacity Utilization | 45.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 81 | 481 | 7 | 69 | 457 | 20 | 2 | 23 | 33 | 200 | 25 | 8 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 88 | 523 | 8 | 75 | 497 | 22 | 2 | 25 | 36 | 217 | 27 | 9 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 224 | | | | | | | |
| pX, platoon unblocked | 0.91 | | | | | | 0.91 | 0.91 | | 0.91 | 0.91 | 0.91 |
| vC, conflicting volume | 518 | | | 530 | | | 1123 | 1371 | 265 | 1143 | 1364 | 259 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 370 | | | 530 | | | 1036 | 1308 | 265 | 1058 | 1301 | 85 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 92 | | | 93 | | | 98 | 80 | 95 | 0 | 78 | 99 |
| cM capacity (veh/h) | 1090 | | | 1047 | | | 126 | 125 | 739 | 119 | 126 | 876 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 349 | 269 | 323 | 270 | 63 | 253 |
| Volume Left | 88 | 0 | 75 | 0 | 2 | 217 |
| Volume Right | 0 | 8 | 0 | 22 | 36 | 9 |
| cSH | 1090 | 1700 | 1047 | 1700 | 237 | 123 |
| Volume to Capacity | 0.08 | 0.16 | 0.07 | 0.16 | 0.27 | 2.06 |
| Queue Length 95th (ft) | 7 | 0 | 6 | 0 | 26 | 521 |
| Control Delay (s) | 2.8 | 0.0 | 2.6 | 0.0 | 25.6 | 562.4 |
| Lane LOS | A | | A | | D | F |
| Approach Delay (s) | 1.6 | | 1.4 | | 25.6 | 562.4 |
| Approach LOS | | | | | D | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 95.4 | | |
| Intersection Capacity Utilization | 60.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| 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 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3308 | | 1668 | 3196 | | | 4968 | | | 4999 | |
| Flt Permitted | 0.34 | 1.00 | | 0.32 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 597 | 3308 | | 558 | 3196 | | | 4968 | | | 4999 | |
| Volume (vph) | 97 | 583 | 34 | 170 | 418 | 163 | 0 | 2287 | 227 | 0 | 2503 | 128 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 100 | 601 | 35 | 175 | 431 | 168 | 0 | 2358 | 234 | 0 | 2580 | 132 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 14 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 100 | 635 | 0 | 175 | 598 | 0 | 0 | 2578 | 0 | 0 | 2706 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Effective Green, g (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | | | 0.51 | | | 0.51 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 239 | 1323 | | 223 | 1278 | | | 2513 | | | 2529 | |
| v/s Ratio Prot | | 0.19 | | | 0.19 | | | 0.52 | | | c0.54 | |
| v/s Ratio Perm | 0.17 | | | c0.31 | | | | | | | | |
| v/c Ratio | 0.42 | 0.48 | | 0.78 | 0.47 | | | 1.03 | | | 1.07 | |
| Uniform Delay, d1 | 18.4 | 18.9 | | 22.3 | 18.8 | | | 21.0 | | | 21.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.79 | |
| Incremental Delay, d2 | 5.3 | 1.3 | | 23.7 | 1.2 | | | 24.9 | | | 32.4 | |
| Delay (s) | 23.7 | 20.2 | | 46.0 | 20.1 | | | 45.9 | | | 49.0 | |
| Level of Service | C | C | | D | C | | | D | | | D | |
| Approach Delay (s) | | 20.7 | | | 25.9 | | | 45.9 | | | 49.0 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 42.1 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.94 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 87.8% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

**Year 2025**
**Alternative 3 (Wings Removed Alternative)**
**One-way Couplet**
**PM Peak Hour**

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 358 | 11 | 28 | 485 | 4 | 4 | 1 | 28 | 8 | 3 | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 381 | 12 | 30 | 516 | 4 | 4 | 1 | 30 | 9 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 520 | | | 393 | | | 972 | 971 | 387 | 999 | 974 | 518 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 520 | | | 393 | | | 972 | 971 | 387 | 999 | 974 | 518 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 97 | | | 98 | 100 | 96 | 96 | 99 | 100 |
| cM capacity (veh/h) | 1056 | | | 1177 | | | 226 | 248 | 666 | 209 | 247 | 561 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 395 | 550 | 35 | 14 |
| Volume Left | 2 | 30 | 4 | 9 |
| Volume Right | 12 | 4 | 30 | 2 |
| cSH | 1056 | 1177 | 517 | 241 |
| Volume to Capacity | 0.00 | 0.03 | 0.07 | 0.06 |
| Queue Length 95th (ft) | 0 | 2 | 5 | 5 |
| Control Delay (s) | 0.1 | 0.7 | 12.5 | 20.9 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 12.5 | 20.9 |
| Approach LOS | | | B | C |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.2 | | | |
| Intersection Capacity Utilization | 55.6% | | ICU Level of Service | B |
| Analysis Period (min) | 15 | | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 386 | 6 | 20 | 481 | 4 | 9 | 4 | 19 | 59 | 40 | 27 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 411 | 6 | 21 | 512 | 4 | 10 | 4 | 20 | 63 | 43 | 29 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 419 | 537 | 34 | 134 |
| Volume Left (vph) | 2 | 21 | 10 | 63 |
| Volume Right (vph) | 6 | 4 | 20 | 29 |
| Hadj (s) | -0.01 | 0.00 | -0.30 | -0.03 |
| Departure Headway (s) | 5.2 | 5.0 | 6.3 | 6.3 |
| Degree Utilization, x | 0.60 | 0.75 | 0.06 | 0.23 |
| Capacity (veh/h) | 669 | 701 | 476 | 511 |
| Control Delay (s) | 15.7 | 21.7 | 9.7 | 11.2 |
| Approach Delay (s) | 15.7 | 21.7 | 9.7 | 11.2 |
| Approach LOS | C | C | A | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | 17.8 | | | |
| HCM Level of Service | C | | | |
| Intersection Capacity Utilization | 58.2% | | ICU Level of Service | B |
| Analysis Period (min) | 15 | | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 40 | 420 | 4 | 228 | 502 | 76 | 2 | 69 | 55 | 6 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 43 | 447 | 4 | 243 | 534 | 81 | 2 | 73 | 59 | 6 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.83 | | | | | | 0.83 | 0.83 | | 0.83 | 0.83 | 0.83 |
| vC, conflicting volume | 615 | | | 451 | | | 1595 | 1634 | 449 | 1689 | 1596 | 574 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 538 | | | 451 | | | 1714 | 1760 | 449 | 1826 | 1714 | 490 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 95 | | | 78 | | | 96 | 0 | 90 | 0 | 98 | 100 |
| cM capacity (veh/h) | 867 | | | 1120 | | | 47 | 53 | 614 | 0 | 57 | 486 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 494 | 857 | 134 | 9 |
| Volume Left | 43 | 243 | 2 | 6 |
| Volume Right | 4 | 81 | 59 | 1 |
| cSH | 867 | 1120 | 88 | 0 |
| Volume to Capacity | 0.05 | 0.22 | 1.52 | Err |
| Queue Length 95th (ft) | 4 | 21 | 263 | Err |
| Control Delay (s) | 1.4 | 4.8 | 368.5 | Err |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 1.4 | 4.8 | 368.5 | Err |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | Err | | |
| Intersection Capacity Utilization | 85.3% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4918 | |
| Flt Permitted | 0.36 | 1.00 | 1.00 | 0.46 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 646 | 1756 | 1492 | 799 | 1756 | 1492 | | 5012 | | | 4918 | |
| Volume (vph) | 186 | 266 | 29 | 81 | 339 | 187 | 0 | 2466 | 80 | 0 | 2521 | 467 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 194 | 277 | 30 | 84 | 353 | 195 | 0 | 2569 | 83 | 0 | 2626 | 486 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 31 | 0 |
| Lane Group Flow (vph) | 194 | 277 | 29 | 84 | 353 | 194 | 0 | 2648 | 0 | 0 | 3081 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 213 | 578 | 491 | 263 | 578 | 491 | | 2889 | | | 2835 | |
| v/s Ratio Prot | | 0.16 | | | 0.20 | | | 0.53 | | | c0.63 | |
| v/s Ratio Perm | c0.30 | | 0.02 | 0.11 | | 0.13 | | | | | | |
| v/c Ratio | 0.91 | 0.48 | 0.06 | 0.32 | 0.61 | 0.39 | | 0.92 | | | 1.09 | |
| Uniform Delay, d1 | 27.3 | 22.7 | 19.5 | 21.4 | 23.9 | 22.0 | | 16.2 | | | 18.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.74 | | | 1.00 | |
| Incremental Delay, d2 | 42.1 | 2.8 | 0.2 | 3.2 | 4.8 | 2.4 | | 2.0 | | | 45.8 | |
| Delay (s) | 69.4 | 25.5 | 19.7 | 24.5 | 28.7 | 24.3 | | 13.9 | | | 63.8 | |
| Level of Service | E | C | B | C | C | C | | B | | | E | |
| Approach Delay (s) | | 42.2 | | | 26.8 | | | 13.9 | | | 63.8 | |
| Approach LOS | | D | | | C | | | B | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 39.6 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 1.02 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 97.3% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 14 | 325 | 7 | 8 | 583 | 6 | 20 | 1 | 18 | 1 | 1 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 14 | 332 | 7 | 8 | 595 | 6 | 20 | 1 | 18 | 1 | 1 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 79 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.88 | | | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| vC, conflicting volume | 601 | | | 339 | | | 983 | 981 | 335 | 997 | 982 | 598 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 601 | | | 246 | | | 980 | 978 | 242 | 997 | 979 | 598 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 90 | 100 | 97 | 99 | 100 | 99 |
| cM capacity (veh/h) | 981 | | | 1163 | | | 197 | 216 | 703 | 188 | 216 | 506 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 353 | 609 | 40 | 6 |
| Volume Left | 14 | 8 | 20 | 1 |
| Volume Right | 7 | 6 | 18 | 4 |
| cSH | 981 | 1163 | 296 | 336 |
| Volume to Capacity | 0.01 | 0.01 | 0.13 | 0.02 |
| Queue Length 95th (ft) | 1 | 1 | 11 | 1 |
| Control Delay (s) | 0.5 | 0.2 | 19.1 | 15.9 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.5 | 0.2 | 19.1 | 15.9 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 46.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 10 | 519 | 8 | 18 | 433 | 15 | 9 | 7 | 33 | 18 | 21 | 27 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 10 | 530 | 8 | 18 | 442 | 15 | 9 | 7 | 34 | 18 | 21 | 28 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 524 | | | | | | | |
| pX, platoon unblocked | 0.87 | | | | | | 0.87 | 0.87 | | 0.87 | 0.87 | 0.87 |
| vC, conflicting volume | 457 | | | 538 | | | 1079 | 1048 | 534 | 1078 | 1044 | 449 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 375 | | | 538 | | | 1090 | 1055 | 534 | 1089 | 1051 | 366 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 98 | | | 94 | 96 | 94 | 88 | 89 | 95 |
| cM capacity (veh/h) | 1038 | | | 1041 | | | 144 | 192 | 550 | 151 | 193 | 594 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 548 | 476 | 50 | 67 |
| Volume Left | 10 | 18 | 9 | 18 |
| Volume Right | 8 | 15 | 34 | 28 |
| cSH | 1038 | 1041 | 309 | 241 |
| Volume to Capacity | 0.01 | 0.02 | 0.16 | 0.28 |
| Queue Length 95th (ft) | 1 | 1 | 14 | 28 |
| Control Delay (s) | 0.3 | 0.5 | 18.9 | 25.6 |
| Lane LOS | A | A | C | D |
| Approach Delay (s) | 0.3 | 0.5 | 18.9 | 25.6 |
| Approach LOS | | | C | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.7 | | |
| Intersection Capacity Utilization | 45.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 83 | 480 | 7 | 69 | 457 | 20 | 2 | 24 | 33 | 200 | 25 | 8 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 90 | 522 | 8 | 75 | 497 | 22 | 2 | 26 | 36 | 217 | 27 | 9 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 224 | | | | | | | |
| pX, platoon unblocked | 0.91 | | | | | | 0.91 | 0.91 | | 0.91 | 0.91 | 0.91 |
| vC, conflicting volume | 518 | | | 529 | | | 1127 | 1374 | 265 | 1148 | 1367 | 259 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 370 | | | 529 | | | 1039 | 1312 | 265 | 1063 | 1304 | 85 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 92 | | | 93 | | | 98 | 79 | 95 | 0 | 78 | 99 |
| cM capacity (veh/h) | 1090 | | | 1048 | | | 125 | 124 | 740 | 116 | 125 | 876 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 351 | 268 | 323 | 270 | 64 | 253 |
| Volume Left | 90 | 0 | 75 | 0 | 2 | 217 |
| Volume Right | 0 | 8 | 0 | 22 | 36 | 9 |
| cSH | 1090 | 1700 | 1048 | 1700 | 232 | 121 |
| Volume to Capacity | 0.08 | 0.16 | 0.07 | 0.16 | 0.28 | 2.10 |
| Queue Length 95th (ft) | 7 | 0 | 6 | 0 | 27 | 527 |
| Control Delay (s) | 2.8 | 0.0 | 2.6 | 0.0 | 26.3 | 579.4 |
| Lane LOS | A | | A | | D | F |
| Approach Delay (s) | 1.6 | | 1.4 | | 26.3 | 579.4 |
| Approach LOS | | | | | D | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 98.2 | | |
| Intersection Capacity Utilization | 60.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| 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 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3308 | | 1668 | 3196 | | | 4968 | | | 4999 | |
| Flt Permitted | 0.34 | 1.00 | | 0.32 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 597 | 3308 | | 558 | 3196 | | | 4968 | | | 4999 | |
| Volume (vph) | 97 | 583 | 34 | 170 | 418 | 163 | 0 | 2287 | 227 | 0 | 2503 | 128 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 100 | 601 | 35 | 175 | 431 | 168 | 0 | 2358 | 234 | 0 | 2580 | 132 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 14 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 100 | 635 | 0 | 175 | 598 | 0 | 0 | 2578 | 0 | 0 | 2706 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Effective Green, g (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | | | 0.51 | | | 0.51 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 239 | 1323 | | 223 | 1278 | | | 2513 | | | 2529 | |
| v/s Ratio Prot | | 0.19 | | | 0.19 | | | 0.52 | | | c0.54 | |
| v/s Ratio Perm | 0.17 | | | c0.31 | | | | | | | | |
| v/c Ratio | 0.42 | 0.48 | | 0.78 | 0.47 | | | 1.03 | | | 1.07 | |
| Uniform Delay, d1 | 18.4 | 18.9 | | 22.3 | 18.8 | | | 21.0 | | | 21.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.79 | |
| Incremental Delay, d2 | 5.3 | 1.3 | | 23.7 | 1.2 | | | 24.9 | | | 32.4 | |
| Delay (s) | 23.7 | 20.2 | | 46.0 | 20.1 | | | 45.9 | | | 49.0 | |
| Level of Service | C | C | | D | C | | | D | | | D | |
| Approach Delay (s) | | 20.7 | | | 25.9 | | | 45.9 | | | 49.0 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 42.1 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.94 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 87.8% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

**Year 2025**
**Alternative 4 (Battery Caulfield Alternative)**
**One-way Couplet**
**PM Peak Hour**

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 354 | 11 | 28 | 483 | 4 | 4 | 1 | 28 | 8 | 3 | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 377 | 12 | 30 | 514 | 4 | 4 | 1 | 30 | 9 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 518 | | | 388 | | | 966 | 964 | 382 | 993 | 968 | 516 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 518 | | | 388 | | | 966 | 964 | 382 | 993 | 968 | 516 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 97 | | | 98 | 100 | 96 | 96 | 99 | 100 |
| cM capacity (veh/h) | 1058 | | | 1181 | | | 228 | 250 | 669 | 211 | 249 | 563 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 390 | 548 | 35 | 14 |
| Volume Left | 2 | 30 | 4 | 9 |
| Volume Right | 12 | 4 | 30 | 2 |
| cSH | 1058 | 1181 | 521 | 243 |
| Volume to Capacity | 0.00 | 0.03 | 0.07 | 0.06 |
| Queue Length 95th (ft) | 0 | 2 | 5 | 4 |
| Control Delay (s) | 0.1 | 0.7 | 12.4 | 20.7 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 12.4 | 20.7 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 55.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 382 | 6 | 20 | 481 | 4 | 9 | 4 | 19 | 51 | 36 | 25 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 406 | 6 | 21 | 512 | 4 | 10 | 4 | 20 | 54 | 38 | 27 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 415 | 537 | 34 | 119 |
| Volume Left (vph) | 2 | 21 | 10 | 54 |
| Volume Right (vph) | 6 | 4 | 20 | 27 |
| Hadj (s) | -0.01 | 0.00 | -0.30 | -0.04 |
| Departure Headway (s) | 5.1 | 5.0 | 6.2 | 6.2 |
| Degree Utilization, x | 0.59 | 0.74 | 0.06 | 0.21 |
| Capacity (veh/h) | 678 | 711 | 485 | 512 |
| Control Delay (s) | 15.1 | 20.7 | 9.6 | 10.9 |
| Approach Delay (s) | 15.1 | 20.7 | 9.6 | 10.9 |
| Approach LOS | C | C | A | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 17.2 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 56.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 36 | 412 | 4 | 228 | 502 | 62 | 2 | 62 | 55 | 6 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 38 | 438 | 4 | 243 | 534 | 66 | 2 | 66 | 59 | 6 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.84 | | | | | | 0.84 | 0.84 | | 0.84 | 0.84 | 0.84 |
| vC, conflicting volume | 600 | | | 443 | | | 1571 | 1602 | 440 | 1661 | 1571 | 567 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 522 | | | 443 | | | 1682 | 1720 | 440 | 1790 | 1683 | 482 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 79 | | | 96 | 0 | 91 | 0 | 98 | 100 |
| cM capacity (veh/h) | 882 | | | 1128 | | | 50 | 57 | 621 | 0 | 60 | 492 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 481 | 843 | 127 | 9 |
| Volume Left | 38 | 243 | 2 | 6 |
| Volume Right | 4 | 66 | 59 | 1 |
| cSH | 882 | 1128 | 98 | 0 |
| Volume to Capacity | 0.04 | 0.21 | 1.30 | Err |
| Queue Length 95th (ft) | 3 | 20 | 223 | Err |
| Control Delay (s) | 1.2 | 4.8 | 270.1 | Err |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 1.2 | 4.8 | 270.1 | Err |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | Err | | |
| Intersection Capacity Utilization | 83.4% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4920 | |
| Flt Permitted | 0.36 | 1.00 | 1.00 | 0.46 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 655 | 1756 | 1492 | 804 | 1756 | 1492 | | 5012 | | | 4920 | |
| Volume (vph) | 180 | 264 | 29 | 81 | 335 | 187 | 0 | 2466 | 80 | 0 | 2521 | 457 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 188 | 275 | 30 | 84 | 349 | 195 | 0 | 2569 | 83 | 0 | 2626 | 476 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 30 | 0 |
| Lane Group Flow (vph) | 188 | 275 | 29 | 84 | 349 | 194 | 0 | 2648 | 0 | 0 | 3072 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 216 | 578 | 491 | 265 | 578 | 491 | | 2889 | | | 2836 | |
| v/s Ratio Prot | | 0.16 | | | 0.20 | | | 0.53 | | | c0.62 | |
| v/s Ratio Perm | c0.29 | | 0.02 | 0.10 | | 0.13 | | | | | | |
| v/c Ratio | 0.87 | 0.48 | 0.06 | 0.32 | 0.60 | 0.39 | | 0.92 | | | 1.08 | |
| Uniform Delay, d1 | 26.8 | 22.7 | 19.5 | 21.3 | 23.9 | 22.0 | | 16.2 | | | 18.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.74 | | | 1.00 | |
| Incremental Delay, d2 | 35.0 | 2.8 | 0.2 | 3.1 | 4.6 | 2.4 | | 2.0 | | | 44.3 | |
| Delay (s) | 61.8 | 25.5 | 19.7 | 24.5 | 28.5 | 24.3 | | 13.9 | | | 62.3 | |
| Level of Service | E | C | B | C | C | C | | B | | | E | |
| Approach Delay (s) | | 39.0 | | | 26.7 | | | 13.9 | | | 62.3 | |
| Approach LOS | | D | | | C | | | B | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 38.7 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 1.01 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 96.5% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 14 | 323 | 7 | 8 | 579 | 6 | 20 | 1 | 18 | 1 | 1 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 14 | 330 | 7 | 8 | 591 | 6 | 20 | 1 | 18 | 1 | 1 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 79 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.88 | | | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| vC, conflicting volume | 597 | | | 337 | | | 977 | 975 | 333 | 991 | 976 | 594 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 597 | | | 244 | | | 973 | 972 | 240 | 990 | 972 | 594 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 90 | 100 | 97 | 99 | 100 | 99 |
| cM capacity (veh/h) | 985 | | | 1165 | | | 199 | 219 | 705 | 191 | 219 | 509 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 351 | 605 | 40 | 6 |
| Volume Left | 14 | 8 | 20 | 1 |
| Volume Right | 7 | 6 | 18 | 4 |
| cSH | 985 | 1165 | 299 | 339 |
| Volume to Capacity | 0.01 | 0.01 | 0.13 | 0.02 |
| Queue Length 95th (ft) | 1 | 1 | 11 | 1 |
| Control Delay (s) | 0.5 | 0.2 | 18.9 | 15.8 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.5 | 0.2 | 18.9 | 15.8 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 46.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 10 | 514 | 8 | 18 | 433 | 15 | 9 | 7 | 33 | 17 | 21 | 25 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 10 | 524 | 8 | 18 | 442 | 15 | 9 | 7 | 34 | 17 | 21 | 26 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 524 | | | | | | | |
| pX, platoon unblocked | 0.87 | | | | | | 0.87 | 0.87 | | 0.87 | 0.87 | 0.87 |
| vC, conflicting volume | 457 | | | 533 | | | 1071 | 1043 | 529 | 1072 | 1039 | 449 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 375 | | | 533 | | | 1082 | 1049 | 529 | 1083 | 1045 | 366 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 98 | | | 94 | 96 | 94 | 89 | 89 | 96 |
| cM capacity (veh/h) | 1038 | | | 1045 | | | 147 | 194 | 554 | 152 | 195 | 594 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 543 | 476 | 50 | 64 |
| Volume Left | 10 | 18 | 9 | 17 |
| Volume Right | 8 | 15 | 34 | 26 |
| cSH | 1038 | 1045 | 312 | 241 |
| Volume to Capacity | 0.01 | 0.02 | 0.16 | 0.27 |
| Queue Length 95th (ft) | 1 | 1 | 14 | 26 |
| Control Delay (s) | 0.3 | 0.5 | 18.7 | 25.3 |
| Lane LOS | A | A | C | D |
| Approach Delay (s) | 0.3 | 0.5 | 18.7 | 25.3 |
| Approach LOS | | | C | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.6 | | |
| Intersection Capacity Utilization | 45.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 77 | 479 | 7 | 69 | 457 | 20 | 2 | 23 | 33 | 200 | 25 | 8 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 84 | 521 | 8 | 75 | 497 | 22 | 2 | 25 | 36 | 217 | 27 | 9 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 224 | | | | | | | |
| pX, platoon unblocked | 0.91 | | | | | | 0.91 | 0.91 | | 0.91 | 0.91 | 0.91 |
| vC, conflicting volume | 518 | | | 528 | | | 1112 | 1360 | 264 | 1134 | 1353 | 259 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 370 | | | 528 | | | 1024 | 1296 | 264 | 1047 | 1289 | 85 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 92 | | | 93 | | | 98 | 80 | 95 | 0 | 79 | 99 |
| cM capacity (veh/h) | 1090 | | | 1049 | | | 130 | 127 | 740 | 122 | 129 | 876 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 344 | 268 | 323 | 270 | 63 | 253 |
| Volume Left | 84 | 0 | 75 | 0 | 2 | 217 |
| Volume Right | 0 | 8 | 0 | 22 | 36 | 9 |
| cSH | 1090 | 1700 | 1049 | 1700 | 241 | 126 |
| Volume to Capacity | 0.08 | 0.16 | 0.07 | 0.16 | 0.26 | 2.01 |
| Queue Length 95th (ft) | 6 | 0 | 6 | 0 | 25 | 513 |
| Control Delay (s) | 2.7 | 0.0 | 2.6 | 0.0 | 25.1 | 539.0 |
| Lane LOS | A | | A | | D | F |
| Approach Delay (s) | 1.5 | | 1.4 | | 25.1 | 539.0 |
| Approach LOS | | | | | D | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 91.9 | | |
| Intersection Capacity Utilization | 60.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| 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 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3308 | | 1668 | 3196 | | | 4968 | | | 4999 | |
| Flt Permitted | 0.34 | 1.00 | | 0.32 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 597 | 3308 | | 559 | 3196 | | | 4968 | | | 4999 | |
| Volume (vph) | 97 | 582 | 34 | 170 | 418 | 163 | 0 | 2287 | 227 | 0 | 2503 | 128 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 100 | 600 | 35 | 175 | 431 | 168 | 0 | 2358 | 234 | 0 | 2580 | 132 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 14 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 100 | 634 | 0 | 175 | 598 | 0 | 0 | 2578 | 0 | 0 | 2706 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Effective Green, g (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | | | 0.51 | | | 0.51 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 239 | 1323 | | 224 | 1278 | | | 2513 | | | 2529 | |
| v/s Ratio Prot | | 0.19 | | | 0.19 | | | 0.52 | | | c0.54 | |
| v/s Ratio Perm | 0.17 | | | c0.31 | | | | | | | | |
| v/c Ratio | 0.42 | 0.48 | | 0.78 | 0.47 | | | 1.03 | | | 1.07 | |
| Uniform Delay, d1 | 18.4 | 18.9 | | 22.3 | 18.8 | | | 21.0 | | | 21.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.79 | |
| Incremental Delay, d2 | 5.3 | 1.2 | | 23.2 | 1.2 | | | 24.9 | | | 32.4 | |
| Delay (s) | 23.7 | 20.2 | | 45.5 | 20.1 | | | 45.9 | | | 49.0 | |
| Level of Service | C | C | | D | C | | | D | | | D | |
| Approach Delay (s) | | 20.7 | | | 25.8 | | | 45.9 | | | 49.0 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 42.1 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.94 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 87.8% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

**Year 2025**
**Alternative 1 (PTMP Alternative) Park**
**Presidio Boulevard Access Variant**
**AM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 627 | 14 | 17 | 295 | 1 | 3 | 1 | 43 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 682 | 15 | 18 | 321 | 1 | 3 | 1 | 47 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 322 | | | 697 | | | 1057 | 1052 | 689 | 1099 | 1059 | 321 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 322 | | | 697 | | | 1057 | 1052 | 689 | 1099 | 1059 | 321 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 98 | 100 | 90 | 97 | 98 | 100 |
| cM capacity (veh/h) | 1250 | | | 909 | | | 197 | 223 | 449 | 168 | 221 | 724 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 699 | 340 | 51 | 12 |
| Volume Left | 2 | 18 | 3 | 4 |
| Volume Right | 15 | 1 | 47 | 3 |
| cSH | 1250 | 909 | 407 | 239 |
| Volume to Capacity | 0.00 | 0.02 | 0.13 | 0.05 |
| Queue Length 95th (ft) | 0 | 2 | 11 | 4 |
| Control Delay (s) | 0.0 | 0.7 | 15.1 | 20.8 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.7 | 15.1 | 20.8 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 44.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 29 | 631 | 14 | 14 | 309 | 28 | 2 | 46 | 41 | 6 | 2 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 30 | 657 | 15 | 15 | 322 | 29 | 2 | 48 | 43 | 6 | 2 | 2 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 702 | 366 | 93 | 10 |
| Volume Left (vph) | 30 | 15 | 2 | 6 |
| Volume Right (vph) | 15 | 29 | 43 | 2 |
| Hadj (s) | 0.00 | -0.04 | -0.27 | 0.00 |
| Departure Headway (s) | 4.7 | 5.0 | 6.1 | 6.6 |
| Degree Utilization, x | 0.92 | 0.51 | 0.16 | 0.02 |
| Capacity (veh/h) | 754 | 694 | 557 | 494 |
| Control Delay (s) | 36.6 | 13.1 | 10.2 | 9.8 |
| Approach Delay (s) | 36.6 | 13.1 | 10.2 | 9.8 |
| Approach LOS | E | B | B | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 27.0 | | |
| HCM Level of Service | D | | |
| Intersection Capacity Utilization | 56.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

Year 2025 Variant AM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 33 | 639 | 6 | 183 | 343 | 28 | 4 | 44 | 44 | 3 | 2 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 34 | 652 | 6 | 187 | 350 | 29 | 4 | 45 | 45 | 3 | 2 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 379 | | | 658 | | | 1465 | 1474 | 655 | 1528 | 1463 | 364 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 328 | | | 658 | | | 1503 | 1513 | 655 | 1571 | 1501 | 312 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 80 | | | 95 | 48 | 90 | 92 | 98 | 99 |
| cM capacity (veh/h) | 1149 | | | 939 | | | 76 | 87 | 470 | 38 | 88 | 677 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 692 | 565 | 94 | 9 |
| Volume Left | 34 | 187 | 4 | 3 |
| Volume Right | 6 | 29 | 45 | 4 |
| cSH | 1149 | 939 | 141 | 84 |
| Volume to Capacity | 0.03 | 0.20 | 0.67 | 0.11 |
| Queue Length 95th (ft) | 2 | 18 | 92 | 9 |
| Control Delay (s) | 0.8 | 4.9 | 70.7 | 53.3 |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 0.8 | 4.9 | 70.7 | 53.3 |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 7.7 | | |
| Intersection Capacity Utilization | 81.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

Year 2025 Variant AM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4935 | |
| Flt Permitted | 0.56 | 1.00 | 1.00 | 0.23 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1019 | 1756 | 1492 | 399 | 1756 | 1492 | | 5012 | | | 4935 | |
| Volume (vph) | 217 | 437 | 32 | 65 | 193 | 137 | 0 | 2605 | 85 | 0 | 2338 | 362 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 226 | 455 | 33 | 68 | 201 | 143 | 0 | 2714 | 89 | 0 | 2435 | 377 |
| RTOR Reduction (vph) | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 25 | 0 |
| Lane Group Flow (vph) | 226 | 455 | 31 | 68 | 201 | 142 | 0 | 2799 | 0 | 0 | 2787 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 336 | 578 | 491 | 131 | 578 | 491 | | 2889 | | | 2845 | |
| v/s Ratio Prot | | c0.26 | | | 0.11 | | | 0.56 | | | c0.56 | |
| v/s Ratio Perm | 0.22 | | 0.02 | 0.17 | | 0.10 | | | | | | |
| v/c Ratio | 0.67 | 0.79 | 0.06 | 0.52 | 0.35 | 0.29 | | 0.97 | | | 0.98 | |
| Uniform Delay, d1 | 24.6 | 25.8 | 19.5 | 23.1 | 21.6 | 21.1 | | 17.3 | | | 17.5 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.65 | | | 0.60 | |
| Incremental Delay, d2 | 10.3 | 10.4 | 0.2 | 13.9 | 1.7 | 1.5 | | 5.8 | | | 10.0 | |
| Delay (s) | 34.8 | 36.2 | 19.8 | 37.0 | 23.2 | 22.6 | | 17.0 | | | 20.5 | |
| Level of Service | C | D | B | D | C | C | | B | | | C | |
| Approach Delay (s) | | 35.0 | | | 25.3 | | | 17.0 | | | 20.5 | |
| Approach LOS | | D | | | C | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.9 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.91 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 89.8% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Avenue

Year 2025 Variant AM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 507 | 14 | 3 | 381 | 4 | 12 | 3 | 18 | 3 | 2 | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 1 | 576 | 16 | 3 | 433 | 5 | 14 | 3 | 20 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 71 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.77 | | | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | |
| vC, conflicting volume | 438 | | | 592 | | | 1032 | 1031 | 584 | 1051 | 1036 | 435 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 438 | | | 467 | | | 1042 | 1040 | 456 | 1066 | 1048 | 435 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 91 | 98 | 96 | 98 | 99 | 100 |
| cM capacity (veh/h) | 1128 | | | 842 | | | 158 | 177 | 465 | 145 | 175 | 625 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 593 | 441 | 38 | 8 |
| Volume Left | 1 | 3 | 14 | 3 |
| Volume Right | 16 | 5 | 20 | 2 |
| cSH | 1128 | 842 | 250 | 198 |
| Volume to Capacity | 0.00 | 0.00 | 0.15 | 0.04 |
| Queue Length 95th (ft) | 0 | 0 | 13 | 3 |
| Control Delay (s) | 0.0 | 0.1 | 21.9 | 23.9 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 21.9 | 23.9 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.0 | | |
| Intersection Capacity Utilization | 38.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue

Year 2025 Variant AM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 49 | 609 | 15 | 12 | 294 | 25 | 8 | 15 | 32 | 4 | 12 | 14 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 52 | 648 | 16 | 13 | 313 | 27 | 9 | 16 | 34 | 4 | 13 | 15 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 339 | | | 664 | | | 1133 | 1125 | 656 | 1154 | 1120 | 326 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 286 | | | 664 | | | 1144 | 1135 | 656 | 1166 | 1129 | 271 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 99 | | | 94 | 91 | 93 | 97 | 93 | 98 |
| cM capacity (veh/h) | 1191 | | | 935 | | | 146 | 178 | 469 | 132 | 179 | 714 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 716 | 352 | 59 | 32 |
| Volume Left | 52 | 13 | 9 | 4 |
| Volume Right | 16 | 27 | 34 | 15 |
| cSH | 1191 | 935 | 266 | 257 |
| Volume to Capacity | 0.04 | 0.01 | 0.22 | 0.12 |
| Queue Length 95th (ft) | 3 | 1 | 21 | 10 |
| Control Delay (s) | 1.1 | 0.5 | 22.4 | 21.0 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 1.1 | 0.5 | 22.4 | 21.0 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.6 | | |
| Intersection Capacity Utilization | 64.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 38 | 594 | 14 | 57 | 316 | 23 | 1 | 32 | 29 | 164 | 13 | 14 |
| Peak Hour Factor | 0.91 | 0.91 | 0.25 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 42 | 653 | 56 | 63 | 347 | 25 | 1 | 35 | 32 | 180 | 14 | 15 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 373 | | | 709 | | | 1086 | 1262 | 354 | 945 | 1277 | 186 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 301 | | | 709 | | | 1046 | 1230 | 354 | 898 | 1246 | 107 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 93 | | | 99 | 77 | 95 | 0 | 91 | 98 |
| cM capacity (veh/h) | 1218 | | | 899 | | | 150 | 154 | 648 | 165 | 151 | 894 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 368 | 382 | 236 | 199 | 68 | 210 |
| Volume Left | 42 | 0 | 63 | 0 | 1 | 180 |
| Volume Right | 0 | 56 | 0 | 25 | 32 | 15 |
| cSH | 1218 | 1700 | 899 | 1700 | 239 | 174 |
| Volume to Capacity | 0.03 | 0.22 | 0.07 | 0.12 | 0.28 | 1.20 |
| Queue Length 95th (ft) | 3 | 0 | 6 | 0 | 28 | 284 |
| Control Delay (s) | 1.2 | 0.0 | 3.0 | 0.0 | 25.9 | 187.1 |
| Lane LOS | A | | A | | D | F |
| Approach Delay (s) | 0.6 | | 1.6 | | 25.9 | 187.1 |
| Approach LOS | | | | | D | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 28.8 | | |
| Intersection Capacity Utilization | 56.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3186 | | | 4960 | | | 4996 | |
| Flt Permitted | 0.44 | 1.00 | | 0.22 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 778 | 3318 | | 381 | 3186 | | | 4960 | | | 4996 | |
| Volume (vph) | 104 | 659 | 24 | 102 | 270 | 115 | 0 | 2472 | 276 | 0 | 2307 | 127 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 107 | 679 | 25 | 105 | 278 | 119 | 0 | 2548 | 285 | 0 | 2378 | 131 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 16 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 107 | 701 | 0 | 105 | 395 | 0 | 0 | 2817 | 0 | 0 | 2502 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 238 | 1015 | | 117 | 975 | | | 2976 | | | 2998 | |
| v/s Ratio Prot | | 0.21 | | | 0.12 | | | c0.57 | | | 0.50 | |
| v/s Ratio Perm | 0.14 | | | c0.28 | | | | | | | | |
| v/c Ratio | 0.45 | 0.69 | | 0.90 | 0.41 | | | 0.95 | | | 0.83 | |
| Uniform Delay, d1 | 23.7 | 26.0 | | 28.2 | 23.4 | | | 15.7 | | | 13.6 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.69 | |
| Incremental Delay, d2 | 6.0 | 3.9 | | 59.1 | 1.3 | | | 8.0 | | | 0.9 | |
| Delay (s) | 29.8 | 29.8 | | 87.3 | 24.6 | | | 23.8 | | | 10.4 | |
| Level of Service | C | C | | F | C | | | C | | | B | |
| Approach Delay (s) | | 29.8 | | | 37.7 | | | 23.8 | | | 10.4 | |
| Approach LOS | | C | | | D | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.5 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.93 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5014 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5014 | |
| Volume (vph) | 54 | 96 | 0 | 2959 | 2604 | 77 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 56 | 100 | 0 | 3082 | 2712 | 80 |
| RTOR Reduction (vph) | 0 | 6 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 56 | 94 | 0 | 3082 | 2789 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Effective Green, g (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Actuated g/C Ratio | 0.05 | 0.17 | | 0.86 | 0.73 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 88 | 483 | | 4313 | 3681 | |
| v/s Ratio Prot | c0.03 | 0.03 | | c0.61 | c0.56 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.64 | 0.20 | | 0.71 | 0.76 | |
| Uniform Delay, d1 | 39.7 | 30.2 | | 2.3 | 6.8 | |
| Progression Factor | 1.00 | 1.00 | | 0.40 | 1.00 | |
| Incremental Delay, d2 | 14.1 | 0.2 | | 0.4 | 1.5 | |
| Delay (s) | 53.8 | 30.4 | | 1.3 | 8.3 | |
| Level of Service | D | C | | A | A | |
| Approach Delay (s) | 38.8 | | | 1.3 | 8.3 | |
| Approach LOS | D | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 5.5 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.73 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 67.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

**Year 2025**
**Alternative 2 (Wings Retained/Trust Revised Alternative) Park Presidio Boulevard Access Variant**
**AM Peak Hour**

# HCM Unsignalized Intersection Capacity Analysis
## 100: Lake Street & 17th Avenue

Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 613 | 14 | 17 | 289 | 1 | 3 | 1 | 43 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 666 | 15 | 18 | 314 | 1 | 3 | 1 | 47 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 315 | | | 682 | | | 1035 | 1030 | 674 | 1077 | 1038 | 315 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 315 | | | 682 | | | 1035 | 1030 | 674 | 1077 | 1038 | 315 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 98 | 100 | 90 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1256 | | | 921 | | | 204 | 230 | 458 | 174 | 228 | 730 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 684 | 334 | 51 | 12 |
| Volume Left | 2 | 18 | 3 | 4 |
| Volume Right | 15 | 1 | 47 | 3 |
| cSH | 1256 | 921 | 416 | 247 |
| Volume to Capacity | 0.00 | 0.02 | 0.12 | 0.05 |
| Queue Length 95th (ft) | 0 | 2 | 10 | 4 |
| Control Delay (s) | 0.0 | 0.7 | 14.9 | 20.3 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.7 | 14.9 | 20.3 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 43.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



# HCM Unsignalized Intersection Capacity Analysis
## 101: Lake Street & 15th Avenue

Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 22 | 624 | 14 | 14 | 303 | 21 | 2 | 32 | 41 | 6 | 2 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 23 | 650 | 15 | 15 | 316 | 22 | 2 | 33 | 43 | 6 | 2 | 2 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 688 | 352 | 78 | 10 |
| Volume Left (vph) | 23 | 15 | 2 | 6 |
| Volume Right (vph) | 15 | 22 | 43 | 2 |
| Hadj (s) | -0.01 | -0.03 | -0.32 | 0.00 |
| Departure Headway (s) | 4.6 | 4.9 | 6.0 | 6.5 |
| Degree Utilization, x | 0.88 | 0.48 | 0.13 | 0.02 |
| Capacity (veh/h) | 767 | 706 | 564 | 503 |
| Control Delay (s) | 31.1 | 12.5 | 9.8 | 9.6 |
| Approach Delay (s) | 31.1 | 12.5 | 9.8 | 9.6 |
| Approach LOS | D | B | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 23.6 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 52.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 26 | 639 | 6 | 181 | 330 | 21 | 4 | 30 | 44 | 3 | 2 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 27 | 652 | 6 | 185 | 337 | 21 | 4 | 31 | 45 | 3 | 2 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.93 | | | | | | 0.93 | 0.93 | | 0.93 | 0.93 | 0.93 |
| vC, conflicting volume | 358 | | | 658 | | | 1430 | 1436 | 655 | 1485 | 1428 | 347 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 312 | | | 658 | | | 1461 | 1467 | 655 | 1520 | 1459 | 300 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 80 | | | 95 | 68 | 90 | 94 | 98 | 99 |
| cM capacity (veh/h) | 1175 | | | 939 | | | 82 | 94 | 470 | 52 | 96 | 694 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 685 | 543 | 80 | 9 |
| Volume Left | 27 | 185 | 4 | 3 |
| Volume Right | 6 | 21 | 45 | 4 |
| cSH | 1175 | 939 | 170 | 107 |
| Volume to Capacity | 0.02 | 0.20 | 0.47 | 0.09 |
| Queue Length 95th (ft) | 2 | 18 | 55 | 7 |
| Control Delay (s) | 0.6 | 4.9 | 43.7 | 41.7 |
| Lane LOS | A | A | E | E |
| Approach Delay (s) | 0.6 | 4.9 | 43.7 | 41.7 |
| Approach LOS | | | E | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 5.3 | | |
| Intersection Capacity Utilization | 78.7% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4936 | |
| Flt Permitted | 0.58 | 1.00 | 1.00 | 0.23 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1058 | 1756 | 1492 | 399 | 1756 | 1492 | | 5012 | | | 4936 | |
| Volume (vph) | 217 | 437 | 32 | 65 | 179 | 137 | 0 | 2605 | 85 | 0 | 2324 | 354 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 226 | 455 | 33 | 68 | 186 | 143 | 0 | 2714 | 89 | 0 | 2421 | 369 |
| RTOR Reduction (vph) | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 24 | 0 |
| Lane Group Flow (vph) | 226 | 455 | 31 | 68 | 186 | 142 | 0 | 2799 | 0 | 0 | 2766 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 349 | 578 | 491 | 131 | 578 | 491 | | 2889 | | | 2845 | |
| v/s Ratio Prot | | c0.26 | | | 0.11 | | | 0.56 | | | c0.56 | |
| v/s Ratio Perm | 0.21 | | 0.02 | 0.17 | | 0.10 | | | | | | |
| v/c Ratio | 0.65 | 0.79 | 0.06 | 0.52 | 0.32 | 0.29 | | 0.97 | | | 0.97 | |
| Uniform Delay, d1 | 24.3 | 25.8 | 19.5 | 23.1 | 21.4 | 21.1 | | 17.3 | | | 17.3 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.65 | | | 0.58 | |
| Incremental Delay, d2 | 9.0 | 10.4 | 0.2 | 13.9 | 1.5 | 1.5 | | 5.8 | | | 9.0 | |
| Delay (s) | 33.3 | 36.2 | 19.8 | 37.0 | 22.8 | 22.6 | | 17.0 | | | 19.1 | |
| Level of Service | C | D | B | D | C | C | | B | | | B | |
| Approach Delay (s) | | 34.5 | | | 25.2 | | | 17.0 | | | 19.1 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.2 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.90 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 89.4% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

# HCM Unsignalized Intersection Capacity Analysis
## 104: Lake Street & Funston Avenue

Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✥ | | | ✥ | | | ✥ | | | ✥ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 507 | 14 | 3 | 367 | 4 | 12 | 3 | 18 | 3 | 2 | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 1 | 576 | 16 | 3 | 417 | 5 | 14 | 3 | 20 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 71 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.77 | | | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | |
| vC, conflicting volume | 422 | | | 592 | | | 1016 | 1015 | 584 | 1035 | 1020 | 419 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 422 | | | 467 | | | 1021 | 1019 | 456 | 1045 | 1027 | 419 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 92 | 98 | 96 | 98 | 99 | 100 |
| cM capacity (veh/h) | 1143 | | | 842 | | | 163 | 182 | 465 | 150 | 180 | 638 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 593 | 425 | 38 | 8 |
| Volume Left | 1 | 3 | 14 | 3 |
| Volume Right | 16 | 5 | 20 | 2 |
| cSH | 1143 | 842 | 256 | 204 |
| Volume to Capacity | 0.00 | 0.00 | 0.15 | 0.04 |
| Queue Length 95th (ft) | 0 | 0 | 13 | 3 |
| Control Delay (s) | 0.0 | 0.1 | 21.4 | 23.3 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 21.4 | 23.3 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.0 | | |
| Intersection Capacity Utilization | 38.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



# HCM Unsignalized Intersection Capacity Analysis
## 105: California Street & 15th Avenue

Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✥ | | | ✥ | | | ✥ | | | ✥ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 40 | 600 | 15 | 12 | 293 | 25 | 8 | 10 | 32 | 4 | 12 | 14 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 43 | 638 | 16 | 13 | 312 | 27 | 9 | 11 | 34 | 4 | 13 | 15 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 338 | | | 654 | | | 1103 | 1095 | 646 | 1121 | 1090 | 325 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 284 | | | 654 | | | 1112 | 1103 | 646 | 1131 | 1097 | 270 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 99 | | | 95 | 94 | 93 | 97 | 93 | 98 |
| cM capacity (veh/h) | 1192 | | | 942 | | | 155 | 187 | 475 | 144 | 189 | 715 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 697 | 351 | 53 | 32 |
| Volume Left | 43 | 13 | 9 | 4 |
| Volume Right | 16 | 27 | 34 | 15 |
| cSH | 1192 | 942 | 290 | 271 |
| Volume to Capacity | 0.04 | 0.01 | 0.18 | 0.12 |
| Queue Length 95th (ft) | 3 | 1 | 16 | 10 |
| Control Delay (s) | 0.9 | 0.5 | 20.2 | 20.1 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.9 | 0.5 | 20.2 | 20.1 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.2 | | |
| Intersection Capacity Utilization | 59.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 29 | 594 | 14 | 56 | 315 | 23 | 1 | 27 | 29 | 162 | 13 | 14 |
| Peak Hour Factor | 0.91 | 0.91 | 0.25 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 32 | 653 | 56 | 62 | 346 | 25 | 1 | 30 | 32 | 178 | 14 | 15 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 371 | | | 709 | | | 1063 | 1239 | 354 | 919 | 1254 | 186 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 300 | | | 709 | | | 1022 | 1206 | 354 | 871 | 1222 | 106 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 93 | | | 99 | 82 | 95 | 2 | 91 | 98 |
| cM capacity (veh/h) | 1219 | | | 899 | | | 157 | 161 | 648 | 181 | 157 | 895 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 358 | 382 | 235 | 198 | 63 | 208 |
| Volume Left | 32 | 0 | 62 | 0 | 1 | 178 |
| Volume Right | 0 | 56 | 0 | 25 | 32 | 15 |
| cSH | 1219 | 1700 | 899 | 1700 | 260 | 190 |
| Volume to Capacity | 0.03 | 0.22 | 0.07 | 0.12 | 0.24 | 1.09 |
| Queue Length 95th (ft) | 2 | 0 | 5 | 0 | 23 | 250 |
| Control Delay (s) | 1.0 | 0.0 | 3.0 | 0.0 | 23.1 | 143.6 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 0.5 | | 1.6 | | 23.1 | 143.6 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 22.4 | | | |
| Intersection Capacity Utilization | 55.9% | ICU Level of Service | | B |
| Analysis Period (min) | 15 | | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3186 | | | 4960 | | | 4997 | |
| Flt Permitted | 0.44 | 1.00 | | 0.22 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 778 | 3318 | | 383 | 3186 | | | 4960 | | | 4997 | |
| Volume (vph) | 104 | 657 | 24 | 102 | 270 | 115 | 0 | 2472 | 276 | 0 | 2296 | 124 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 107 | 677 | 25 | 105 | 278 | 119 | 0 | 2548 | 285 | 0 | 2367 | 128 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 16 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 107 | 699 | 0 | 105 | 395 | 0 | 0 | 2817 | 0 | 0 | 2488 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 238 | 1015 | | 117 | 975 | | | 2976 | | | 2998 | |
| v/s Ratio Prot | | 0.21 | | | 0.12 | | | c0.57 | | | 0.50 | |
| v/s Ratio Perm | 0.14 | | | c0.27 | | | | | | | | |
| v/c Ratio | 0.45 | 0.69 | | 0.90 | 0.41 | | | 0.95 | | | 0.83 | |
| Uniform Delay, d1 | 23.7 | 25.9 | | 28.2 | 23.4 | | | 15.7 | | | 13.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.69 | |
| Incremental Delay, d2 | 6.0 | 3.8 | | 59.1 | 1.3 | | | 8.0 | | | 0.9 | |
| Delay (s) | 29.8 | 29.8 | | 87.3 | 24.6 | | | 23.8 | | | 10.4 | |
| Level of Service | C | C | | F | C | | | C | | | B | |
| Approach Delay (s) | | 29.8 | | | 37.7 | | | 23.8 | | | 10.4 | |
| Approach LOS | | C | | | D | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.5 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.93 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5024 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5024 | |
| Volume (vph) | 39 | 74 | 0 | 2959 | 2604 | 43 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 41 | 77 | 0 | 3082 | 2712 | 45 |
| RTOR Reduction (vph) | 0 | 6 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 41 | 71 | 0 | 3082 | 2755 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Effective Green, g (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Actuated g/C Ratio | 0.05 | 0.17 | | 0.86 | 0.73 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 88 | 483 | | 4313 | 3688 | |
| v/s Ratio Prot | c0.02 | 0.03 | | c0.61 | c0.55 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.47 | 0.15 | | 0.71 | 0.75 | |
| Uniform Delay, d1 | 39.3 | 29.9 | | 2.3 | 6.7 | |
| Progression Factor | 1.00 | 1.00 | | 0.41 | 1.00 | |
| Incremental Delay, d2 | 3.9 | 0.1 | | 0.4 | 1.4 | |
| Delay (s) | 43.2 | 30.1 | | 1.3 | 8.1 | |
| Level of Service | D | C | | A | A | |
| Approach Delay (s) | 34.6 | | | 1.3 | 8.1 | |
| Approach LOS | C | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 5.1 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 67.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

**Year 2025**
**Alternative 3 (Wings Removed Alternative)**
**Park Presidio Boulevard Access Variant**
**AM Peak Hour**

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 609 | 14 | 17 | 290 | 1 | 3 | 1 | 43 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 662 | 15 | 18 | 315 | 1 | 3 | 1 | 47 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 316 | | | 677 | | | 1032 | 1027 | 670 | 1074 | 1034 | 316 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 316 | | | 677 | | | 1032 | 1027 | 670 | 1074 | 1034 | 316 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 98 | 100 | 90 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1255 | | | 924 | | | 205 | 231 | 461 | 176 | 229 | 729 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 679 | 335 | 51 | 12 |
| Volume Left | 2 | 18 | 3 | 4 |
| Volume Right | 15 | 1 | 47 | 3 |
| cSH | 1255 | 924 | 419 | 248 |
| Volume to Capacity | 0.00 | 0.02 | 0.12 | 0.05 |
| Queue Length 95th (ft) | 0 | 2 | 10 | 4 |
| Control Delay (s) | 0.0 | 0.7 | 14.8 | 20.3 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.7 | 14.8 | 20.3 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 43.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 20 | 622 | 14 | 14 | 304 | 19 | 2 | 29 | 41 | 6 | 2 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 21 | 648 | 15 | 15 | 317 | 20 | 2 | 30 | 43 | 6 | 2 | 2 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 683 | 351 | 75 | 10 |
| Volume Left (vph) | 21 | 15 | 2 | 6 |
| Volume Right (vph) | 15 | 20 | 43 | 2 |
| Hadj (s) | -0.01 | -0.03 | -0.34 | 0.00 |
| Departure Headway (s) | 4.6 | 4.9 | 5.9 | 6.5 |
| Degree Utilization, x | 0.87 | 0.48 | 0.12 | 0.02 |
| Capacity (veh/h) | 769 | 709 | 566 | 504 |
| Control Delay (s) | 30.0 | 12.4 | 9.8 | 9.6 |
| Approach Delay (s) | 30.0 | 12.4 | 9.8 | 9.6 |
| Approach LOS | D | B | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 23.0 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 51.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

# HCM Unsignalized Intersection Capacity Analysis
## 102: Lake Street & 14th Avenue

Year 2025 Variant AM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 24 | 639 | 6 | 182 | 329 | 19 | 4 | 27 | 44 | 3 | 2 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 24 | 652 | 6 | 186 | 336 | 19 | 4 | 28 | 45 | 3 | 2 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.93 | | | | | | 0.93 | 0.93 | | 0.93 | 0.93 | 0.93 |
| vC, conflicting volume | 355 | | | 658 | | | 1426 | 1431 | 655 | 1480 | 1424 | 345 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 310 | | | 658 | | | 1456 | 1461 | 655 | 1513 | 1454 | 300 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 80 | | | 95 | 71 | 90 | 94 | 98 | 99 |
| cM capacity (veh/h) | 1179 | | | 939 | | | 83 | 96 | 470 | 55 | 97 | 696 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 683 | 541 | 77 | 9 |
| Volume Left | 24 | 186 | 4 | 3 |
| Volume Right | 6 | 19 | 45 | 4 |
| cSH | 1179 | 939 | 177 | 111 |
| Volume to Capacity | 0.02 | 0.20 | 0.43 | 0.08 |
| Queue Length 95th (ft) | 2 | 18 | 49 | 7 |
| Control Delay (s) | 0.6 | 5.0 | 40.1 | 40.3 |
| Lane LOS | A | A | E | E |
| Approach Delay (s) | 0.6 | 5.0 | 40.1 | 40.3 |
| Approach LOS | | | E | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 5.0 | | |
| Intersection Capacity Utilization | 78.3% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |



# HCM Signalized Intersection Capacity Analysis
## 103: Lake Street & Park Presidio Boulevard

Year 2025 Variant AM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4936 | |
| Flt Permitted | 0.59 | 1.00 | 1.00 | 0.23 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1068 | 1756 | 1492 | 399 | 1756 | 1492 | | 5012 | | | 4936 | |
| Volume (vph) | 217 | 437 | 32 | 65 | 175 | 137 | 0 | 2605 | 85 | 0 | 2326 | 355 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 226 | 455 | 33 | 68 | 182 | 143 | 0 | 2714 | 89 | 0 | 2423 | 370 |
| RTOR Reduction (vph) | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 24 | 0 |
| Lane Group Flow (vph) | 226 | 455 | 31 | 68 | 182 | 142 | 0 | 2799 | 0 | 0 | 2769 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 352 | 578 | 491 | 131 | 578 | 491 | | 2889 | | | 2845 | |
| v/s Ratio Prot | | c0.26 | | | 0.10 | | | 0.56 | | | c0.56 | |
| v/s Ratio Perm | 0.21 | | 0.02 | 0.17 | | 0.10 | | | | | | |
| v/c Ratio | 0.64 | 0.79 | 0.06 | 0.52 | 0.31 | 0.29 | | 0.97 | | | 0.97 | |
| Uniform Delay, d1 | 24.2 | 25.8 | 19.5 | 23.1 | 21.3 | 21.1 | | 17.3 | | | 17.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.65 | | | 0.59 | |
| Incremental Delay, d2 | 8.7 | 10.4 | 0.2 | 13.9 | 1.4 | 1.5 | | 5.8 | | | 9.2 | |
| Delay (s) | 32.9 | 36.2 | 19.8 | 37.0 | 22.7 | 22.6 | | 17.0 | | | 19.3 | |
| Level of Service | C | D | B | D | C | C | | B | | | B | |
| Approach Delay (s) | | 34.4 | | | 25.2 | | | 17.0 | | | 19.3 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.3 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.91 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 89.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

# HCM Unsignalized Intersection Capacity Analysis
## 104: Lake Street & Funston Avenue

Year 2025 Variant AM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 507 | 14 | 3 | 363 | 4 | 12 | 3 | 18 | 3 | 2 | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 1 | 576 | 16 | 3 | 412 | 5 | 14 | 3 | 20 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 71 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.77 | | | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | |
| vC, conflicting volume | 417 | | | 592 | | | 1011 | 1010 | 584 | 1030 | 1016 | 415 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 417 | | | 467 | | | 1015 | 1013 | 456 | 1039 | 1021 | 415 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 92 | 98 | 96 | 98 | 99 | 100 |
| cM capacity (veh/h) | 1147 | | | 842 | | | 164 | 183 | 465 | 151 | 181 | 642 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 593 | 420 | 38 | 8 |
| Volume Left | 1 | 3 | 14 | 3 |
| Volume Right | 16 | 5 | 20 | 2 |
| cSH | 1147 | 842 | 258 | 206 |
| Volume to Capacity | 0.00 | 0.00 | 0.15 | 0.04 |
| Queue Length 95th (ft) | 0 | 0 | 13 | 3 |
| Control Delay (s) | 0.0 | 0.1 | 21.3 | 23.2 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 21.3 | 23.2 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.0 | | |
| Intersection Capacity Utilization | 38.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



# HCM Unsignalized Intersection Capacity Analysis
## 105: California Street & 15th Avenue

Year 2025 Variant AM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 38 | 598 | 15 | 12 | 293 | 25 | 8 | 9 | 32 | 4 | 12 | 14 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 40 | 636 | 16 | 13 | 312 | 27 | 9 | 10 | 34 | 4 | 13 | 15 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.93 | | | | | | 0.93 | 0.93 | | 0.93 | 0.93 | 0.93 |
| vC, conflicting volume | 338 | | | 652 | | | 1097 | 1089 | 644 | 1114 | 1084 | 325 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 285 | | | 652 | | | 1105 | 1096 | 644 | 1124 | 1090 | 270 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 99 | | | 95 | 95 | 93 | 97 | 93 | 98 |
| cM capacity (veh/h) | 1193 | | | 944 | | | 157 | 190 | 476 | 147 | 191 | 715 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 693 | 351 | 52 | 32 |
| Volume Left | 40 | 13 | 9 | 4 |
| Volume Right | 16 | 27 | 34 | 15 |
| cSH | 1193 | 944 | 296 | 274 |
| Volume to Capacity | 0.03 | 0.01 | 0.18 | 0.12 |
| Queue Length 95th (ft) | 3 | 1 | 16 | 10 |
| Control Delay (s) | 0.9 | 0.5 | 19.7 | 19.9 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.9 | 0.5 | 19.7 | 19.9 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.2 | | |
| Intersection Capacity Utilization | 58.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

# HCM Unsignalized Intersection Capacity Analysis
## 106: California Street & 14th Avenue

Year 2025 Variant AM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 26 | 594 | 14 | 57 | 315 | 23 | 1 | 26 | 29 | 163 | 13 | 14 |
| Peak Hour Factor | 0.91 | 0.91 | 0.25 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 29 | 653 | 56 | 63 | 346 | 25 | 1 | 29 | 32 | 179 | 14 | 15 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 371 | | | 709 | | | 1059 | 1235 | 354 | 914 | 1250 | 186 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 300 | | | 709 | | | 1018 | 1201 | 354 | 866 | 1217 | 106 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 93 | | | 99 | 82 | 95 | 3 | 91 | 98 |
| cM capacity (veh/h) | 1219 | | | 899 | | | 159 | 162 | 648 | 184 | 159 | 895 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 355 | 382 | 236 | 198 | 62 | 209 |
| Volume Left | 29 | 0 | 63 | 0 | 1 | 179 |
| Volume Right | 0 | 56 | 0 | 25 | 32 | 15 |
| cSH | 1219 | 1700 | 899 | 1700 | 265 | 193 |
| Volume to Capacity | 0.02 | 0.22 | 0.07 | 0.12 | 0.23 | 1.08 |
| Queue Length 95th (ft) | 2 | 0 | 6 | 0 | 22 | 247 |
| Control Delay (s) | 0.9 | 0.0 | 3.0 | 0.0 | 22.6 | 139.0 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 0.4 | | 1.6 | | 22.6 | 139.0 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 21.8 | | |
| Intersection Capacity Utilization | 55.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



# HCM Signalized Intersection Capacity Analysis
## 107: California Street & Park Presidio Boulevard

Year 2025 Variant AM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3186 | | | 4960 | | | 4997 | |
| Flt Permitted | 0.44 | 1.00 | | 0.22 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 778 | 3318 | | 382 | 3186 | | | 4960 | | | 4997 | |
| Volume (vph) | 104 | 658 | 24 | 102 | 270 | 115 | 0 | 2472 | 276 | 0 | 2298 | 124 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 107 | 678 | 25 | 105 | 278 | 119 | 0 | 2548 | 285 | 0 | 2369 | 128 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 16 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 107 | 700 | 0 | 105 | 395 | 0 | 0 | 2817 | 0 | 0 | 2490 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 238 | 1015 | | 117 | 975 | | | 2976 | | | 2998 | |
| v/s Ratio Prot | | 0.21 | | | 0.12 | | | c0.57 | | | 0.50 | |
| v/s Ratio Perm | 0.14 | | | c0.27 | | | | | | | | |
| v/c Ratio | 0.45 | 0.69 | | 0.90 | 0.41 | | | 0.95 | | | 0.83 | |
| Uniform Delay, d1 | 23.7 | 26.0 | | 28.2 | 23.4 | | | 15.7 | | | 13.6 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.69 | |
| Incremental Delay, d2 | 6.0 | 3.8 | | 59.1 | 1.3 | | | 8.0 | | | 0.9 | |
| Delay (s) | 29.8 | 29.8 | | 87.3 | 24.6 | | | 23.8 | | | 10.4 | |
| Level of Service | C | C | | F | C | | | C | | | B | |
| Approach Delay (s) | | 29.8 | | | 37.7 | | | 23.8 | | | 10.4 | |
| Approach LOS | | C | | | D | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.5 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.93 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5026 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5026 | |
| Volume (vph) | 41 | 77 | 0 | 2959 | 2604 | 35 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 43 | 80 | 0 | 3082 | 2712 | 36 |
| RTOR Reduction (vph) | 0 | 6 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 43 | 74 | 0 | 3082 | 2747 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Effective Green, g (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Actuated g/C Ratio | 0.05 | 0.17 | | 0.86 | 0.73 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 88 | 483 | | 4313 | 3690 | |
| v/s Ratio Prot | c0.02 | 0.03 | | c0.61 | c0.55 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.49 | 0.15 | | 0.71 | 0.74 | |
| Uniform Delay, d1 | 39.4 | 29.9 | | 2.3 | 6.6 | |
| Progression Factor | 1.00 | 1.00 | | 0.41 | 1.00 | |
| Incremental Delay, d2 | 4.2 | 0.1 | | 0.4 | 1.4 | |
| Delay (s) | 43.6 | 30.1 | | 1.3 | 8.0 | |
| Level of Service | D | C | | A | A | |
| Approach Delay (s) | 34.8 | | | 1.3 | 8.0 | |
| Approach LOS | C | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 5.1 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 67.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

**Year 2025**
**Alternative 4 (Battery Caulfield Alternative)**
**Park Presidio Boulevard Access Variant**
**AM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 608 | 14 | 17 | 287 | 1 | 3 | 1 | 43 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 661 | 15 | 18 | 312 | 1 | 3 | 1 | 47 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 313 | | | 676 | | | 1028 | 1023 | 668 | 1070 | 1030 | 312 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 313 | | | 676 | | | 1028 | 1023 | 668 | 1070 | 1030 | 312 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 98 | 100 | 90 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1259 | | | 925 | | | 207 | 232 | 461 | 177 | 230 | 732 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 678 | 332 | 51 | 12 |
| Volume Left | 2 | 18 | 3 | 4 |
| Volume Right | 15 | 1 | 47 | 3 |
| cSH | 1259 | 925 | 420 | 249 |
| Volume to Capacity | 0.00 | 0.02 | 0.12 | 0.05 |
| Queue Length 95th (ft) | 0 | 2 | 10 | 4 |
| Control Delay (s) | 0.0 | 0.7 | 14.8 | 20.2 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.7 | 14.8 | 20.2 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 43.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 19 | 621 | 14 | 14 | 301 | 18 | 2 | 28 | 41 | 6 | 2 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 20 | 647 | 15 | 15 | 314 | 19 | 2 | 29 | 43 | 6 | 2 | 2 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 681 | 347 | 74 | 10 |
| Volume Left (vph) | 20 | 15 | 2 | 6 |
| Volume Right (vph) | 15 | 19 | 43 | 2 |
| Hadj (s) | -0.01 | -0.02 | -0.34 | 0.00 |
| Departure Headway (s) | 4.6 | 4.9 | 5.9 | 6.4 |
| Degree Utilization, x | 0.87 | 0.47 | 0.12 | 0.02 |
| Capacity (veh/h) | 771 | 710 | 567 | 506 |
| Control Delay (s) | 29.4 | 12.3 | 9.7 | 9.6 |
| Approach Delay (s) | 29.4 | 12.3 | 9.7 | 9.6 |
| Approach LOS | D | B | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 22.6 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 51.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 23 | 639 | 6 | 180 | 325 | 18 | 4 | 26 | 44 | 3 | 2 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 23 | 652 | 6 | 184 | 332 | 18 | 4 | 27 | 45 | 3 | 2 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 350 | | | 658 | | | 1415 | 1419 | 655 | 1468 | 1413 | 341 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 305 | | | 658 | | | 1444 | 1448 | 655 | 1501 | 1442 | 295 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 80 | | | 95 | 73 | 90 | 95 | 98 | 99 |
| cM capacity (veh/h) | 1185 | | | 939 | | | 85 | 98 | 470 | 57 | 99 | 700 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 682 | 534 | 76 | 9 |
| Volume Left | 23 | 184 | 4 | 3 |
| Volume Right | 6 | 18 | 45 | 4 |
| cSH | 1185 | 939 | 182 | 115 |
| Volume to Capacity | 0.02 | 0.20 | 0.42 | 0.08 |
| Queue Length 95th (ft) | 2 | 18 | 47 | 6 |
| Control Delay (s) | 0.5 | 4.9 | 38.2 | 39.1 |
| Lane LOS | A | A | E | E |
| Approach Delay (s) | 0.5 | 4.9 | 38.2 | 39.1 |
| Approach LOS | | | E | E |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 4.8 | | | |
| Intersection Capacity Utilization | 77.8% | | ICU Level of Service | D |
| Analysis Period (min) | 15 | | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4937 | |
| Flt Permitted | 0.59 | 1.00 | 1.00 | 0.23 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1071 | 1756 | 1492 | 399 | 1756 | 1492 | | 5012 | | | 4937 | |
| Volume (vph) | 217 | 437 | 32 | 65 | 174 | 137 | 0 | 2605 | 85 | 0 | 2318 | 350 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 226 | 455 | 33 | 68 | 181 | 143 | 0 | 2714 | 89 | 0 | 2415 | 365 |
| RTOR Reduction (vph) | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 24 | 0 |
| Lane Group Flow (vph) | 226 | 455 | 31 | 68 | 181 | 142 | 0 | 2799 | 0 | 0 | 2756 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 353 | 578 | 491 | 131 | 578 | 491 | | 2889 | | | 2846 | |
| v/s Ratio Prot | | c0.26 | | | 0.10 | | | c0.56 | | | 0.56 | |
| v/s Ratio Perm | 0.21 | | 0.02 | 0.17 | | 0.10 | | | | | | |
| v/c Ratio | 0.64 | 0.79 | 0.06 | 0.52 | 0.31 | 0.29 | | 0.97 | | | 0.97 | |
| Uniform Delay, d1 | 24.2 | 25.8 | 19.5 | 23.1 | 21.3 | 21.1 | | 17.3 | | | 17.3 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.65 | | | 0.57 | |
| Incremental Delay, d2 | 8.6 | 10.4 | 0.2 | 13.9 | 1.4 | 1.5 | | 5.8 | | | 8.5 | |
| Delay (s) | 32.8 | 36.2 | 19.8 | 37.0 | 22.7 | 22.6 | | 17.0 | | | 18.4 | |
| Level of Service | C | D | B | D | C | C | | B | | | B | |
| Approach Delay (s) | | 34.4 | | | 25.2 | | | 17.0 | | | 18.4 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 19.9 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.90 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 89.2% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Avenue

Year 2025 Variant AM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 507 | 14 | 3 | 362 | 4 | 12 | 3 | 18 | 3 | 2 | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 1 | 576 | 16 | 3 | 411 | 5 | 14 | 3 | 20 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 71 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.77 | | | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | |
| vC, conflicting volume | 416 | | | 592 | | | 1010 | 1009 | 584 | 1029 | 1015 | 414 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 416 | | | 467 | | | 1013 | 1012 | 456 | 1038 | 1019 | 414 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 92 | 98 | 96 | 98 | 99 | 100 |
| cM capacity (veh/h) | 1148 | | | 842 | | | 165 | 184 | 465 | 152 | 182 | 643 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 593 | 419 | 38 | 8 |
| Volume Left | 1 | 3 | 14 | 3 |
| Volume Right | 16 | 5 | 20 | 2 |
| cSH | 1148 | 842 | 258 | 206 |
| Volume to Capacity | 0.00 | 0.00 | 0.15 | 0.04 |
| Queue Length 95th (ft) | 0 | 0 | 13 | 3 |
| Control Delay (s) | 0.0 | 0.1 | 21.3 | 23.1 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 21.3 | 23.1 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.0 | | |
| Intersection Capacity Utilization | 38.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue

Year 2025 Variant AM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 37 | 597 | 15 | 12 | 292 | 25 | 8 | 9 | 32 | 4 | 12 | 14 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 39 | 635 | 16 | 13 | 311 | 27 | 9 | 10 | 34 | 4 | 13 | 15 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 337 | | | 651 | | | 1093 | 1085 | 643 | 1110 | 1079 | 324 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 283 | | | 651 | | | 1100 | 1091 | 643 | 1119 | 1086 | 269 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 99 | | | 95 | 95 | 93 | 97 | 93 | 98 |
| cM capacity (veh/h) | 1194 | | | 945 | | | 159 | 191 | 477 | 148 | 192 | 716 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 690 | 350 | 52 | 32 |
| Volume Left | 39 | 13 | 9 | 4 |
| Volume Right | 16 | 27 | 34 | 15 |
| cSH | 1194 | 945 | 298 | 275 |
| Volume to Capacity | 0.03 | 0.01 | 0.18 | 0.12 |
| Queue Length 95th (ft) | 3 | 1 | 16 | 10 |
| Control Delay (s) | 0.9 | 0.5 | 19.6 | 19.8 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.9 | 0.5 | 19.6 | 19.8 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.2 | | |
| Intersection Capacity Utilization | 58.1% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

HCM Unsignalized Intersection Capacity Analysis
106: California Street & 14th Avenue

Year 2025 Variant AM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 26 | 594 | 14 | 56 | 314 | 23 | 1 | 26 | 29 | 161 | 13 | 14 |
| Peak Hour Factor | 0.91 | 0.91 | 0.25 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 29 | 653 | 56 | 62 | 345 | 25 | 1 | 29 | 32 | 177 | 14 | 15 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 370 | | | 709 | | | 1056 | 1231 | 354 | 910 | 1247 | 185 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 299 | | | 709 | | | 1015 | 1198 | 354 | 863 | 1214 | 106 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 93 | | | 99 | 82 | 95 | 4 | 91 | 98 |
| cM capacity (veh/h) | 1220 | | | 899 | | | 160 | 163 | 648 | 185 | 160 | 895 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 355 | 382 | 234 | 198 | 62 | 207 |
| Volume Left | 29 | 0 | 62 | 0 | 1 | 177 |
| Volume Right | 0 | 56 | 0 | 25 | 32 | 15 |
| cSH | 1220 | 1700 | 899 | 1700 | 266 | 195 |
| Volume to Capacity | 0.02 | 0.22 | 0.07 | 0.12 | 0.23 | 1.06 |
| Queue Length 95th (ft) | 2 | 0 | 5 | 0 | 22 | 240 |
| Control Delay (s) | 0.9 | 0.0 | 3.0 | 0.0 | 22.5 | 132.4 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 0.4 | | 1.6 | | 22.5 | 132.4 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 20.7 | | |
| Intersection Capacity Utilization | 55.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



HCM Signalized Intersection Capacity Analysis
107: California Street & Park Presidio Boulevard

Year 2025 Variant AM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3186 | | | 4960 | | | 4997 | |
| Flt Permitted | 0.44 | 1.00 | | 0.22 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 778 | 3318 | | 385 | 3186 | | | 4960 | | | 4997 | |
| Volume (vph) | 104 | 656 | 24 | 102 | 270 | 115 | 0 | 2472 | 276 | 0 | 2291 | 123 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 107 | 676 | 25 | 105 | 278 | 119 | 0 | 2548 | 285 | 0 | 2362 | 127 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 16 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 107 | 698 | 0 | 105 | 395 | 0 | 0 | 2817 | 0 | 0 | 2482 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 238 | 1015 | | 118 | 975 | | | 2976 | | | 2998 | |
| v/s Ratio Prot | | 0.21 | | | 0.12 | | | c0.57 | | | 0.50 | |
| v/s Ratio Perm | 0.14 | | | c0.27 | | | | | | | | |
| v/c Ratio | 0.45 | 0.69 | | 0.89 | 0.41 | | | 0.95 | | | 0.83 | |
| Uniform Delay, d1 | 23.7 | 25.9 | | 28.1 | 23.4 | | | 15.7 | | | 13.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.69 | |
| Incremental Delay, d2 | 6.0 | 3.8 | | 57.2 | 1.3 | | | 8.0 | | | 0.9 | |
| Delay (s) | 29.8 | 29.7 | | 85.3 | 24.6 | | | 23.8 | | | 10.3 | |
| Level of Service | C | C | | F | C | | | C | | | B | |
| Approach Delay (s) | | 29.7 | | | 37.3 | | | 23.8 | | | 10.3 | |
| Approach LOS | | C | | | D | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.5 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.93 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
108: New Alternative Access & Park Presidio Boulevard — Year 2025 Variant AM Peak Alt 4

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5027 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5027 | |
| Volume (vph) | 32 | 63 | 0 | 2959 | 2604 | 32 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 33 | 66 | 0 | 3082 | 2712 | 33 |
| RTOR Reduction (vph) | 0 | 6 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 33 | 60 | 0 | 3082 | 2744 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Effective Green, g (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Actuated g/C Ratio | 0.05 | 0.17 | | 0.86 | 0.73 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 88 | 483 | | 4313 | 3690 | |
| v/s Ratio Prot | c0.02 | 0.02 | | c0.61 | c0.55 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.38 | 0.12 | | 0.71 | 0.74 | |
| Uniform Delay, d1 | 39.1 | 29.8 | | 2.3 | 6.6 | |
| Progression Factor | 1.00 | 1.00 | | 0.41 | 1.00 | |
| Incremental Delay, d2 | 2.7 | 0.1 | | 0.4 | 1.4 | |
| Delay (s) | 41.8 | 29.9 | | 1.3 | 8.0 | |
| Level of Service | D | C | | A | A | |
| Approach Delay (s) | 33.9 | | | 1.3 | 8.0 | |
| Approach LOS | C | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 5.0 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 67.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

**Year 2025**
**Alternative 1 (PTMP Alternative) Park**
**Presidio Boulevard Access Variant**
**PM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue

Year 2025 Variant PM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 376 | 11 | 28 | 490 | 4 | 4 | 1 | 28 | 8 | 3 | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 2 | 404 | 12 | 30 | 527 | 4 | 4 | 1 | 30 | 9 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 531 | | | 416 | | | 1008 | 1006 | 410 | 1034 | 1010 | 529 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 531 | | | 416 | | | 1008 | 1006 | 410 | 1034 | 1010 | 529 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 97 | | | 98 | 100 | 95 | 96 | 99 | 100 |
| cM capacity (veh/h) | 1046 | | | 1154 | | | 213 | 236 | 646 | 197 | 235 | 554 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 418 | 561 | 35 | 14 |
| Volume Left | 2 | 30 | 4 | 9 |
| Volume Right | 12 | 4 | 30 | 2 |
| cSH | 1046 | 1154 | 497 | 228 |
| Volume to Capacity | 0.00 | 0.03 | 0.07 | 0.06 |
| Queue Length 95th (ft) | 0 | 2 | 6 | 5 |
| Control Delay (s) | 0.1 | 0.7 | 12.8 | 21.8 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 12.8 | 21.8 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 56.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

Year 2025 Variant PM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 32 | 374 | 6 | 20 | 512 | 16 | 9 | 59 | 19 | 7 | 3 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 35 | 411 | 7 | 22 | 563 | 18 | 10 | 65 | 21 | 8 | 3 | 1 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 453 | 602 | 96 | 12 |
| Volume Left (vph) | 35 | 22 | 10 | 8 |
| Volume Right (vph) | 7 | 18 | 21 | 1 |
| Hadj (s) | 0.01 | -0.01 | -0.11 | 0.07 |
| Departure Headway (s) | 5.0 | 4.8 | 6.3 | 6.7 |
| Degree Utilization, x | 0.63 | 0.81 | 0.17 | 0.02 |
| Capacity (veh/h) | 695 | 737 | 526 | 466 |
| Control Delay (s) | 16.1 | 24.7 | 10.5 | 9.9 |
| Approach Delay (s) | 16.1 | 24.7 | 10.5 | 9.9 |
| Approach LOS | C | C | B | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 20.0 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 44.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

Year 2025 Variant PM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 28 | 368 | 4 | 236 | 545 | 32 | 2 | 51 | 55 | 6 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 30 | 396 | 4 | 254 | 586 | 34 | 2 | 55 | 59 | 6 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.82 | | | | | | 0.82 | 0.82 | | 0.82 | 0.82 | 0.82 |
| vC, conflicting volume | 620 | | | 400 | | | 1570 | 1586 | 398 | 1655 | 1571 | 603 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 540 | | | 400 | | | 1692 | 1711 | 398 | 1795 | 1693 | 519 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 78 | | | 96 | 4 | 91 | 0 | 98 | 100 |
| cM capacity (veh/h) | 857 | | | 1170 | | | 49 | 57 | 656 | 5 | 59 | 463 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 430 | 874 | 116 | 9 |
| Volume Left | 30 | 254 | 2 | 6 |
| Volume Right | 4 | 34 | 59 | 1 |
| cSH | 857 | 1170 | 106 | 7 |
| Volume to Capacity | 0.04 | 0.22 | 1.10 | 1.24 |
| Queue Length 95th (ft) | 3 | 21 | 181 | 48 |
| Control Delay (s) | 1.1 | 4.8 | 191.5 | 1115.3 |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 1.1 | 4.8 | 191.5 | 1115.3 |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 25.5 | | |
| Intersection Capacity Utilization | 81.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

Year 2025 Variant PM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5015 | | | 4939 | |
| Flt Permitted | 0.34 | 1.00 | 1.00 | 0.47 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 611 | 1756 | 1492 | 828 | 1756 | 1492 | | 5015 | | | 4939 | |
| Volume (vph) | 143 | 257 | 29 | 81 | 357 | 187 | 0 | 2466 | 80 | 0 | 2644 | 456 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 147 | 265 | 30 | 84 | 368 | 193 | 0 | 2542 | 82 | 0 | 2726 | 470 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 28 | 0 |
| Lane Group Flow (vph) | 147 | 265 | 29 | 84 | 368 | 192 | 0 | 2620 | 0 | 0 | 3168 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 1% | 1% | 3% | 1% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 201 | 578 | 491 | 273 | 578 | 491 | | 2891 | | | 2847 | |
| v/s Ratio Prot | | 0.15 | | | 0.21 | | | 0.52 | | | c0.64 | |
| v/s Ratio Perm | c0.24 | | 0.02 | 0.10 | | 0.13 | | | | | | |
| v/c Ratio | 0.73 | 0.46 | 0.06 | 0.31 | 0.64 | 0.39 | | 0.91 | | | 1.11 | |
| Uniform Delay, d1 | 25.2 | 22.5 | 19.5 | 21.3 | 24.2 | 21.9 | | 16.0 | | | 18.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.21 | | | 0.52 | |
| Incremental Delay, d2 | 20.8 | 2.6 | 0.2 | 2.9 | 5.3 | 2.3 | | 1.7 | | | 53.4 | |
| Delay (s) | 46.0 | 25.1 | 19.7 | 24.2 | 29.5 | 24.3 | | 21.0 | | | 62.6 | |
| Level of Service | D | C | B | C | C | C | | C | | | E | |
| Approach Delay (s) | | 31.7 | | | 27.2 | | | 21.0 | | | 62.6 | |
| Approach LOS | | C | | | C | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 41.5 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.97 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 98.0% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 14 | 316 | 7 | 8 | 601 | 6 | 20 | 1 | 18 | 1 | 1 | 4 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Hourly flow rate (vph) | 16 | 363 | 8 | 9 | 691 | 7 | 23 | 1 | 21 | 1 | 1 | 5 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 68 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.88 | | | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| vC, conflicting volume | 698 | | | 371 | | | 1117 | 1116 | 367 | 1133 | 1116 | 694 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 698 | | | 287 | | | 1133 | 1131 | 283 | 1151 | 1132 | 694 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 85 | 99 | 97 | 99 | 99 | 99 |
| cM capacity (veh/h) | 903 | | | 1130 | | | 155 | 176 | 671 | 147 | 176 | 446 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 387 | 707 | 45 | 7 |
| Volume Left | 16 | 9 | 23 | 1 |
| Volume Right | 8 | 7 | 21 | 5 |
| cSH | 903 | 1130 | 241 | 280 |
| Volume to Capacity | 0.02 | 0.01 | 0.19 | 0.02 |
| Queue Length 95th (ft) | 1 | 1 | 17 | 2 |
| Control Delay (s) | 0.6 | 0.2 | 23.3 | 18.2 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.6 | 0.2 | 23.3 | 18.2 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.4 | | |
| Intersection Capacity Utilization | 47.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 51 | 511 | 8 | 18 | 451 | 20 | 9 | 16 | 33 | 7 | 12 | 10 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 53 | 527 | 8 | 19 | 465 | 21 | 9 | 16 | 34 | 7 | 12 | 10 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.85 | | | | | | 0.85 | 0.85 | | 0.85 | 0.85 | 0.85 |
| vC, conflicting volume | 486 | | | 535 | | | 1165 | 1159 | 531 | 1191 | 1153 | 475 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 396 | | | 535 | | | 1194 | 1186 | 531 | 1224 | 1179 | 384 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 95 | | | 98 | | | 92 | 89 | 94 | 93 | 92 | 98 |
| cM capacity (veh/h) | 1000 | | | 1043 | | | 123 | 151 | 552 | 109 | 152 | 569 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 588 | 504 | 60 | 30 |
| Volume Left | 53 | 19 | 9 | 7 |
| Volume Right | 8 | 21 | 34 | 10 |
| cSH | 1000 | 1043 | 242 | 181 |
| Volume to Capacity | 0.05 | 0.02 | 0.25 | 0.17 |
| Queue Length 95th (ft) | 4 | 1 | 24 | 14 |
| Control Delay (s) | 1.4 | 0.5 | 24.6 | 28.8 |
| Lane LOS | A | A | C | D |
| Approach Delay (s) | 1.4 | 0.5 | 24.6 | 28.8 |
| Approach LOS | | | C | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.9 | | |
| Intersection Capacity Utilization | 59.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

Year 2025 Variant PM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 74 | 470 | 7 | 69 | 480 | 15 | 2 | 19 | 33 | 208 | 25 | 8 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 78 | 495 | 7 | 73 | 505 | 16 | 2 | 20 | 35 | 219 | 26 | 8 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.90 | | | | | | 0.90 | 0.90 | | 0.90 | 0.90 | 0.90 |
| vC, conflicting volume | 521 | | | 502 | | | 1074 | 1321 | 251 | 1106 | 1316 | 261 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 364 | | | 502 | | | 976 | 1249 | 251 | 1012 | 1244 | 76 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 93 | | | 93 | | | 99 | 85 | 95 | 0 | 81 | 99 |
| cM capacity (veh/h) | 1090 | | | 1073 | | | 143 | 137 | 755 | 135 | 138 | 882 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 325 | 255 | 325 | 268 | 57 | 254 |
| Volume Left | 78 | 0 | 73 | 0 | 2 | 219 |
| Volume Right | 0 | 7 | 0 | 16 | 35 | 8 |
| cSH | 1090 | 1700 | 1073 | 1700 | 275 | 139 |
| Volume to Capacity | 0.07 | 0.15 | 0.07 | 0.16 | 0.21 | 1.82 |
| Queue Length 95th (ft) | 6 | 0 | 5 | 0 | 19 | 481 |
| Control Delay (s) | 2.6 | 0.0 | 2.5 | 0.0 | 21.5 | 450.0 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 1.5 | | 1.3 | | 21.5 | 450.0 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 78.8 | | |
| Intersection Capacity Utilization | 61.1% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

Year 2025 Variant PM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3308 | | 1668 | 3195 | | | 4968 | | | 4996 | |
| Flt Permitted | 0.33 | 1.00 | | 0.31 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 574 | 3308 | | 537 | 3195 | | | 4968 | | | 4996 | |
| Volume (vph) | 97 | 580 | 34 | 170 | 418 | 163 | 0 | 2287 | 227 | 0 | 2608 | 146 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 102 | 611 | 36 | 179 | 440 | 172 | 0 | 2407 | 239 | 0 | 2745 | 154 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 14 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 102 | 646 | 0 | 179 | 611 | 0 | 0 | 2632 | 0 | 0 | 2892 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Effective Green, g (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Actuated g/C Ratio | 0.39 | 0.39 | | 0.39 | 0.39 | | | 0.52 | | | 0.52 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 223 | 1284 | | 208 | 1240 | | | 2572 | | | 2586 | |
| v/s Ratio Prot | | 0.20 | | | 0.19 | | | 0.53 | | | c0.58 | |
| v/s Ratio Perm | 0.18 | | | c0.33 | | | | | | | | |
| v/c Ratio | 0.46 | 0.50 | | 0.86 | 0.49 | | | 1.02 | | | 1.12 | |
| Uniform Delay, d1 | 19.3 | 19.8 | | 23.9 | 19.7 | | | 20.5 | | | 20.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.43 | |
| Incremental Delay, d2 | 6.6 | 1.4 | | 34.5 | 1.4 | | | 24.0 | | | 53.8 | |
| Delay (s) | 26.0 | 21.2 | | 58.4 | 21.1 | | | 44.5 | | | 62.7 | |
| Level of Service | C | C | | E | C | | | D | | | E | |
| Approach Delay (s) | | 21.8 | | | 29.5 | | | 44.5 | | | 62.7 | |
| Approach LOS | | C | | | C | | | D | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 47.9 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 1.01 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 90.2% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5009 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5009 | |
| Volume (vph) | 105 | 162 | 0 | 2796 | 2938 | 110 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 109 | 169 | 0 | 2912 | 3060 | 115 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 5 | 0 |
| Lane Group Flow (vph) | 109 | 166 | 0 | 2912 | 3170 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 3.0 | 18.0 | | 74.0 | 59.0 | |
| Effective Green, g (s) | 3.0 | 18.0 | | 74.0 | 59.0 | |
| Actuated g/C Ratio | 0.04 | 0.21 | | 0.87 | 0.69 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 63 | 596 | | 4384 | 3477 | |
| v/s Ratio Prot | c0.06 | 0.06 | | c0.58 | c0.63 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 1.73 | 0.28 | | 0.66 | 0.91 | |
| Uniform Delay, d1 | 41.0 | 28.1 | | 1.7 | 10.8 | |
| Progression Factor | 1.00 | 1.00 | | 0.35 | 1.00 | |
| Incremental Delay, d2 | 386.2 | 0.3 | | 0.4 | 4.8 | |
| Delay (s) | 427.2 | 28.3 | | 1.0 | 15.6 | |
| Level of Service | F | C | | A | B | |
| Approach Delay (s) | 184.7 | | | 1.0 | 15.6 | |
| Approach LOS | F | | | A | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.3 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.88 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 71.7% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

**Year 2025**
**Alternative 2 (Wings Retained/Trust Revised Alternative) Park Presidio Boulevard Access Variant**
**PM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue

Year 2025 Variant PM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 357 | 11 | 28 | 469 | 4 | 4 | 1 | 28 | 8 | 3 | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 2 | 384 | 12 | 30 | 504 | 4 | 4 | 1 | 30 | 9 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 509 | | | 396 | | | 965 | 963 | 390 | 991 | 967 | 506 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 509 | | | 396 | | | 965 | 963 | 390 | 991 | 967 | 506 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 97 | | | 98 | 100 | 95 | 96 | 99 | 100 |
| cM capacity (veh/h) | 1067 | | | 1174 | | | 228 | 251 | 663 | 211 | 249 | 570 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 398 | 539 | 35 | 14 |
| Volume Left | 2 | 30 | 4 | 9 |
| Volume Right | 12 | 4 | 30 | 2 |
| cSH | 1067 | 1174 | 518 | 243 |
| Volume to Capacity | 0.00 | 0.03 | 0.07 | 0.06 |
| Queue Length 95th (ft) | 0 | 2 | 5 | 5 |
| Control Delay (s) | 0.1 | 0.7 | 12.5 | 20.7 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 12.5 | 20.7 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 54.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

Year 2025 Variant PM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 13 | 374 | 6 | 20 | 491 | 16 | 9 | 40 | 19 | 7 | 3 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 14 | 411 | 7 | 22 | 540 | 18 | 10 | 44 | 21 | 8 | 3 | 1 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 432 | 579 | 75 | 12 |
| Volume Left (vph) | 14 | 22 | 10 | 8 |
| Volume Right (vph) | 7 | 18 | 21 | 1 |
| Hadj (s) | 0.00 | -0.01 | -0.14 | 0.07 |
| Departure Headway (s) | 4.9 | 4.7 | 6.1 | 6.5 |
| Degree Utilization, x | 0.58 | 0.75 | 0.13 | 0.02 |
| Capacity (veh/h) | 716 | 756 | 532 | 481 |
| Control Delay (s) | 14.4 | 20.6 | 10.0 | 9.6 |
| Approach Delay (s) | 14.4 | 20.6 | 10.0 | 9.6 |
| Approach LOS | B | C | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 17.3 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 45.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 28 | 368 | 4 | 231 | 524 | 13 | 2 | 32 | 55 | 6 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 30 | 396 | 4 | 248 | 563 | 14 | 2 | 34 | 59 | 6 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.84 | | | | | | 0.84 | 0.84 | | 0.84 | 0.84 | 0.84 |
| vC, conflicting volume | 577 | | | 400 | | | 1527 | 1532 | 398 | 1602 | 1527 | 570 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 495 | | | 400 | | | 1629 | 1636 | 398 | 1719 | 1630 | 487 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 79 | | | 96 | 47 | 91 | 76 | 98 | 100 |
| cM capacity (veh/h) | 903 | | | 1170 | | | 56 | 65 | 656 | 26 | 65 | 489 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 430 | 826 | 96 | 9 |
| Volume Left | 30 | 248 | 2 | 6 |
| Volume Right | 4 | 14 | 59 | 1 |
| cSH | 903 | 1170 | 145 | 33 |
| Volume to Capacity | 0.03 | 0.21 | 0.66 | 0.26 |
| Queue Length 95th (ft) | 3 | 20 | 91 | 21 |
| Control Delay (s) | 1.0 | 4.7 | 68.1 | 150.8 |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 1.0 | 4.7 | 68.1 | 150.8 |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 8.9 | | |
| Intersection Capacity Utilization | 77.4% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5015 | | | 4942 | |
| Flt Permitted | 0.36 | 1.00 | 1.00 | 0.47 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 658 | 1756 | 1492 | 828 | 1756 | 1492 | | 5015 | | | 4942 | |
| Volume (vph) | 143 | 257 | 29 | 81 | 338 | 187 | 0 | 2466 | 80 | 0 | 2588 | 430 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 147 | 265 | 30 | 84 | 348 | 193 | 0 | 2542 | 82 | 0 | 2668 | 443 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 27 | 0 |
| Lane Group Flow (vph) | 147 | 265 | 29 | 84 | 348 | 192 | 0 | 2620 | 0 | 0 | 3084 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 1% | 1% | 3% | 1% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 217 | 578 | 491 | 273 | 578 | 491 | | 2891 | | | 2849 | |
| v/s Ratio Prot | | 0.15 | | | 0.20 | | | 0.52 | | | c0.62 | |
| v/s Ratio Perm | c0.22 | | 0.02 | 0.10 | | 0.13 | | | | | | |
| v/c Ratio | 0.68 | 0.46 | 0.06 | 0.31 | 0.60 | 0.39 | | 0.91 | | | 1.08 | |
| Uniform Delay, d1 | 24.6 | 22.5 | 19.5 | 21.3 | 23.8 | 21.9 | | 16.0 | | | 18.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.21 | | | 0.55 | |
| Incremental Delay, d2 | 15.7 | 2.6 | 0.2 | 2.9 | 4.6 | 2.3 | | 1.7 | | | 41.3 | |
| Delay (s) | 40.3 | 25.1 | 19.7 | 24.2 | 28.4 | 24.3 | | 21.0 | | | 51.2 | |
| Level of Service | D | C | B | C | C | C | | C | | | D | |
| Approach Delay (s) | | 29.8 | | | 26.6 | | | 21.0 | | | 51.2 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 35.9 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.94 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 95.3% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Avenue

Year 2025 Variant PM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 14 | 316 | 7 | 8 | 582 | 6 | 20 | 1 | 18 | 1 | 1 | 4 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Hourly flow rate (vph) | 16 | 363 | 8 | 9 | 669 | 7 | 23 | 1 | 21 | 1 | 1 | 5 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 68 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.88 | | | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| vC, conflicting volume | 676 | | | 371 | | | 1095 | 1094 | 367 | 1111 | 1094 | 672 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 676 | | | 287 | | | 1108 | 1106 | 283 | 1126 | 1107 | 672 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 86 | 99 | 97 | 99 | 99 | 99 |
| cM capacity (veh/h) | 920 | | | 1130 | | | 161 | 182 | 671 | 153 | 182 | 459 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 387 | 685 | 45 | 7 |
| Volume Left | 16 | 9 | 23 | 1 |
| Volume Right | 8 | 7 | 21 | 5 |
| cSH | 920 | 1130 | 249 | 289 |
| Volume to Capacity | 0.02 | 0.01 | 0.18 | 0.02 |
| Queue Length 95th (ft) | 1 | 1 | 16 | 2 |
| Control Delay (s) | 0.6 | 0.2 | 22.6 | 17.7 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.6 | 0.2 | 22.6 | 17.7 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.3 | | |
| Intersection Capacity Utilization | 46.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue

Year 2025 Variant PM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 34 | 494 | 8 | 18 | 451 | 20 | 9 | 14 | 33 | 7 | 12 | 10 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 35 | 509 | 8 | 19 | 465 | 21 | 9 | 14 | 34 | 7 | 12 | 10 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.85 | | | | | | 0.85 | 0.85 | | 0.85 | 0.85 | 0.85 |
| vC, conflicting volume | 486 | | | 518 | | | 1112 | 1106 | 513 | 1137 | 1100 | 475 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 396 | | | 518 | | | 1132 | 1125 | 513 | 1161 | 1117 | 384 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 98 | | | 93 | 91 | 94 | 94 | 93 | 98 |
| cM capacity (veh/h) | 1000 | | | 1059 | | | 138 | 167 | 565 | 125 | 169 | 569 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 553 | 504 | 58 | 30 |
| Volume Left | 35 | 19 | 9 | 7 |
| Volume Right | 8 | 21 | 34 | 10 |
| cSH | 1000 | 1059 | 270 | 200 |
| Volume to Capacity | 0.04 | 0.02 | 0.21 | 0.15 |
| Queue Length 95th (ft) | 3 | 1 | 20 | 13 |
| Control Delay (s) | 1.0 | 0.5 | 21.9 | 26.1 |
| Lane LOS | A | A | C | D |
| Approach Delay (s) | 1.0 | 0.5 | 21.9 | 26.1 |
| Approach LOS | | | C | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.5 | | |
| Intersection Capacity Utilization | 50.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

Year 2025 Variant PM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 58 | 470 | 7 | 69 | 480 | 15 | 2 | 17 | 33 | 203 | 25 | 8 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 61 | 495 | 7 | 73 | 505 | 16 | 2 | 18 | 35 | 214 | 26 | 8 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.90 | | | | | | 0.90 | 0.90 | | 0.90 | 0.90 | 0.90 |
| vC, conflicting volume | 521 | | | 502 | | | 1040 | 1287 | 251 | 1072 | 1283 | 261 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 364 | | | 502 | | | 938 | 1211 | 251 | 973 | 1207 | 76 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 94 | | | 93 | | | 99 | 88 | 95 | 0 | 82 | 99 |
| cM capacity (veh/h) | 1090 | | | 1073 | | | 156 | 146 | 755 | 149 | 147 | 882 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 308 | 255 | 325 | 268 | 55 | 248 |
| Volume Left | 61 | 0 | 73 | 0 | 2 | 214 |
| Volume Right | 0 | 7 | 0 | 16 | 35 | 8 |
| cSH | 1090 | 1700 | 1073 | 1700 | 301 | 153 |
| Volume to Capacity | 0.06 | 0.15 | 0.07 | 0.16 | 0.18 | 1.62 |
| Queue Length 95th (ft) | 4 | 0 | 5 | 0 | 16 | 433 |
| Control Delay (s) | 2.1 | 0.0 | 2.5 | 0.0 | 19.6 | 360.5 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 1.2 | | 1.3 | | 19.6 | 360.5 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 63.1 | | | |
| Intersection Capacity Utilization | 60.4% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

Year 2025 Variant PM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3308 | | 1668 | 3195 | | | 4968 | | | 4995 | |
| Flt Permitted | 0.33 | 1.00 | | 0.31 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 574 | 3308 | | 543 | 3195 | | | 4968 | | | 4995 | |
| Volume (vph) | 97 | 575 | 34 | 170 | 418 | 163 | 0 | 2287 | 227 | 0 | 2552 | 146 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 102 | 605 | 36 | 179 | 440 | 172 | 0 | 2407 | 239 | 0 | 2686 | 154 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 14 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 102 | 640 | 0 | 179 | 611 | 0 | 0 | 2632 | 0 | 0 | 2833 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Effective Green, g (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Actuated g/C Ratio | 0.39 | 0.39 | | 0.39 | 0.39 | | | 0.52 | | | 0.52 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 223 | 1284 | | 211 | 1240 | | | 2572 | | | 2586 | |
| v/s Ratio Prot | | 0.19 | | | 0.19 | | | 0.53 | | | c0.57 | |
| v/s Ratio Perm | 0.18 | | | c0.33 | | | | | | | | |
| v/c Ratio | 0.46 | 0.50 | | 0.85 | 0.49 | | | 1.02 | | | 1.10 | |
| Uniform Delay, d1 | 19.3 | 19.7 | | 23.7 | 19.7 | | | 20.5 | | | 20.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.43 | |
| Incremental Delay, d2 | 6.6 | 1.4 | | 32.4 | 1.4 | | | 24.0 | | | 43.6 | |
| Delay (s) | 26.0 | 21.1 | | 56.1 | 21.1 | | | 44.5 | | | 52.5 | |
| Level of Service | C | C | | E | C | | | D | | | D | |
| Approach Delay (s) | | 21.8 | | | 29.0 | | | 44.5 | | | 52.5 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 43.6 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.99 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 89.0% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5024 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5024 | |
| Volume (vph) | 48 | 80 | 0 | 2796 | 2938 | 48 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 50 | 83 | 0 | 2912 | 3060 | 50 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 50 | 80 | 0 | 2912 | 3108 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 2.4 | 14.4 | | 74.6 | 62.6 | |
| Effective Green, g (s) | 2.4 | 14.4 | | 74.6 | 62.6 | |
| Actuated g/C Ratio | 0.03 | 0.17 | | 0.88 | 0.74 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 50 | 477 | | 4420 | 3700 | |
| v/s Ratio Prot | c0.03 | 0.03 | | c0.58 | c0.62 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 1.00 | 0.17 | | 0.66 | 0.84 | |
| Uniform Delay, d1 | 41.3 | 30.2 | | 1.5 | 7.7 | |
| Progression Factor | 1.00 | 1.00 | | 0.32 | 1.00 | |
| Incremental Delay, d2 | 127.3 | 0.2 | | 0.4 | 2.5 | |
| Delay (s) | 168.6 | 30.3 | | 0.9 | 10.2 | |
| Level of Service | F | C | | A | B | |
| Approach Delay (s) | 82.3 | | | 0.9 | 10.2 | |
| Approach LOS | F | | | A | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 7.4 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.80 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 67.8% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| ! Phase conflict between lane groups. | | | |
| c Critical Lane Group | | | |

**Year 2025**
**Alternative 3 (Wings Removed Alternative)**
**Park Presidio Boulevard Access Variant**
**PM Peak Hour**

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 357 | 11 | 28 | 467 | 4 | 4 | 1 | 28 | 8 | 3 | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 2 | 384 | 12 | 30 | 502 | 4 | 4 | 1 | 30 | 9 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 506 | | | 396 | | | 962 | 961 | 390 | 989 | 965 | 504 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 506 | | | 396 | | | 962 | 961 | 390 | 989 | 965 | 504 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 97 | | | 98 | 100 | 95 | 96 | 99 | 100 |
| cM capacity (veh/h) | 1069 | | | 1174 | | | 229 | 251 | 663 | 212 | 250 | 572 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 398 | 537 | 35 | 14 |
| Volume Left | 2 | 30 | 4 | 9 |
| Volume Right | 12 | 4 | 30 | 2 |
| cSH | 1069 | 1174 | 518 | 244 |
| Volume to Capacity | 0.00 | 0.03 | 0.07 | 0.06 |
| Queue Length 95th (ft) | 0 | 2 | 5 | 5 |
| Control Delay (s) | 0.1 | 0.7 | 12.5 | 20.6 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 12.5 | 20.6 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 54.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 13 | 374 | 6 | 20 | 489 | 16 | 9 | 40 | 19 | 7 | 3 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 14 | 411 | 7 | 22 | 537 | 18 | 10 | 44 | 21 | 8 | 3 | 1 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 432 | 577 | 75 | 12 |
| Volume Left (vph) | 14 | 22 | 10 | 8 |
| Volume Right (vph) | 7 | 18 | 21 | 1 |
| Hadj (s) | 0.00 | -0.01 | -0.14 | 0.07 |
| Departure Headway (s) | 4.9 | 4.7 | 6.1 | 6.5 |
| Degree Utilization, x | 0.58 | 0.75 | 0.13 | 0.02 |
| Capacity (veh/h) | 716 | 756 | 532 | 481 |
| Control Delay (s) | 14.4 | 20.4 | 10.0 | 9.6 |
| Approach Delay (s) | 14.4 | 20.4 | 10.0 | 9.6 |
| Approach LOS | B | C | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 17.2 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 45.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 28 | 368 | 4 | 230 | 522 | 13 | 2 | 32 | 55 | 6 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 30 | 396 | 4 | 247 | 561 | 14 | 2 | 34 | 59 | 6 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.84 | | | | | | 0.84 | 0.84 | | 0.84 | 0.84 | 0.84 |
| vC, conflicting volume | 575 | | | 400 | | | 1523 | 1528 | 398 | 1597 | 1523 | 568 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 493 | | | 400 | | | 1624 | 1631 | 398 | 1714 | 1625 | 484 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 79 | | | 96 | 47 | 91 | 76 | 98 | 100 |
| cM capacity (veh/h) | 905 | | | 1170 | | | 56 | 65 | 656 | 27 | 66 | 491 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 430 | 823 | 96 | 9 |
| Volume Left | 30 | 247 | 2 | 6 |
| Volume Right | 4 | 14 | 59 | 1 |
| cSH | 905 | 1170 | 146 | 33 |
| Volume to Capacity | 0.03 | 0.21 | 0.65 | 0.26 |
| Queue Length 95th (ft) | 3 | 20 | 90 | 21 |
| Control Delay (s) | 1.0 | 4.7 | 67.1 | 148.1 |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 1.0 | 4.7 | 67.1 | 148.1 |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 8.8 | | |
| Intersection Capacity Utilization | 77.3% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5015 | | | 4942 | |
| Flt Permitted | 0.36 | 1.00 | 1.00 | 0.47 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 658 | 1756 | 1492 | 828 | 1756 | 1492 | | 5015 | | | 4942 | |
| Volume (vph) | 143 | 257 | 29 | 81 | 338 | 187 | 0 | 2466 | 80 | 0 | 2583 | 427 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 147 | 265 | 30 | 84 | 348 | 193 | 0 | 2542 | 82 | 0 | 2663 | 440 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 27 | 0 |
| Lane Group Flow (vph) | 147 | 265 | 29 | 84 | 348 | 192 | 0 | 2620 | 0 | 0 | 3076 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 1% | 1% | 3% | 1% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 217 | 578 | 491 | 273 | 578 | 491 | | 2891 | | | 2849 | |
| v/s Ratio Prot | | 0.15 | | | 0.20 | | | 0.52 | | | c0.62 | |
| v/s Ratio Perm | c0.22 | | 0.02 | 0.10 | | 0.13 | | | | | | |
| v/c Ratio | 0.68 | 0.46 | 0.06 | 0.31 | 0.60 | 0.39 | | 0.91 | | | 1.08 | |
| Uniform Delay, d1 | 24.6 | 22.5 | 19.5 | 21.3 | 23.8 | 21.9 | | 16.0 | | | 18.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.21 | | | 0.54 | |
| Incremental Delay, d2 | 15.7 | 2.6 | 0.2 | 2.9 | 4.6 | 2.3 | | 1.7 | | | 40.2 | |
| Delay (s) | 40.3 | 25.1 | 19.7 | 24.2 | 28.4 | 24.3 | | 21.0 | | | 49.9 | |
| Level of Service | D | C | B | C | C | C | | C | | | D | |
| Approach Delay (s) | | 29.8 | | | 26.6 | | | 21.0 | | | 49.9 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 35.3 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.93 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 95.1% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✥ | | | ✥ | | | ✥ | | | ✥ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 14 | 316 | 7 | 8 | 582 | 6 | 20 | 1 | 18 | 1 | 1 | 4 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Hourly flow rate (vph) | 16 | 363 | 8 | 9 | 669 | 7 | 23 | 1 | 21 | 1 | 1 | 5 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 68 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.88 | | | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| vC, conflicting volume | 676 | | | 371 | | | 1095 | 1094 | 367 | 1111 | 1094 | 672 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 676 | | | 287 | | | 1108 | 1106 | 283 | 1126 | 1107 | 672 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 86 | 99 | 97 | 99 | 99 | 99 |
| cM capacity (veh/h) | 920 | | | 1130 | | | 161 | 182 | 671 | 153 | 182 | 459 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 387 | 685 | 45 | 7 |
| Volume Left | 16 | 9 | 23 | 1 |
| Volume Right | 8 | 7 | 21 | 5 |
| cSH | 920 | 1130 | 249 | 289 |
| Volume to Capacity | 0.02 | 0.01 | 0.18 | 0.02 |
| Queue Length 95th (ft) | 1 | 1 | 16 | 2 |
| Control Delay (s) | 0.6 | 0.2 | 22.6 | 17.7 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.6 | 0.2 | 22.6 | 17.7 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.3 | | |
| Intersection Capacity Utilization | 46.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✥ | | | ✥ | | | ✥ | | | ✥ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 35 | 495 | 8 | 18 | 451 | 20 | 9 | 14 | 33 | 7 | 12 | 10 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 36 | 510 | 8 | 19 | 465 | 21 | 9 | 14 | 34 | 7 | 12 | 10 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.85 | | | | | | 0.85 | 0.85 | | 0.85 | 0.85 | 0.85 |
| vC, conflicting volume | 486 | | | 519 | | | 1115 | 1109 | 514 | 1140 | 1103 | 475 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 396 | | | 519 | | | 1136 | 1128 | 514 | 1165 | 1121 | 384 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 98 | | | 93 | 91 | 94 | 94 | 93 | 98 |
| cM capacity (veh/h) | 1000 | | | 1058 | | | 137 | 166 | 564 | 124 | 168 | 569 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 555 | 504 | 58 | 30 |
| Volume Left | 36 | 19 | 9 | 7 |
| Volume Right | 8 | 21 | 34 | 10 |
| cSH | 1000 | 1058 | 269 | 199 |
| Volume to Capacity | 0.04 | 0.02 | 0.21 | 0.15 |
| Queue Length 95th (ft) | 3 | 1 | 20 | 13 |
| Control Delay (s) | 1.0 | 0.5 | 22.0 | 26.2 |
| Lane LOS | A | A | C | D |
| Approach Delay (s) | 1.0 | 0.5 | 22.0 | 26.2 |
| Approach LOS | | | C | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.5 | | |
| Intersection Capacity Utilization | 51.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 58 | 470 | 7 | 69 | 480 | 15 | 2 | 17 | 33 | 202 | 25 | 8 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 61 | 495 | 7 | 73 | 505 | 16 | 2 | 18 | 35 | 213 | 26 | 8 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.90 | | | | | | 0.90 | 0.90 | | 0.90 | 0.90 | 0.90 |
| vC, conflicting volume | 521 | | | 502 | | | 1040 | 1287 | 251 | 1072 | 1283 | 261 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 364 | | | 502 | | | 938 | 1211 | 251 | 973 | 1207 | 76 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 94 | | | 93 | | | 99 | 88 | 95 | 0 | 82 | 99 |
| cM capacity (veh/h) | 1090 | | | 1073 | | | 156 | 146 | 755 | 149 | 147 | 882 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 308 | 255 | 325 | 268 | 55 | 247 |
| Volume Left | 61 | 0 | 73 | 0 | 2 | 213 |
| Volume Right | 0 | 7 | 0 | 16 | 35 | 8 |
| cSH | 1090 | 1700 | 1073 | 1700 | 301 | 153 |
| Volume to Capacity | 0.06 | 0.15 | 0.07 | 0.16 | 0.18 | 1.62 |
| Queue Length 95th (ft) | 4 | 0 | 5 | 0 | 16 | 430 |
| Control Delay (s) | 2.1 | 0.0 | 2.5 | 0.0 | 19.6 | 357.5 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 1.2 | | 1.3 | | 19.6 | 357.5 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 62.3 | | |
| Intersection Capacity Utilization | 60.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3308 | | 1668 | 3195 | | | 4968 | | | 4995 | |
| Flt Permitted | 0.33 | 1.00 | | 0.31 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 574 | 3308 | | 544 | 3195 | | | 4968 | | | 4995 | |
| Volume (vph) | 97 | 574 | 34 | 170 | 418 | 163 | 0 | 2287 | 227 | 0 | 2547 | 146 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 102 | 604 | 36 | 179 | 440 | 172 | 0 | 2407 | 239 | 0 | 2681 | 154 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 14 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 102 | 639 | 0 | 179 | 611 | 0 | 0 | 2632 | 0 | 0 | 2828 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Effective Green, g (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Actuated g/C Ratio | 0.39 | 0.39 | | 0.39 | 0.39 | | | 0.52 | | | 0.52 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 223 | 1284 | | 211 | 1240 | | | 2572 | | | 2586 | |
| v/s Ratio Prot | | 0.19 | | | 0.19 | | | 0.53 | | | c0.57 | |
| v/s Ratio Perm | 0.18 | | | c0.33 | | | | | | | | |
| v/c Ratio | 0.46 | 0.50 | | 0.85 | 0.49 | | | 1.02 | | | 1.09 | |
| Uniform Delay, d1 | 19.3 | 19.7 | | 23.7 | 19.7 | | | 20.5 | | | 20.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.43 | |
| Incremental Delay, d2 | 6.6 | 1.4 | | 32.4 | 1.4 | | | 24.0 | | | 42.8 | |
| Delay (s) | 26.0 | 21.1 | | 56.1 | 21.1 | | | 44.5 | | | 51.7 | |
| Level of Service | C | C | | E | C | | | D | | | D | |
| Approach Delay (s) | | 21.8 | | | 29.0 | | | 44.5 | | | 51.7 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 43.2 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.99 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.8% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5023 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5023 | |
| Volume (vph) | 42 | 72 | 0 | 2796 | 2938 | 51 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 44 | 75 | 0 | 2912 | 3060 | 53 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 44 | 72 | 0 | 2912 | 3111 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 2.4 | 14.4 | | 74.6 | 62.6 | |
| Effective Green, g (s) | 2.4 | 14.4 | | 74.6 | 62.6 | |
| Actuated g/C Ratio | 0.03 | 0.17 | | 0.88 | 0.74 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 50 | 477 | | 4420 | 3699 | |
| v/s Ratio Prot | c0.02 | 0.03 | | c0.58 | c0.62 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.88 | 0.15 | | 0.66 | 0.84 | |
| Uniform Delay, d1 | 41.2 | 30.1 | | 1.5 | 7.8 | |
| Progression Factor | 1.00 | 1.00 | | 0.32 | 1.00 | |
| Incremental Delay, d2 | 83.7 | 0.1 | | 0.4 | 2.5 | |
| Delay (s) | 124.8 | 30.2 | | 0.9 | 10.2 | |
| Level of Service | F | C | | A | B | |
| Approach Delay (s) | 65.2 | | | 0.9 | 10.2 | |
| Approach LOS | E | | | A | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 6.9 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.80 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 67.9% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

**Year 2025**
**Alternative 4 (Battery Caulfield Alternative)**
**Park Presidio Boulevard Access Variant**
**PM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 354 | 11 | 28 | 265 | 4 | 4 | 1 | 28 | 8 | 3 | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 2 | 381 | 12 | 30 | 285 | 4 | 4 | 1 | 30 | 9 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 289 | | | 392 | | | 742 | 740 | 387 | 769 | 744 | 287 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 289 | | | 392 | | | 742 | 740 | 387 | 769 | 744 | 287 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 97 | | | 99 | 100 | 95 | 97 | 99 | 100 |
| cM capacity (veh/h) | 1284 | | | 1177 | | | 324 | 337 | 666 | 299 | 336 | 757 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 395 | 319 | 35 | 14 |
| Volume Left | 2 | 30 | 4 | 9 |
| Volume Right | 12 | 4 | 30 | 2 |
| cSH | 1284 | 1177 | 575 | 339 |
| Volume to Capacity | 0.00 | 0.03 | 0.06 | 0.04 |
| Queue Length 95th (ft) | 0 | 2 | 5 | 3 |
| Control Delay (s) | 0.1 | 1.0 | 11.7 | 16.1 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 1.0 | 11.7 | 16.1 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.3 | | |
| Intersection Capacity Utilization | 44.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 10 | 374 | 6 | 20 | 487 | 16 | 9 | 37 | 19 | 7 | 3 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 11 | 411 | 7 | 22 | 535 | 18 | 10 | 41 | 21 | 8 | 3 | 1 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 429 | 575 | 71 | 12 |
| Volume Left (vph) | 11 | 22 | 10 | 8 |
| Volume Right (vph) | 7 | 18 | 21 | 1 |
| Hadj (s) | 0.00 | -0.01 | -0.15 | 0.07 |
| Departure Headway (s) | 4.8 | 4.7 | 6.1 | 6.5 |
| Degree Utilization, x | 0.58 | 0.75 | 0.12 | 0.02 |
| Capacity (veh/h) | 719 | 759 | 533 | 481 |
| Control Delay (s) | 14.2 | 20.0 | 9.9 | 9.6 |
| Approach Delay (s) | 14.2 | 20.0 | 9.9 | 9.6 |
| Approach LOS | B | C | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 16.9 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 46.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 28 | 368 | 4 | 230 | 520 | 10 | 2 | 29 | 55 | 6 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 30 | 396 | 4 | 247 | 559 | 11 | 2 | 31 | 59 | 6 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.84 | | | | | | 0.84 | 0.84 | | 0.84 | 0.84 | 0.84 |
| vC, conflicting volume | 570 | | | 400 | | | 1519 | 1523 | 398 | 1592 | 1519 | 565 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 487 | | | 400 | | | 1618 | 1623 | 398 | 1706 | 1619 | 481 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 79 | | | 96 | 53 | 91 | 78 | 98 | 100 |
| cM capacity (veh/h) | 911 | | | 1170 | | | 57 | 66 | 656 | 29 | 67 | 494 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 430 | 817 | 92 | 9 |
| Volume Left | 30 | 247 | 2 | 6 |
| Volume Right | 4 | 11 | 59 | 1 |
| cSH | 911 | 1170 | 155 | 36 |
| Volume to Capacity | 0.03 | 0.21 | 0.60 | 0.24 |
| Queue Length 95th (ft) | 3 | 20 | 79 | 19 |
| Control Delay (s) | 1.0 | 4.7 | 58.0 | 133.9 |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 1.0 | 4.7 | 58.0 | 133.9 |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 8.0 | | |
| Intersection Capacity Utilization | 76.8% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5015 | | | 4943 | |
| Flt Permitted | 0.37 | 1.00 | 1.00 | 0.47 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 665 | 1756 | 1492 | 828 | 1756 | 1492 | | 5015 | | | 4943 | |
| Volume (vph) | 143 | 257 | 29 | 81 | 335 | 187 | 0 | 2466 | 80 | 0 | 2578 | 425 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 147 | 265 | 30 | 84 | 345 | 193 | 0 | 2542 | 82 | 0 | 2658 | 438 |
| RTOR Reduction (vph) | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 27 | 0 |
| Lane Group Flow (vph) | 147 | 265 | 29 | 84 | 345 | 192 | 0 | 2620 | 0 | 0 | 3069 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 1% | 1% | 3% | 1% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 219 | 578 | 491 | 273 | 578 | 491 | | 2891 | | | 2849 | |
| v/s Ratio Prot | | 0.15 | | | 0.20 | | | 0.52 | | | c0.62 | |
| v/s Ratio Perm | c0.22 | | 0.02 | 0.10 | | 0.13 | | | | | | |
| v/c Ratio | 0.67 | 0.46 | 0.06 | 0.31 | 0.60 | 0.39 | | 0.91 | | | 1.08 | |
| Uniform Delay, d1 | 24.5 | 22.5 | 19.5 | 21.3 | 23.8 | 21.9 | | 16.0 | | | 18.0 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.21 | | | 0.59 | |
| Incremental Delay, d2 | 15.2 | 2.6 | 0.2 | 2.9 | 4.5 | 2.3 | | 1.7 | | | 39.4 | |
| Delay (s) | 39.8 | 25.1 | 19.7 | 24.2 | 28.3 | 24.3 | | 21.0 | | | 50.0 | |
| Level of Service | D | C | B | C | C | C | | C | | | D | |
| Approach Delay (s) | | 29.6 | | | 26.5 | | | 21.0 | | | 50.0 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 35.3 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.93 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 94.8% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 14 | 316 | 7 | 8 | 579 | 6 | 20 | 1 | 18 | 1 | 1 | 4 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Hourly flow rate (vph) | 16 | 363 | 8 | 9 | 666 | 7 | 23 | 1 | 21 | 1 | 1 | 5 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 68 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.88 | | | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| vC, conflicting volume | 672 | | | 371 | | | 1092 | 1090 | 367 | 1108 | 1091 | 669 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 672 | | | 287 | | | 1104 | 1102 | 283 | 1122 | 1103 | 669 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 86 | 99 | 97 | 99 | 99 | 99 |
| cM capacity (veh/h) | 923 | | | 1130 | | | 162 | 183 | 671 | 154 | 183 | 461 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 387 | 682 | 45 | 7 |
| Volume Left | 16 | 9 | 23 | 1 |
| Volume Right | 8 | 7 | 21 | 5 |
| cSH | 923 | 1130 | 250 | 291 |
| Volume to Capacity | 0.02 | 0.01 | 0.18 | 0.02 |
| Queue Length 95th (ft) | 1 | 1 | 16 | 2 |
| Control Delay (s) | 0.6 | 0.2 | 22.5 | 17.7 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.6 | 0.2 | 22.5 | 17.7 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.3 | | |
| Intersection Capacity Utilization | 45.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 32 | 492 | 8 | 18 | 451 | 20 | 9 | 13 | 33 | 7 | 12 | 10 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 33 | 507 | 8 | 19 | 465 | 21 | 9 | 13 | 34 | 7 | 12 | 10 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.85 | | | | | | 0.85 | 0.85 | | 0.85 | 0.85 | 0.85 |
| vC, conflicting volume | 486 | | | 515 | | | 1106 | 1100 | 511 | 1130 | 1094 | 475 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 396 | | | 515 | | | 1125 | 1117 | 511 | 1153 | 1110 | 384 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 98 | | | 93 | 92 | 94 | 94 | 93 | 98 |
| cM capacity (veh/h) | 1000 | | | 1061 | | | 140 | 169 | 566 | 127 | 171 | 569 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 548 | 504 | 57 | 30 |
| Volume Left | 33 | 19 | 9 | 7 |
| Volume Right | 8 | 21 | 34 | 10 |
| cSH | 1000 | 1061 | 276 | 203 |
| Volume to Capacity | 0.03 | 0.02 | 0.21 | 0.15 |
| Queue Length 95th (ft) | 3 | 1 | 19 | 13 |
| Control Delay (s) | 0.9 | 0.5 | 21.4 | 25.8 |
| Lane LOS | A | A | C | D |
| Approach Delay (s) | 0.9 | 0.5 | 21.4 | 25.8 |
| Approach LOS | | | C | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.4 | | |
| Intersection Capacity Utilization | 49.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

HCM Unsignalized Intersection Capacity Analysis
106: California Street & 14th Avenue Year 2025 Variant PM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 55 | 470 | 7 | 69 | 480 | 15 | 2 | 16 | 33 | 202 | 25 | 8 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 58 | 495 | 7 | 73 | 505 | 16 | 2 | 17 | 35 | 213 | 26 | 8 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.90 | | | | | | 0.90 | 0.90 | | 0.90 | 0.90 | 0.90 |
| vC, conflicting volume | 521 | | | 502 | | | 1034 | 1281 | 251 | 1065 | 1276 | 261 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 364 | | | 502 | | | 931 | 1204 | 251 | 966 | 1200 | 76 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 95 | | | 93 | | | 99 | 89 | 95 | 0 | 82 | 99 |
| cM capacity (veh/h) | 1090 | | | 1073 | | | 159 | 148 | 755 | 152 | 149 | 882 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 305 | 255 | 325 | 268 | 54 | 247 |
| Volume Left | 58 | 0 | 73 | 0 | 2 | 213 |
| Volume Right | 0 | 7 | 0 | 16 | 35 | 8 |
| cSH | 1090 | 1700 | 1073 | 1700 | 310 | 156 |
| Volume to Capacity | 0.05 | 0.15 | 0.07 | 0.16 | 0.17 | 1.58 |
| Queue Length 95th (ft) | 4 | 0 | 5 | 0 | 15 | 422 |
| Control Delay (s) | 2.0 | 0.0 | 2.5 | 0.0 | 19.0 | 342.2 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 1.1 | | 1.3 | | 19.0 | 342.2 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 59.9 | | |
| Intersection Capacity Utilization | 60.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



HCM Signalized Intersection Capacity Analysis
107: California Street & Park Presidio Boulevard Year 2025 Variant PM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3308 | | 1668 | 3195 | | | 4968 | | | 4995 | |
| Flt Permitted | 0.33 | 1.00 | | 0.31 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 574 | 3308 | | 544 | 3195 | | | 4968 | | | 4995 | |
| Volume (vph) | 97 | 574 | 34 | 170 | 418 | 163 | 0 | 2287 | 227 | 0 | 2542 | 146 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 102 | 604 | 36 | 179 | 440 | 172 | 0 | 2407 | 239 | 0 | 2676 | 154 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 14 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 102 | 639 | 0 | 179 | 611 | 0 | 0 | 2632 | 0 | 0 | 2823 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Effective Green, g (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Actuated g/C Ratio | 0.39 | 0.39 | | 0.39 | 0.39 | | | 0.52 | | | 0.52 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 223 | 1284 | | 211 | 1240 | | | 2572 | | | 2586 | |
| v/s Ratio Prot | | 0.19 | | | 0.19 | | | 0.53 | | | c0.57 | |
| v/s Ratio Perm | 0.18 | | | c0.33 | | | | | | | | |
| v/c Ratio | 0.46 | 0.50 | | 0.85 | 0.49 | | | 1.02 | | | 1.09 | |
| Uniform Delay, d1 | 19.3 | 19.7 | | 23.7 | 19.7 | | | 20.5 | | | 20.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.43 | |
| Incremental Delay, d2 | 6.6 | 1.4 | | 32.4 | 1.4 | | | 24.0 | | | 41.9 | |
| Delay (s) | 26.0 | 21.1 | | 56.1 | 21.1 | | | 44.5 | | | 50.8 | |
| Level of Service | C | C | | E | C | | | D | | | D | |
| Approach Delay (s) | | 21.8 | | | 29.0 | | | 44.5 | | | 50.8 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 42.9 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.99 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 88.7% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5026 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5026 | |
| Volume (vph) | 37 | 65 | 0 | 2796 | 2938 | 40 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 39 | 68 | 0 | 2912 | 3060 | 42 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 39 | 65 | 0 | 2912 | 3101 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 1.8 | 13.8 | | 75.2 | 63.2 | |
| Effective Green, g (s) | 1.8 | 13.8 | | 75.2 | 63.2 | |
| Actuated g/C Ratio | 0.02 | 0.16 | | 0.88 | 0.74 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 38 | 457 | | 4455 | 3737 | |
| v/s Ratio Prot | c0.02 | 0.02 | | c0.58 | c0.62 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 1.03 | 0.14 | | 0.65 | 0.83 | |
| Uniform Delay, d1 | 41.6 | 30.5 | | 1.3 | 7.3 | |
| Progression Factor | 1.00 | 1.00 | | 0.30 | 1.00 | |
| Incremental Delay, d2 | 153.9 | 0.1 | | 0.4 | 2.3 | |
| Delay (s) | 195.5 | 30.7 | | 0.8 | 9.6 | |
| Level of Service | F | C | | A | A | |
| Approach Delay (s) | 90.8 | | | 0.8 | 9.6 | |
| Approach LOS | F | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 6.8 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.79 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 67.7% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

# APPENDIX B

## PHSH Only

| AM Peak Hour | PHSH | No Act. | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 |
|---|---|---|---|---|---|---|
| Total Transit Trips | 92 | 41 | 114 | 58 | 48 | 34 |
| Total External Transit Trips | 76 | 37 | 96 | 53 | 44 | 31 |
| Total Internal Transit Trips | 16 | 4 | 18 | 5 | 3 | 4 |
| | | | | | | |
| Total Muni Ridership | 71 | 35 | 90 | 50 | 42 | 29 |
| Muni Ridership on Lines Near PHSH (1, 1AX, 1BX, 28, 28L) | 71 | 35 | 90 | 50 | 42 | 29 |
| Other Muni Ridership | 0 | 0 | 0 | 0 | 0 | 0 |
| GGT Route 10 Bus Ridership | 8 | 4 | 10 | 5 | 4 | 3 |
| PresidiGo Ridership | 8 | 1 | 8 | 0 | -1 | 1 |
| | | | | | | |
| ***Total Transit Ridership*** | ***87*** | ***39*** | ***108*** | ***55*** | ***45*** | ***33*** |

| PM Peak Hour | PHSH | No Act. | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 |
|---|---|---|---|---|---|---|
| Total Transit Trips | 206 | 45 | 212 | 64 | 57 | 42 |
| Total External Transit Trips | 173 | 41 | 180 | 59 | 52 | 37 |
| Total Internal Transit Trips | 33 | 5 | 32 | 5 | 4 | 5 |
| | | | | | | |
| Total Muni Ridership | 163 | 38 | 169 | 55 | 49 | 35 |
| Muni Ridership on Lines Near PHSH (1, 1AX, 1BX, 28, 28L) | 163 | 38 | 169 | 55 | 49 | 35 |
| Other Muni Ridership | 0 | 0 | 0 | 0 | 0 | 0 |
| GGT Route 10 Bus Ridership | 17 | 4 | 18 | 6 | 5 | 4 |
| PresidiGo Ridership | 15 | 1 | 14 | -1 | -1 | 1 |
| | | | | | | |
| ***Total Transit Ridership*** | ***195*** | ***43*** | ***202*** | ***60*** | ***53*** | ***40*** |

## Presidio-wide Ridership (Area B)

| AM Peak Hour | PHSH | No Act. | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 |
|---|---|---|---|---|---|---|
| Muni | 1,117 | 1,080 | 1,136 | 1,096 | 1,087 | 1,074 |
| AC Transit | 21 | 20 | 21 | 20 | 20 | 20 |
| BART | 68 | 66 | 70 | 67 | 67 | 66 |
| GGT Buses | 119 | 115 | 121 | 117 | 116 | 114 |
| GGT Ferries | 0 | 0 | 0 | 0 | 0 | 0 |
| Caltrain | 30 | 29 | 30 | 29 | 29 | 29 |
| *Subtotal* | *1,355* | *1,310* | *1,378* | *1,329* | *1,319* | *1,303* |
| PresidiGo | 242 | 231 | 244 | 231 | 230 | 230 |
| **TOTAL** | **1,597** | **1,541** | **1,622** | **1,561** | **1,549** | **1,533** |

| PM Peak Hour | PHSH | No Act. | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 |
|---|---|---|---|---|---|---|
| Muni | 1,621 | 1,496 | 1,627 | 1,513 | 1,507 | 1,493 |
| AC Transit | 30 | 28 | 30 | 28 | 28 | 28 |
| BART | 99 | 92 | 100 | 93 | 92 | 91 |
| GGT Buses | 173 | 159 | 173 | 161 | 161 | 159 |
| GGT Ferries | 0 | 0 | 0 | 0 | 0 | 0 |
| Caltrain | 43 | 40 | 43 | 40 | 40 | 40 |
| *Subtotal* | *1,966* | *1,815* | *1,974* | *1,836* | *1,829* | *1,811* |
| PresidiGo | 369 | 341 | 369 | 342 | 341 | 342 |
| **TOTAL** | **2,336** | **2,156** | **2,343** | **2,177** | **2,169** | **2,153** |





## 2025 MUNI PASSENGER LOADS

### AM PEAK HOUR

| | | | RIDERSHIP | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MLP | 2025 | TRIPS (All Planning Areas) | | | | | | LOAD | | | | | | CAPACITY | CAPACITY UTILIZATION | | | | | |
| LINE | DIRECTION | LOCATION | Baseline | PTMP | NO ACT. | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | PTMP | NO ACT. | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | | PTMP | NO ACT. | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 |
| 1 - CALIFORNIA | to Howard/Main | Clay/Powell | 1,124 | 6 | 5 | 9 | 7 | 8 | 6 | 1,131 | 1,129 | 1,133 | 1,132 | 1,132 | 1,130 | 866 | 131% | 130% | 131% | 131% | 131% | 130% |
| | to Geary/33rd | Sacramento/Polk | 463 | 29 | 14 | 33 | 15 | 10 | 9 | 492 | 477 | 496 | 478 | 473 | 471 | 819 | 60% | 58% | 61% | 58% | 58% | 58% |
| 1AX - CALIFORNIA 'A' EXPRESS | to Davis/Pine | California/Park Presidio | 409 | 8 | 5 | 10 | 9 | 9 | 7 | 417 | 414 | 419 | 418 | 418 | 416 | 353 | 118% | 117% | 119% | 118% | 118% | 118% |
| | to Geary/33rd | n.a. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% | 0% | 0% |
| 1BX - CALIFORNIA 'B' EXPRESS | to Davis/Pine | California/Fillmore | 800 | 8 | 5 | 10 | 9 | 9 | 7 | 807 | 805 | 810 | 809 | 809 | 806 | 707 | 114% | 114% | 115% | 114% | 114% | 114% |
| | to Park Presidio/California | n.a. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% | 0% | 0% |
| 28 - 19TH AVENUE | to Fort Mason | 19th Ave/Lincoln | 322 | 40 | 39 | 42 | 41 | 41 | 40 | 363 | 361 | 365 | 364 | 364 | 362 | 420 | 86% | 86% | 87% | 87% | 87% | 86% |
| | to Daly City BART | 19th Ave/Sloat | 168 | 104 | 98 | 106 | 98 | 96 | 95 | 272 | 266 | 274 | 266 | 264 | 264 | 378 | 72% | 70% | 72% | 70% | 70% | 70% |
| 28L - 19TH AVENUE LIMITED | to Park Presidio/California | 19th Ave/Lincoln | 202 | 15 | 14 | 17 | 16 | 17 | 15 | 218 | 216 | 220 | 219 | 219 | 217 | 236 | 92% | 91% | 93% | 93% | 93% | 92% |
| | to Daly City BART | 19th Ave/Sloat | 145 | 41 | 35 | 43 | 35 | 33 | 32 | 187 | 180 | 189 | 180 | 178 | 178 | 331 | 56% | 54% | 57% | 55% | 54% | 54% |

### PM PEAK HOUR

| | | | RIDERSHIP | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MLP | 2025 | TRIPS (All Planning Areas) | | | | | | LOAD | | | | | | CAPACITY | CAPACITY UTILIZATION | | | | | |
| LINE | DIRECTION | LOCATION | Baseline | PTMP | NO ACT. | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | PTMP | NO ACT. | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | | PTMP | NO ACT. | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 |
| 1 - CALIFORNIA | to Howard/Main | Clay/Polk | 738 | 46 | 16 | 48 | 18 | 14 | 12 | 783 | 754 | 786 | 755 | 752 | 749 | 1,276 | 61% | 59% | 62% | 59% | 59% | 59% |
| | to Geary/33rd | Sacramento/Powell | 1,270 | 19 | 6 | 19 | 8 | 8 | 6 | 1,289 | 1,276 | 1,289 | 1,278 | 1,278 | 1,277 | 1,173 | 110% | 109% | 110% | 109% | 109% | 109% |
| 1AX - CALIFORNIA 'A' EXPRESS | to Davis/Pine | n.a. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% | 0% | 0% |
| | to Geary/33rd | California/Park Presidio | 260 | 23 | 6 | 24 | 10 | 10 | 8 | 283 | 267 | 284 | 270 | 270 | 268 | 294 | 96% | 91% | 96% | 92% | 92% | 91% |
| 1BX - CALIFORNIA 'B' EXPRESS | to Davis/Pine | n.a. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% | 0% | 0% |
| | to Park Presidio/California | California/Fillmore | 337 | 23 | 6 | 24 | 10 | 10 | 8 | 360 | 343 | 360 | 346 | 346 | 344 | 334 | 108% | 103% | 108% | 104% | 104% | 103% |
| 28 - 19TH AVENUE | to Fort Mason | 19th Ave/Sloat | 170 | 169 | 143 | 171 | 145 | 142 | 139 | 340 | 313 | 341 | 315 | 312 | 310 | 268 | 127% | 117% | 128% | 118% | 117% | 116% |
| | to Daly City BART | 19th Ave/Lincoln | 315 | 140 | 117 | 140 | 122 | 122 | 119 | 455 | 432 | 455 | 437 | 437 | 434 | 305 | 149% | 142% | 149% | 143% | 143% | 142% |
| 28L - 19TH AVENUE LIMITED | to Park Presidio/California | n.a. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% | 0% | 0% |
| | to Daly City BART | n.a. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% | 0% | 0% |

**GOLDEN GATE TRANSIT BUSES 2025 PASSENGER LOADS**

| Route 10 | AM Peak Period - Northbound | | | | | AM Peak Period - Southbound | | | | | PM Peak Period - Northbound | | | | | PM Peak Period - Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Veh. Capacity (pax) | Number of Buses during Peak Period (6-10 AM) | No. of Passengers during Peak Hour (*) | Peak Hour Capacity | Peak Hour Load Factor | Veh. Capacity (pax) | Number of Buses during Peak Period (6-10 AM) | No. of Passengers during Peak Hour (*) | Peak Hour Capacity | Peak Hour Load Factor | Veh. Capacity (pax) | Number of Buses during Peak Period (3-7 PM) | No. of Passengers during Peak Hour (*) | Peak Hour Capacity | Peak Hour Load Factor | Veh. Capacity (pax) | Number of Buses during Peak Period (3-7 PM) | No. of Passengers during Peak Hour (*) | Peak Hour Capacity | Peak Hour Load Factor |
| **EXISTING (September 2005 GGT Data)** | | | | | | | | | | | | | | | | | | | | |
| | 39 | 6 | 25 | 59 | 43% | 39 | 4 | 24 | 39 | 62% | 39 | 5 | 19 | 49 | 39% | 39 | 6 | 29 | 59 | 50% |
| **YEAR 2020 BASELINE** | | | | | | | | | | | | | | | | | | | | |
| | 39 | 6 | 33 | 59 | 56% | 39 | 4 | 28 | 156 | 18% | 39 | 5 | 22 | 195 | 11% | 39 | 6 | 38 | 234 | 16% |
| **PTMP - PHSH only** | | | | | | | | | | | | | | | | | | | | |
| Trips | | | 2 | | | | | 5 | | | | | 8 | | | | | 9 | | |
| Load | | | 35 | 59 | 61% | | | 33 | 156 | 21% | | | 30 | 195 | 16% | | | 47 | 234 | 20% |
| **NO ACTION ALTERNATIVE** | | | | | | | | | | | | | | | | | | | | |
| Trips | | | 2 | | | | | 2 | | | | | 2 | | | | | 2 | | |
| Load | | | 35 | 59 | 59% | | | 30 | 156 | 19% | | | 24 | 195 | 12% | | | 40 | 234 | 17% |
| **ALTERNATIVE 1 - PHSH only** | | | | | | | | | | | | | | | | | | | | |
| Trips | | | 4 | | | | | 6 | | | | | 9 | | | | | 9 | | |
| Load | | | 37 | 59 | 63% | | | 34 | 156 | 22% | | | 31 | 195 | 16% | | | 47 | 234 | 20% |
| **ALTERNATIVE 2 - PHSH only** | | | | | | | | | | | | | | | | | | | | |
| Trips | | | 3 | | | | | 2 | | | | | 3 | | | | | 3 | | |
| Load | | | 36 | 59 | 62% | | | 30 | 156 | 19% | | | 25 | 195 | 13% | | | 41 | 234 | 18% |
| **ALTERNATIVE 3 - PHSH only** | | | | | | | | | | | | | | | | | | | | |
| Trips | | | 3 | | | | | 1 | | | | | 2 | | | | | 3 | | |
| Load | | | 36 | 59 | 62% | | | 29 | 156 | 19% | | | 24 | 195 | 12% | | | 41 | 234 | 18% |
| **ALTERNATIVE 4 - PHSH only** | | | | | | | | | | | | | | | | | | | | |
| Trips | | | 2 | | | | | 1 | | | | | 1 | | | | | 2 | | |
| Load | | | 35 | 59 | 60% | | | 29 | 156 | 19% | | | 23 | 195 | 12% | | | 40 | 234 | 17% |

(*) Includes a 25 increase in ridership to account fot higher demand during the highest peak hour





| SHUTTLE SERVICE RIDERSHIP | PTMP | | | NO ACTION ALT | | | ALT 1 | | | ALT 2 | | | ALT 3 | | | ALT 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL | IN | OUT | TOTAL |
| AM PEAK HOUR | | | | | | | | | | | | | | | | | | |
| All Transit Trips | **1,015** | **417** | 1,432 | **980** | **401** | 1,382 | **1,024** | **430** | 1,454 | **982** | **417** | 1,399 | **970** | **418** | 1,388 | **967** | **408** | 1,375 |
| External Transit Trips | 869 | 321 | 1,190 | 839 | 311 | 1,151 | 877 | 333 | 1,210 | 841 | 327 | 1,168 | 831 | 327 | 1,159 | 828 | 317 | 1,145 |
| Shuttle Trips | 146 | 96 | 242 | 141 | 90 | 231 | 147 | 97 | 244 | 141 | 90 | 231 | 139 | 90 | 230 | 139 | 91 | 230 |
| PM PEAK HOUR | | | | | | | | | | | | | | | | | | |
| All Transit Trips | **941** | **1,156** | 2,097 | **851** | **1,085** | 1,936 | **943** | **1,160** | 2,103 | **866** | **1,089** | 1,955 | **866** | **1,081** | 1,947 | **857** | **1,076** | 1,933 |
| External Transit Trips | 756 | 972 | 1,727 | 682 | 912 | 1,595 | 758 | 976 | 1,734 | 697 | 915 | 1,613 | 698 | 909 | 1,607 | 688 | 904 | 1,591 |
| Shuttle Trips | 185 | 184 | 369 | 168 | 173 | 341 | 185 | 185 | 369 | 169 | 173 | 342 | 169 | 172 | 341 | 169 | 173 | 342 |

# APPENDIX C

*Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 1 of 4)*

DIST ____ CO ____ RTE ____ KPM ____

CALC ____________ DATE ____________
CHK ____________ DATE ____________

Major St: Lake St.
Minor St: 15th Avenue.

Critical Approach Speed ____________ km/h
Critical Approach Speed ____________ km/h

Critical speed of major street traffic > 64 km/h (40 mph) ☐ or
In built up area of isolated community of < 10,000 population ☐ } RURAL (R)
☒ URBAN (U)

**WARRANT 3 - Peak Hour** PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒
(All parts 1, 2, and 3 below must be satisfied)

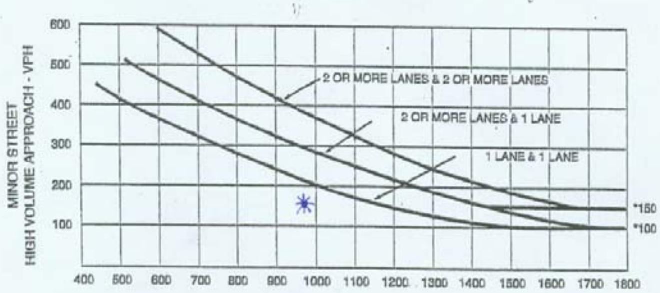
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceedds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND Yes ☐ No ☒
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND Yes ☒ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. Yes ☒ No ☐

PART B SATISFIED YES ☐ NO ☒

| APPROACH LANES | One | 2 or More | / | / | / | Hour |
|---|---|---|---|---|---|---|
| Both Approaches - Major Street | 983 | | | | | |
| Highest Approaches - Minor Street | 160 | | | | | |

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume vehicle minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3 or 4C-4.

***Figure 4C-3. Warrant 3, Peak Hour***




MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Wilbur Smith Associates

ENGINEERS
PLANNERS
ECONOMISTS

MEMO

Technical Memorandum No. 5, Sensitivity Analysis for Trip Generation and Assignment, was written in response to comments on the Environmental Assessment and is available in the Presidio Trust library.

Wilbur Smith Associates

# MEMO

**SAN FRANCISCO OFFICE**
**April 19, 2006** **Project Number:** 395900

**To:** Amy Marshall, The Presidio Trust

**From:** José I. Farrán, Project Manager
Nate Chanchareon, Senior Transportation Engineer

**Subject:** The Presidio of San Francisco
Public Health Service Hospital Site Supplemental Environmental Impact Statement
Draft Technical Memorandum No. 4 – Existing (Year 2005) + Project Transportation Impact Analysis of Alternatives

## 1. INTRODUCTION

This Technical Memorandum estimates and describes potential traffic and transit impacts and parameters associated with four land use alternatives for rehabilitation and reuse of the Presidio of San Francisco's Public Health Service Hospital (PHSH) development site as they compare against existing (Year 2005) conditions with respect to:

- Traffic levels in and adjacent to the Presidio,
- Traffic at adjacent intersections,
- On/Off-site pedestrian and bicycle facilities,
- Public transportation, and
- Parking.

## 2. TRAFFIC OPERATIONS

### 2.1 Existing Roadway Network

Currently, the 15th Avenue Gate is open to vehicular and pedestrian traffic while the 14th Avenue Gate is open only to pedestrians. Although this configuration functions adequately with the existing level of traffic, future occupancy of the PHSH and other Presidio buildings is expected to warrant improved access and circulation. The NPS 1994 General Management Plan Amendment for the Presidio recognized such access needs and recommended reopening the 14th Avenue Gate to vehicular traffic and operating the 14th Avenue and 15th Avenue Gates as a one-way couplet with the 14th Avenue Gate accommodating northbound traffic entering the Presidio and the 15th Avenue Gate accommodating southbound traffic exiting the Presidio. This one-way couplet was assumed in the analysis of transportation-related impacts of land use alternatives in



the *Presidio Trust Management Plan – Background Transportation Report for the Final EIS*, prepared by Wilbur Smith Associates (WSA) in May 2002 and has also been assumed for the assessment of traffic impacts related to the PHSH Final EIS Alternatives 1, 2, 3, and 4.

In addition, Alternatives 1, 2, 3, and 4 have also been analyzed assuming direct vehicular access to Park Presidio Boulevard via a new intersection north of Lake Street, as described in the *Public Health Service Hospital Transportation Study: Additional Alternatives Analysis* (WSA, December 2003). This access variant would allow traffic leaving the PHSH site to turn left or right on Highway 1, and allow southbound traffic on Highway 1 to enter the PHSH site directly from Highway 1. Both the 14th and 15th Avenue Gates would be open to inbound (northbound) traffic only.

### 2.2 Intersection Analysis

Intersection operating conditions have been evaluated for weekday AM and PM peak period conditions under existing conditions at eight key intersections in the vicinity of the PHSH site. These are the intersections that would most likely experience the greatest change in traffic volumes due to changes in land uses at the PHSH site. Further basis for identifying these eight intersections for analysis is set forth in Technical Memorandum #1. The eight study intersections are:

- Lake Street/17th Avenue
- Lake Street/15th Avenue
- Lake Street/14th Avenue
- Lake Street/Park Presidio Boulevard
- Lake Street/Funston Avenue
- California Street/15th Avenue
- California Street/14th Avenue
- California Street/Park Presidio Boulevard

The AM and PM peak hour intersection operations analysis was conducted according to the methodology described in the 2000 Highway Capacity Manual (HCM 2000) (Transportation Research Board, 2000). The HCM methodology calculates the average delay experienced by a vehicle traveling through the intersection, and assigns a corresponding level of service (LOS). The levels of service range from LOS A, indicating volumes well below capacity with vehicles experiencing little or no delay, to LOS F, indicating volumes near capacity with vehicles experiencing extremely high delays[1]. Appendix A contains the HCM 2000 LOS definitions.

[1] The City and County of San Francisco generally considers intersection operation at LOS D or better to be acceptable, and intersection operation at LOS E or F to be unacceptable.

For signalized intersections, the HCM 2000 methodology determines the average delay per vehicle for each lane group based on the particular movement, and traffic volume and capacity associated with that lane group. The average delay per vehicle is then aggregated for each approach and for the intersection as a whole. A combined weighted average delay and LOS is then presented for the intersection as a whole. For unsignalized intersections, average delay and LOS operating conditions are calculated by approach (e.g., northbound) and movement (e.g., northbound left-turn). For two-way stop-controlled intersections, delay and LOS are calculated for each of the stop-controlled approaches and operating conditions are reported for the worst approach. For all-way stop-controlled intersections, average delay per vehicle is averaged across all approaches, and operating conditions are reported for the average delay and LOS for the intersection as a whole.

### 2.2.1 One-Way Couplet at 14th and 15th Avenue Gates

Tables 1 and 2 present the results of the intersection LOS analysis for the Existing (Year 2005) + Project weekday AM and PM peak hour conditions assuming that the 14th Avenue and 15th Avenue Gates operate as a one-way couplet with the 14th Avenue Gate accommodating northbound traffic entering the Presidio and the 15th Avenue Gate accommodating southbound traffic exiting the Presidio (Appendix A contains the detailed calculations of the intersection LOS analysis).

**Alternative 1: PTMP Alternative** – As Table 1 indicates, under Alternative 1 in the AM peak hour, all but two intersections would operate at LOS D or better. The minor approaches to the two-way stop-controlled intersections of Lake Street/14th Avenue and California/14th Avenue would operate at LOS F and E, respectively. The levels of service at the rest of the study intersections would remain the same as under existing conditions.

As shown in Table 2, in the PM peak hour, the minor approaches to the two-way stop-controlled intersections of Lake Street/14th Avenue and California Street/14th Avenue would operate at LOS F with Alternative 1 compared to LOS D and E under existing conditions. While the low-volume traffic on one or both of the minor approaches to these intersections would incur delay, the majority of the traffic on the uncontrolled approaches (California Street or Lake Street) would not have to stop; therefore, would not incur any delay. Of the remaining six study intersections, four intersections would continue to operate at LOS C, and two intersections would fall from LOS B under existing conditions to LOS C with Alternative 1.



**Table 1**
**Intersection Levels of Service – Existing-plus-Project Conditions Weekday AM Peak Hour**

| Intersection | Traffic Control Device | Existing Conditions | | Alt. 1 | | Alt. 2 | | Alt. 3 | | Alt. 4 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS |
| Lake St/ 17th Ave[2] | 2-Way Stop | 17.5 (SB) | C | 18.3 (SB) | C | 17.9 (SB) | C | 17.8 (SB) | C | 17.7 (SB) | C |
| Lake St/ 15th Ave | 4-Way Stop | 17.2 | C | 22.3 | C | 19.2 | C | 19.1 | C | 18.0 | C |
| Lake St/ 14th Ave [2] | 2-Way Stop | 21.4 (SB) | C | **>50** (NB) | **F** | **48.6** (NB) | **E** | **41.4** (NB) | **E** | **37.3** (NB) | **E** |
| Lake St/ Park Presidio Blvd. | Traffic Signal | 16.4 | B | 17.3 | B | 16.8 | B | 16.8 | B | 16.7 | B |
| Lake St/Funston Ave[2] | 2-Way Stop | 16.9 (SB) | C | 18.0 (SB) | C | 17.5 (SB) | C | 17.4 (SB) | C | 17.3 (SB) | C |
| California St/ 15th Ave [2] | 2-Way Stop | 20.8 (SB) | C | 18.0 (SB) | C | 18.2 (SB) | C | 18.0 (SB) | C | 18.4 (SB) | C |
| California St/ 14th Ave [2] | 2-Way Stop | 29.9 (SB) | D | **49.4** (SB) | **E** | **38.5** (SB) | **E** | **36.6** (SB) | **E** | **36.0** (SB) | **E** |
| California St/ Park Presidio Blvd. | Traffic Signal | 16.2 | B | 16.3 | B | 16.3 | B | 16.2 | B | 16.2 | B |

Source: Wilbur Smith Associates – February 2006

Notes:
[1] Delay presented in seconds per vehicle based on the 2000 HCM methodology.
[2] LOS and delay shown for worst minor stop-controlled approach. Major approach is uncontrolled and without delay.

**Table 2**
**Intersection Levels of Service – Existing-plus-Project Conditions Weekday PM Peak Hour**

| Intersection | Traffic Control Device | Existing Conditions | | Alt. 1 | | Alt. 2 | | Alt. 3 | | Alt. 4 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS |
| Lake St/ 17th Ave[2] | 2-Way Stop | 16.7 (SB) | C | 17.9 (SB) | C | 17.1 (SB) | C | 17.1 (SB) | C | 17.0 (SB) | C |
| Lake St/ 15th Ave | 4-Way Stop | 13.1 | B | 18.1 | C | 13.7 | B | 13.5 | B | 13.2 | B |
| Lake St/ 14th Ave [2] | 2-Way Stop | 30.5 (SB) | D | **>50** (SB) | **F** | **>50** (SB) | **F** | **>50** (SB) | **F** | **46.2** (SB) | **E** |
| Lake St/ Park Presidio Blvd. | Traffic Signal | 18.4 | B | 22.0 | C | 19.2 | B | 19.2 | B | 18.9 | B |
| Lake St/Funston Ave[2] | 2-Way Stop | 15.9 (NB) | C | 17.7 (NB) | C | 16.6 (NB) | C | 16.6 (NB) | C | 16.5 (NB) | C |
| California St/ 15th Ave [2] | 2-Way Stop | 20.2 (SB) | C | 20.7 (SB) | C | 19.2 (SB) | C | 19.4 (SB) | C | 19.4 (SB) | C |
| California St/ 14th Ave [2] | 2-Way Stop | 38.9 (SB) | E | **>50** (SB) | **F** | **>50** (SB) | **F** | **>50** (SB) | **F** | **>50** (SB) | **F** |
| California St/ Park Presidio Blvd. | Traffic Signal | 22.2 | C | 22.3 | C | 22.3 | C | 22.3 | C | 22.3 | C |

Source: Wilbur Smith Associates – February 2006

Notes:
[1] Delay presented in seconds per vehicle based on the 2000 HCM methodology.
[2] LOS and delay shown for worst minor stop-controlled approach. Major approach is uncontrolled and without delay.



*Comparison of Alternative 1 to Existing Conditions*
Compared to the existing conditions, Alternative 1 would result in reduced delay at the following intersection during the AM peak hour:

- California Street/15th Avenue (approximate reduction of 13%)

During the AM peak hour, Alternative 1 would result in increased delay at the following intersections compared to the existing conditions:

- Lake Street/17th Avenue (approximate increase of 5%)
- Lake Street/15th Avenue (approximate increase of 30%)
- Lake Street/14th Avenue (approximate increase of more than 100%)
- Lake Street/Park Presidio Boulevard (approximate increase of 5%)
- Lake Street/Funston Avenue (approximate increase of 7%)
- California Street/14th Avenue (approximate increase of 65%)
- California Street/Park Presidio Boulevard (approximate increase of less than 1%)

During the PM peak hour, Alternative 1 results in increased delays at all the study intersections compared to the existing conditions as follows:

- Lake Street/17th Avenue (approximate increase of 7%)
- Lake Street/15th Avenue (approximate increase of 38%)
- Lake Street/14th Avenue (increase of at least 64%)
- Lake Street/Park Presidio Boulevard (approximate increase of 20%)
- Lake Street/Funston Avenue (approximate increase of 11%)
- California Street/15th Avenue (approximate increase of 2%)
- California Street/14th Avenue (increase of at least 29%)
- California Street/Park Presidio Boulevard (approximate increase of less than 1%)

**Alternative 2: Wings Retained/Trust Revised Alternative** – As shown in Table 1, in the AM peak hour under existing conditions with Alternative 2, all study intersections would operate at LOS D or better except the two intersections of Lake Street/14th Avenue and California Street/14th Avenue, which would operate at LOS E. The remaining six of the eight study intersections would operate at the same levels of service as Alternative 1 and existing conditions. In the PM peak hour, as shown in Table 2, all but two intersections under Alternative 2 would operate at LOS D or better. The minor approaches to the two-way stop-controlled intersections of Lake Street/14th Avenue and California Street/14th Avenue would operate at LOS F. Alternative 2 would result in the same delay or slight decreases in delay for all study intersections during the PM peak hour versus Alternative 1. Compared to existing conditions, the levels of service at six of the eight study intersections would remain the same under Alternative 2.

*Comparison of Alternative 2 to Alternative 1*
Compared to Alternative 1, Alternative 2 would result in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 2%)
- Lake Street/15th Avenue (approximate reduction of 14%)
- Lake Street/14th Avenue (reduction of more than 3%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 3%)
- Lake Street/Funston Avenue (approximate reduction of 3%)
- California Street/14th Avenue (approximate reduction of 22%)

Alternative 2 would result in no change to the delay compared to Alternative 1 at the following intersection during the AM peak hour:

- California Street/Park Presidio Boulevard

During the AM peak hour, Alternative 2 would result in increased delays at the following study intersection compared to Alternative 1:

- California Street/15th Avenue (approximate increase of 1%)

Compared to Alternative 1, Alternative 2 would result in reduced delays at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 4%)
- Lake Street/15th Avenue (approximate reduction of 24%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 13%)
- Lake Street/Funston Avenue (approximate reduction of 6%)
- California Street/15th Avenue (approximate reduction of 7 %)

Alternative 2 would result in no substantial changes to the delay compared to Alternative 1 at the following three intersections during the PM peak hour:

- Lake Street/14th Avenue



- California Street/14th Avenue
- California Street/Park Presidio Boulevard

*Comparison of Alternative 2 to Existing Conditions*
Compared to the existing conditions, Alternative 2 would result in reduced delay at the following intersection during the AM peak hour:

- California Street/15th Avenue (approximate reduction of 13%)

During the AM peak hour, Alternative 2 would result in increased delays at the following intersections compared to the existing conditions:

- Lake Street/17th Avenue (approximate increase of 2%)
- Lake Street/15th Avenue (approximate increase of 12%)
- Lake Street/14th Avenue (approximate increase of more than 100%)
- Lake Street/Park Presidio Boulevard (approximate increase of 2%)
- Lake Street/Funston Avenue (approximate increase of 4%)
- California Street/14th Avenue (approximate increase of 29%)
- California Street/Park Presidio Boulevard (approximate increase of less than 1%)

Compared to the existing conditions, Alternative 2 would result in reduced delays at the following study intersection during the PM peak hour:

- California Street/15th Avenue (approximate reduction of 5%)

During the PM peak hour, Alternative 2 would result in increased delays at the following intersections compared to the existing conditions:

- Lake Street/17th Avenue (approximate increase of 2%)
- Lake Street/15th Avenue (approximate increase of 5%)
- Lake Street/14th Avenue (approximate increase of more than 64%)
- Lake Street/Park Presidio Boulevard (approximate increase of 4%)
- Lake Street/Funston Avenue (approximate increase of 4%)
- California Street/14th Avenue ( approximate increase of more than 29%)
- California Street/Park Presidio Boulevard (approximate increase of less than 1%)

**Alternative 3: Wings Removed Alternative** –Table 1 shows that in the AM peak hour under existing conditions with Alternative 3 six of the eight study intersections would operate at LOS D or better, and at the same levels of service as under existing conditions, or with Alternatives 1 or 2. In the AM peak hour, Alternative 3 would result in the same or reduced delays at all of the study intersections versus Alternatives 1 and 2.

As shown in Table 2, Alternative 3 would result in similar trends during the PM peak hour versus Alternative 1 and existing conditions. Compared to Alternative 2, Alternative 3 would result in increased delays for the minor approach to the two-way stop-controlled intersection of California Street/15th Avenue. At the minor approaches to the two-way stop–controlled intersections of Lake Street/14th Avenue and California Street/14th Avenue, Alternative 3 would operate at LOS F, versus LOS D and E in existing conditions. The remaining six study intersections would operate at LOS D or better during the PM peak hour, and at the same levels of service as with Alternatives 1, 2, and existing conditions.

*Comparison of Alternative 3 to Alternative 2*
Compared to Alternative 2, Alternative 3 would result in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of less than 1%)
- Lake Street/15th Avenue (approximate reduction of less than 1%)
- Lake Street/14th Avenue (approximate reduction of 15%)
- Lake Street/Funston Avenue (approximate reduction of less than 1%)
- California Street/15th Avenue (approximate reduction of 1%)
- California Street/14th Avenue (approximate reduction of 5%)
- California Street/Park Presidio Boulevard (approximate reduction of less than 1%)

Alternative 3 would result in no change to the delay compared to Alternative 2 at the following intersection during the AM peak hour:

- Lake Street/Park Presidio Boulevard

Compared to Alternative 2, Alternative 3 would result in reduced delays at the following intersection during the PM peak hour:

- Lake Street/15th Avenue (approximate reduction of 2%)

Alternative 3 would result in no substantive changes to the delays compared to Alternative 2 at the following intersections during the PM peak hour:

- Lake Street/17th Avenue
- Lake Street/14th Avenue
- Lake Street/Park Presidio Boulevard
- Lake Street/Funston Avenue



- California Street/14th Avenue
- California Street/Park Presidio Boulevard

During the PM peak hour, Alternative 3 would result in increased delays at the following study intersection compared to Alternative 2:

- California Street/15th Avenue (approximate increase of 1%)

*Comparison of Alternative 3 to Alternative 1*
Compared to Alternative 1, Alternative 3 would result in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 3%)
- Lake Street/15th Avenue (approximate reduction of 14%)
- Lake Street/14th Avenue (approximate reduction of more than 17%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 3%)
- Lake Street/Funston Avenue (approximate reduction of 3%)
- California Street/14th Avenue (approximate reduction of 26%)
- California Street/Park Presidio Boulevard Avenue (approximate reduction of less than 1%)

Alternative 3 would result in no change to the delay compared to Alternative 1 at the following intersection during the AM peak hour:

- California Street/15th Avenue

Compared to Alternative 1, Alternative 3 would result in reduced delays at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 5%)
- Lake Street/15th Avenue (approximate reduction of 25%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 13%)
- Lake Street/Funston Avenue (approximate reduction of 6%)
- California Street/15th Avenue (approximate reduction of 6%)

Alternative 3 would result in no substantive changes to the delays compared to Alternative 1 at the following intersections during the PM peak hour:

- Lake Street/14th Avenue
- California Street/14th Avenue
- California Street/Park Presidio Boulevard

*Comparison of Alternative 3 to Existing Conditions*
Compared to the existing conditions, Alternative 3 would result in reduced delay at the following intersection during the AM peak hour:

- California Street/15th Avenue (approximate reduction of 14%)

Alternative 3 would result in no change to the delay compared to the existing conditions at the following study intersection during the AM peak hour:

- California Street/Park Presidio Boulevard

During the AM peak hour, Alternative 3 would result in increased delays at the following intersections compared to the existing conditions:

- Lake Street/17th Avenue (approximate increase of 2%)
- Lake Street/15th Avenue (approximate increase of 11%)
- Lake Street/14th Avenue (approximate increase of 94%)
- Lake Street/Park Presidio Boulevard (approximate increase of 2%)
- Lake Street/Funston Avenue (approximate increase of 3%)
- California Street/14th Avenue (approximate increase of 22%)

Compared to existing conditions, Alternative 3 would result in reduced delay at the following intersection during the PM peak hour:

- California Street/15th Avenue (approximate reduction of 4%)

Alternative 3 would result in increased delays compared to the existing conditions at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate increase of 2%)
- Lake Street/15th Avenue (approximate increase of 3%)
- Lake Street/14th Avenue (approximate increase of more than 64%)
- Lake Street/Park Presidio Boulevard (approximate increase of 4%)
- Lake Street/Funston Avenue (approximate increase of 4%)
- California Street/14th Avenue (approximate increase of more than 29%)
- California Street/Park Presidio Boulevard (approximate increase of less than 1%)

**Alternative 4: Battery Caulfield Alternative** – Table 1 shows that Alternative 4 would result in similar levels of service and delays as the other alternatives and existing conditions during the AM peak hour, with all study intersections operating at LOS D or better except two intersections. During the AM peak hour, Alternative 4 would result in the same or reduced delays versus



Alternatives 1, 2 and 3, with only the minor street approach of the intersection of California Street/15th Avenue operating at slightly increased delays. Compared to the existing conditions, Alternative 4 would result in reduced delays at six study intersections and increased delays at the other two study intersections.

Table 2 shows that during the PM peak hour, Alternative 4 would result in the lowest delays and best levels of service of Alternatives 1, 2, 3, and 4 with the exception of California Street/15th Avenue intersection, which would operate with slightly higher delay than Alternative 2. However, the minor approaches to the two-way stop-controlled intersections of Lake Street/14th Avenue and California Street/14th Avenue would operate at LOS E as with the other alternatives. Alternative 4 would result in the same levels of service for the remaining six of the eight study intersections versus existing conditions during the PM peak hour.

*Comparison of Alternative 4 to Alternative 3*
Compared to Alternative 3, Alternative 4 would result in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of less than 1%)
- Lake Street/15th Avenue (approximate reduction of 6%)
- Lake Street/14th Avenue (approximate reduction of 10%)
- Lake Street/Park Presidio Boulevard (approximate reduction of less than 1%)
- Lake Street/Funston Avenue (approximate reduction of less than 1%)
- California Street/14th Avenue (approximate reduction of 2%)

Alternative 4 would result in no change to the delays compared to Alternative 3 at one study intersection during the AM peak hour:

- California Street/Park Presidio Boulevard

During the AM peak hour, Alternative 4 would result in increased delay at the following intersection compared to Alternative 3:

- California Street/15th Avenue (approximate increase of 2%)

Compared to Alternative 3, Alternative 4 would result in reduced delays at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of less than 1%)
- Lake Street/15th Avenue (approximate reduction of 2%)
- Lake Street/14th Avenue (approximate reduction of at least 8%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 2%)

- Lake Street/Funston Avenue (approximate reduction of less than 1%)

Alternative 4 would result in no substantive changes to the delays compared to Alternative 3 at the following intersections during the PM peak hour:

- California Street/15th Avenue
- California Street/14th Avenue
- California Street/Park Presidio Boulevard

*Comparison of Alternative 4 to Alternative 2*
Compared to Alternative 2, Alternative 4 would result in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 1%)
- Lake Street/15th Avenue (approximate reduction of 6%)
- Lake Street/14th Avenue (approximate reduction of 23%)
- Lake Street/Park Presidio Boulevard (approximate reduction of less than 1%)
- Lake Street/Funston Avenue (approximate reduction of 1%)
- California Street/14th Avenue (approximate reduction of 7%)
- California Street/Park Presidio Boulevard (approximate reduction of less than 1%)

During the AM peak hour, Alternative 4 would result in increased delay at one intersection compared to Alternative 2:

- California Street/15th Avenue (approximate increase of 1%)

Compared to Alternative 2, Alternative 4 would result in reduced delays at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of less than 1%)
- Lake Street/15th Avenue (approximate reduction of 4%)
- Lake Street/14th Avenue (approximate reduction of at least 8%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 2%)
- Lake Street/Funston Avenue (approximate reduction of less than 1%)

Alternative 4 would result in no substantive changes to the delay compared to Alternative 2 at the following intersections during the PM peak hour:

- California Street/14th Avenue



- California Street/Park Presidio Boulevard

During the PM peak hour, Alternative 4 would result in increased delays at one study intersection compared to Alternative 2:

- California Street/15th Avenue (approximate increase of 1%)

*Comparison of Alternative 4 to Alternative 1*
Compared to Alternative 1, Alternative 4 would result in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 3%)
- Lake Street/15th Avenue (approximate reduction of 19%)
- Lake Street/14th Avenue (approximate reduction of at least 25%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 4%)
- Lake Street/Funston Avenue (approximate reduction of 4%)
- California Street/14th Avenue (approximate reduction of 27%)
- California Street/Park Presidio Boulevard (approximate reduction of less than 1%)

During the AM peak hour, Alternative 4 would result in increased delays at the following study intersection compared to Alternative 1:

- California Street/15th Avenue (approximate increase of 2%)

Compared to Alternative 1, Alternative 4 would result in reduced delays at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 5%)
- Lake Street/15th Avenue (approximate reduction of 27%)
- Lake Street/14th Avenue (approximate reduction of at least 8%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 14%)
- Lake Street/Funston Avenue (approximate reduction of 7%)
- California Street/15th Avenue (approximate reduction of 6%)

Alternative 4 would result in no substantive changes to the delay compared to Alternative 1 at the following intersections during the PM peak hour:

- California Street/14th Avenue
- California Street/Park Presidio Boulevard

*Comparison of Alternative 4 to Existing Conditions*
Compared to the existing conditions, Alternative 4 results in reduced delay at the following intersection during the AM peak hour:

- California Street/15th Avenue (approximate reduction of 12%)

Alternative 4 would result in no change to the delay compared to the existing conditions at the following study intersection during the AM peak hour:

- California Street/Park Presidio Boulevard

During the AM peak hour, Alternative 4 would result in increased delays at the following intersections compared to the existing conditions:

- Lake Street/17th Avenue (approximate increase of 1%)
- Lake Street/15th Avenue (approximate increase of 5%)
- Lake Street/14th Avenue (approximate increase of 74%)
- Lake Street/Park Presidio Boulevard (approximate increase of 2%)
- Lake Street/Funston Avenue (approximate increase of 2%)
- California Street/14th Avenue (approximate increase of 20%)

Compared to the existing conditions, Alternative 4 would result in reduced delay at one study intersection during the PM peak hour:

- California Street/15th Avenue (approximate reduction of 4%)

During the PM peak hour, Alternative 4 would result in increased delays at the following intersections compared to the existing conditions:

- Lake Street/17th Avenue (approximate increase of 2%)
- Lake Street/15th Avenue (approximate increase of less than 1%)
- Lake Street/14th Avenue (approximate increase of 52%)
- Lake Street/Park Presidio Boulevard (approximate increase of 3%)
- Lake Street/Funston Avenue (approximate increase of 4%)
- California Street/14th Avenue (approximate increase of at least 29%)
- California Street/Park Presidio Boulevard (approximate increase of less than 1%)



### 2.2.2 Variant: New Park Presidio Blvd. Access with Inbound Only Traffic at 14th and 15th Avenue Gates

Tables 3 and 4 present the results of the intersection LOS analysis for the Existing Year 2000/2004 weekday AM and PM peak hour conditions for the four proposed land use build alternatives (Alternatives 1, 2, 3 and 4) assuming a new connection to Park Presidio Boulevard to and from the PHSH site north of Lake Street). The new intersection would allow traffic leaving the PHSH site to turn left or right on Highway 1, and allow southbound traffic on Highway 1 to enter the PHSH site directly from Highway 1. Both the 14th and 15th Avenue Gates would be open to inbound (northbound) traffic only.

**Table 3**
**Intersection Levels of Service – Weekday AM Peak Hour**
**Existing plus Project Variant**
**Variant: New Park Presidio Blvd. Access with Inbound Only Traffic at 14th and 15th Ave. Gates**

| Intersection | Traffic Control Device | Alt. 1 | | Alt. 2 | | Alt. 3 | | Alt. 4 | |
|---|---|---|---|---|---|---|---|---|---|
| | | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS |
| Lake St/ 17th Ave[2] | 2-Way Stop | 18.1 (SB) | C | 17.7 (SB) | C | 17.7 (SB) | C | 17.6 (SB) | C |
| Lake St/ 15th Ave | 4-Way Stop | 18.0 | C | 16.5 | C | 16.1 | C | 16.0 | C |
| Lake St/ 14th Ave [2] | 2-Way Stop | 34.7 (NB) | D | 27.1 (SB) | D | 26.5 (SB) | D | 26.0 (SB) | D |
| Lake St/ Park Presidio Blvd. | Traffic Signal | 14.8 | B | 14.5 | B | 14.5 | B | 14.3 | B |
| Lake St/ Funston Ave[2] | 2-Way Stop | 19.8 (SB) | C | 19.4 (SB) | C | 19.3 (SB) | C | 19.2 (SB) | C |
| California St/ 15th Ave [2] | 2-Way Stop | 24.2 (SB) | C | 22.8 (SB) | C | 22.5 (SB) | C | 22.3 (SB) | C |
| California St/ 14th Ave [2] | 2-Way Stop | **52.9** (SB) | **F** | **44.0** (SB) | **E** | **43.6** (SB) | **E** | **41.8** (SB) | **E** |
| California St/ Park Presidio Blvd. | Traffic Signal | 16.4 | B | 16.3 | B | 16.4 | B | 16.3 | B |
| New Alternative Access/ Park Presidio Blvd. | Traffic Signal | 4.8 | A | 4.4 | A | 4.4 | A | 4.3 | A |

Source: Wilbur Smith Associates – April 2006.

Notes:
[1] Delay presented in seconds per vehicle based on the 2000 HCM methodology.
[2] LOS and delay shown for worst minor stop-controlled approach. Major approach is uncontrolled and without delay.



**Table 4**
**Intersection Levels of Service – Weekday PM Peak Hour**
**Existing plus Project Variant**
**Variant: New Park Presidio Blvd. Access with Inbound Only Traffic at 14th and 15th Ave. Gates**

| Intersection | Traffic Control Device | Alt. 1 | | Alt. 2 | | Alt. 3 | | Alt. 4 | |
|---|---|---|---|---|---|---|---|---|---|
| | | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS | Delay [1] | LOS |
| Lake St/ 17th Ave[2] | 2-Way Stop | 17.7 (SB) | C | 16.9 (SB) | C | 16.9 (SB) | C | 16.8 (SB) | C |
| Lake St/ 15th Ave | 4-Way Stop | 14.0 | B | 12.8 | B | 12.7 | B | 12.6 | B |
| Lake St/ 14th Ave [2] | 2-Way Stop | **46.2** (SB) | **E** | **36.4** (SB) | **E** | **36.1** (SB) | **E** | **35.2** (SB) | **E** |
| Lake St/ Park Presidio Blvd. | Traffic Signal | 19.0 | B | 17.9 | B | 17.8 | B | 18.0 | B |
| Lake St/ Funston Ave[2] | 2-Way Stop | 18.8 (NB) | C | 18.3 (NB) | C | 18.3 (NB) | C | 18.2 (NB) | C |
| California St/ 15th Ave [2] | 2-Way Stop | 24.2 (SB) | C | 22.1 | C | 22.2 (SB) | C | 21.8 (SB) | C |
| California St/ 14th Ave [2] | 2-Way Stop | **>50** (SB) | **F** | **41.4** (SB) | **E** | **41.4** (SB) | **E** | **40.1** (SB) | **E** |
| California St/ Park Presidio Blvd. | Traffic Signal | 22.8 | C | 20.9 | C | 20.7 | C | 20.6 | C |
| New Alternative Access/ Park Presidio Blvd. | Traffic Signal | 14.9 | B | 6.2 | A | 5.6 | A | 5.8 | A |

Source: Wilbur Smith Associates – April 2006.

Notes:
[1] Delay presented in seconds per vehicle based on the 2000 HCM methodology.
[2] LOS and delay shown for worst minor stop-controlled approach. Major approach is uncontrolled and without delay.

**Alternative 1: PTMP Alternative** – For the Park Presidio Boulevard Access variant, Table 3 shows that all study intersections would operate at LOS D or better under Alternative 1 AM peak hour conditions except for the minor street approach to the two-way stop-controlled intersection of California Street/14th Avenue, which would operate at LOS F. As shown in Table 4, during the PM peak hour, the minor street approaches to the two-way stop-controlled intersections of Lake Street/14th Avenue and California Street/14th Avenue would operate at LOS E and LOS F, respectively; while the remaining study intersections operate at LOS D or better. Compared to existing conditions, Alternative 1 with the Park Presidio Boulevard Access variant results in reduced delays at one of the study intersections and increased delays at the remaining intersections during the AM peak hour; whereas it would result in increased delays at all the study intersections during the PM peak hour.

*Comparison of Alternative 1 to Existing Conditions*
Compared to the existing conditions, Alternative 1 results in reduced delays at the following intersection during the AM peak hour:

- Lake Street/Park Presidio Boulevard (approximate reduction of 10%)

During the AM peak hour, Alternative 1 results in increased delays at the following intersections compared to the existing conditions:

- Lake Street/17th Avenue (approximate increase of 3%)
- Lake Street/15th Avenue (approximate increase of 5%)
- Lake Street/14th Avenue (approximate increase of 62%)
- Lake Street/Funston Avenue (approximate increase of 17%)
- California Street/15th Avenue (approximate increase of 16%)
- California Street/14th Avenue (approximate increase of 77%)
- California Street/Park Park Presidio Boulevard (approximate increase of 1%)

During the PM peak hour, Alternative 1 results in increased delays at the following intersections compared to the existing conditions:

- Lake Street/17th Avenue (approximate increase of 6%)
- Lake Street/15th Avenue (approximate increase of 7%)
- Lake Street/14th Avenue (approximate increase of 52%)
- Lake Street/Park Presidio Boulevard (approximate increase of 3%)
- Lake Street/Funston Avenue (approximate increase of 18%)
- California Street/15th Avenue (approximate increase of 20%)
- California Street/14th Avenue (approximate increase of at least 29%)



- California Street/Park Presidio Boulevard (approximate increase of 3%)

**Alternative 2: Wings Retained/Trust Revised Alternative** – As shown in Table 3, in the AM peak hour under existing plus project conditions, study intersections would operate at LOS D or better with the Park Presidio Boulevard Access variant except for the minor street approach to the two-way stop-controlled intersection of California Street/14th Avenue, which would operate at LOS E. Table 4 shows that during the PM peak hour, the minor street approaches to the two-way stop-controlled intersections of Lake Street/14th Avenue and California Street/14th Avenue would operate at LOS E, with the remaining study intersections operating at LOS D or better. Alternative 2 with the Park Presidio Boulevard Access variant results in slightly reduced delays at two of the study intersections along Lake Street and higher delays at all other intersections during the AM peak hour versus existing conditions, and increased delays for all but three study intersections during the PM peak hour versus existing conditions. Compared to Alternative 1, most of the study intersections would operate at slightly lower delays during both the AM peak and PM peak hours.

*Comparison of Alternative 2 to Alternative 1*
Compared to Alternative 1, Alternative 2 results in reduced delays at all study intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 2%)
- Lake Street/15th Avenue (approximate reduction of 8%)
- Lake Street/14th Avenue (approximate reduction of 22%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 2%)
- Lake Street/Funston Avenue (approximate reduction of 2%)
- California Street/15th Avenue (approximate reduction of 6%)
- California Street/14th Avenue (approximate reduction of 17%)
- California Street/Park Presidio Boulevard (approximate reduction of less than 1%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 8%)

Compared to Alternative 1, Alternative 2 results in reduced delays at all study intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 5%)
- Lake Street/15th Avenue (approximate reduction 9%)
- Lake Street/14th Avenue (approximate reduction of 21%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 6%)
- Lake Street/Funston Avenue (approximate reduction of 3%)

- California Street/15th Avenue (approximate reduction of 9%)
- California Street/14th Avenue (approximate reduction of 17%)
- California Street/Park Presidio Boulevard (approximate reduction of 8%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 58%)

*Comparison of Alternative 2 to Existing Conditions*
Compared to the existing conditions, Alternative 2 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/15th Avenue (approximate reduction of 4%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 12%)

During the AM peak hour, Alternative 2 results in increased delays at the following intersections compared to the existing conditions:

- Lake Street/17th Avenue (approximate increase of 1%)
- Lake Street/14th Avenue (approximate increase of 27%)
- Lake Street/Funston Avenue (approximate increase of 15%)
- California Street/15th Avenue (approximate reduction of 10%)
- California Street/14th Avenue (approximate increase of 47%)
- California Street/Park Presidio Boulevard (approximate increase of less than 1%)

Compared to the existing conditions, Alternative 2 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/15th Avenue (approximate reduction of 2%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 3%)
- California Street/Park Presidio Boulevard (approximate reduction of 6%)

During the PM peak hour, Alternative 2 results in increased delays at the following intersections compared to the existing conditions:

- Lake Street/17th Avenue (approximate increase of 1%)
- Lake Street/14th Avenue (approximate increase of 19%)
- Lake Street/Funston Avenue (approximate increase of 15%)
- California Street/15th Avenue (approximate increase of 9%)
- California Street/14th Avenue (approximate increase of 6%)



**Alternative 3: Wings Removed Alternative** – As Table 3 indicates, in the AM peak hour under existing plus project conditions, Alternative 3 with the Park Presidio Boulevard Access variant would result in slightly reduced or comparable delays for all study intersections versus Alternative 2 Park Presidio Boulevard Access variant conditions. Similar to Alternative 2, all study intersections would operate at LOS D or better under Alternative 3 with the Park Presidio Boulevard Access variant conditions except for the minor street approach to the two-way stop-controlled intersection of California Street/14th Avenue, which would operate at LOS E. During the PM peak hour, as shown on Table 4, Alternative 3 with the Park Presidio Boulevard Access variant would again result in slightly reduced delays for most of the study intersections versus Alternative 2. Like Alternative 2 PM peak hour conditions, the minor street approaches to the two-way stop-controlled intersections of Lake Street/14th Avenue and California Street/14th Avenue would operate at LOS E, with the remaining study intersections operating at LOS D or better. As with Alternative 2, Alternative 3 with the Park Presidio Boulevard Access variant results in reduced delays at two of the intersections along Lake Street and increased delays for all other study intersections during the AM peak hour versus existing conditions, and increased delays for all but three study intersections during the PM peak hour versus existing conditions.

*Comparison of Alternative 3 to Alternative 2*
Compared to Alternative 2, Alternative 3 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/15th Avenue (approximate reduction of 2%)
- Lake Street/14th Avenue (approximate reduction of 2%)
- Lake Street/Funston Avenue (approximate reduction of less than 1%)
- California Street/15th Avenue (approximate reduction of 1%)
- California Street/14th Avenue (approximate reduction of less than 1%)

Alternative 3 results in no change to the delay compared to Alternative 2 at the following intersections during the AM peak hour:

- Lake Street/17th Avenue
- Lake Street/Park Presidio Boulevard
- New Alternative Access/Park Presidio Boulevard

During the PM peak hour, Alternative 3 results in increased delays at the following study intersection compared to Alternative 2:

- California Street/Park Presidio Boulevard (approximate increase of less than 1%)

Compared to Alternative 2, Alternative 3 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/15th Avenue (approximate reduction of less than 1%)
- Lake Street/14th Avenue (approximate reduction of less than 1%)
- Lake Street/Funston Avenue (approximate reduction of less than 1%)
- California Street/Park Presidio Boulevard (approximate reduction of 1%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 10%)

Alternative 3 results in no changes to the delay compared to Alternative 2 at the following intersections during the PM peak hour:

- Lake Street/17th
- Lake Street/Funston Avenue
- California Street/14th Avenue

During the PM peak hour, Alternative 3 results in increased delay at the following study intersection compared to Alternative 2:

- California Street/15th Avenue (approximate increase of less than 1%)

*Comparison of Alternative 3 to Alternative 1*

Compared to Alternative 1, Alternative 3 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 2%)
- Lake Street/15th Avenue (approximate reduction of 11%)
- Lake Street/14th Avenue (approximate reduction of 24%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 2%)
- Lake Street/Funston Avenue (approximate reduction of 3%)
- California Street/15th Avenue (approximate reduction of 7%)
- California Street/14th Avenue (approximate reduction of 18%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 8%)

Alternative 3 results in no change to the delay compared to Alternative 1 at the following intersection during the AM peak hour:

- California Street/Park Presidio Boulevard



Compared to Alternative 1, Alternative 3 results in reduced delays at all study intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 5%)
- Lake Street/15th Avenue (approximate reduction of 9%)
- Lake Street/14th Avenue (approximate reduction of 22%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 6%)
- Lake Street/Funston Avenue (approximate reduction of 3%)
- California Street/15th Avenue (approximate reduction of 8%)
- California Street/14th Avenue (approximate reduction of at least 17%)
- California Street/Park Presidio Boulevard (approximate reduction of 9%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 62%)

*Comparison of Alternative 3 to Existing Conditions*

Compared to the existing conditions, Alternative 3 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/15th Avenue (approximate reduction of 6%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 12%)

During the AM peak hour, Alternative 3 results in increased delays at the following intersections compared to the existing conditions:

- Lake Street/17th Avenue (approximate increase of 1%)
- Lake Street/14th Avenue (approximate increase of 24%)
- Lake Street/Funston Avenue (approximate increase of 14%)
- California Street/15th Avenue (approximate increase of 8%)
- California Street/14th Avenue (approximate increase of 46%)
- California Street/Park Presidio Boulevard (approximate increase of 1%)

Compared to the existing conditions, Alternative 3 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/15th Avenue (approximate reduction of 3%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 3%)
- California Street/Park Presidio Boulevard (approximate reduction of 7%)

During the PM peak hour, Alternative 3 results in increased delays at the following intersections compared to the existing conditions:

- Lake Street/17th Avenue (approximate increase of 1%)
- Lake Street/14th Avenue (approximate increase of 18%)
- Lake Street/Funston Avenue (approximate increase of 15%)
- California Street/15th Avenue (approximate increase of 10%)
- California Street/14th Avenue (approximate increase of 6%)

**Alternative 4: Battery Caulfield Alternative** – Alternative 4 with the Park Presidio Boulevard Access variant conditions are similar to conditions of other alternatives, and result in the lowest intersection delays of all alternatives. Table 3 shows that during the AM peak hour, all study intersections except California Street/14th Avenue would operate at LOS D or better under Alternative 4 with the Park Presidio Boulevard Access variant; and Table 4 shows that during the PM peak hour, the minor street approaches to the two-way stop-controlled intersections of Lake Street/14th Avenue and California Street/14th Avenue would operate at LOS E, with the remaining study intersections operating at LOS D or better. Similar to Alternatives 2 and 3 with the Park Presidio Boulevard Access variants, Alternative 4 with the Park Presidio Boulevard Access variant results in reduced delays for two of the study intersections along Lake Street and increased delays for all other study intersections during the AM peak hour versus existing conditions, and increased delays for all but three study intersections during the PM peak hour versus existing conditions.

*Comparison of Alternative 4 to Alternative 3*
Compared to Alternative 3, Alternative 4 results in reduced delays at all study intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of less than 1%)
- Lake Street/15th Avenue (approximate reduction of less than 1%)
- Lake Street/14th Avenue (approximate reduction of 2%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 1%)
- Lake Street/Funston Avenue (approximate reduction of less than 1%)
- California Street/15th Avenue (approximate reduction of less than 1%)
- California Street/14th Avenue (approximate reduction of 4%)
- California Street/Park Presidio Boulevard (approximate redcuction of less than 1%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 2%)



Compared to Alternative 3, Alternative 4 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of less than 1%)
- Lake Street/15th Avenue (approximate reduction of less than 1%)
- Lake Street/14th Avenue (approximate reduction of 3%)
- Lake Street/Funston Avenue (approximate reduction of less than 1%)
- California Street/15th Avenue (approximate reduction of 2%)
- California Street/14th Avenue (approximate reduction of 3%)
- California Street/Park Presidio Boulevard (approximate reduction of less than 1%)

During the PM peak hour, Alternative 4 results in increased delays at the following two study intersections compared to Alternative 3:

- Lake Street/Park Presidio Boulevard (approximate increase of 1%)
- New Alternative Access/Park Presidio Boulevard (approximate increase of 4%)

*Comparison of Alternative 4 to Alternative 2*
Compared to Alternative 2, Alternative 4 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of less than 1%)
- Lake Street/15th Avenue (approximate reduction of 3%)
- Lake Street/14th Avenue (approximate reduction of 4%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 1%)
- Lake Street/Funston Avenue (approximate reduction of 1%)
- California Street/15th Avenue (approximate reduction of 2%)
- California Street/14th Avenue (approximate reduction of 5%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 2%)

Alternative 4 results in no change to the delay compared to Alternative 2 at the following intersection during the AM peak hour:

- California Street/Park Presidio Boulevard

Compared to Alternative 2, Alternative 4 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of less than 1%)
- Lake Street/15th Avenue (approximate reduction of 2%)
- Lake Street/14th Avenue (approximate reduction of 3%)
- Lake Street/Funston Avenue (approximate reduction of less than 1%)
- California Street/15th Avenue (approximate reduction of 1%)
- California Street/14th Avenue (approximate reduction of 3%)
- California Street/Park Presidio Boulevard (approximate reduction of 1%)
- New Alternative Access/Park Presidio Boulevard (approximate reduction of 6%)

During the PM peak hour, Alternative 4 results in increased delay at the following study intersection compared to Alternative 2:

- Lake Street/Park Presidio Boulevard (approximate increase of less than 1%)

*Comparison of Alternative 4 to Alternative 1*
Compared to Alternative 1, Alternative 4 results in reduced delays at all study intersections during the AM peak hour:

- Lake Street/17th Avenue (approximate reduction of 3%)
- Lake Street/15th Avenue (approximate reduction of 11%)
- Lake Street/14th Avenue (approximate reduction of 25%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 3%)
- Lake Street/Funston Avenue (approximate reduction of 3%)
- California Street/15th Avenue (approximate reduction of 8%)
- California Street/14th Avenue (approximate reduction of 21%)
- California Street/Park Presidio Boulevard (approximate reduction of less than 1%)
- New Access Alternative/Park Presidio Boulevard (approximate reduction of 10%)

Compared to Alternative 1, Alternative 4 results in reduced delays at all study intersections during the PM peak hour:

- Lake Street/17th Avenue (approximate reduction of 5%)
- Lake Street/15th Avenue (approximate reduction of 10%)
- Lake Street/14th Avenue (approximate reduction of 24%)



- Lake Street/Park Presidio Boulevard (approximate reduction of 5%)
- Lake Street/Funston Avenue (approximate reduction of 3%)
- California Street/15th Avenue (approximate reduction of 10%)
- California Street/14th Avenue (approximate reduction of at least 20%)
- California Street/Park Presidio Boulevard (approximate reduction of 10%)
- New Access Alternative/Park Presidio Boulevard (approximate reduction of 61%)

*Comparison of Alternative 4 to Existing Conditions*
Compared to the existing conditions, Alternative 4 results in reduced delays at the following intersections during the AM peak hour:

- Lake Street/15th Avenue (approximate reduction of 7%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 13%)

During the AM peak hour, Alternative 4 results in increased delays at the following intersections compared to the existing conditions:

- Lake Street/17th Avenue (approximate increase of less than 1%)
- Lake Street/14th Avenue (approximate increase of 22%)
- Lake Street/Funston Avenue (approximate increase of 14%)
- California Street/15th Avenue (approximate increase of 7%)
- California Street/14th Avenue (approximate increase of 40%)
- California Street/Park Presidio Boulevard (approximate increase of less than 1%)

Compared to the existing conditions, Alternative 4 results in reduced delays at the following intersections during the PM peak hour:

- Lake Street/15th Avenue (approximate reduction of 4%)
- Lake Street/Park Presidio Boulevard (approximate reduction of 2%)
- California Street/Park Presidio Boulevard (approximate reduction of 7%)

During the PM peak hour, Alternative 4 results in increased delays at the following intersections compared to the existing conditions:

- Lake Street/17th Avenue (approximate increase of less than 1%)
- Lake Street/14th Avenue (approximate increase of 16%)
- Lake Street/Funston Avenue (approximate increase of 15%)
- California Street/15th Avenue (approximate increase of 8%)

- California Street/14th Avenue (approximate increase of 3%)

## 2.3 Traffic Operations and Safety Considerations

### 2.3.1 One-Way Couplet at 14th and 15th Avenue Gates

Traffic conditions on Park Presidio Boulevard and in the surrounding residential neighborhood would vary across alternatives. Tables 5 and 6 shows anticipated peak hour traffic volumes through the 14th and 15th Avenue Gates for each of the alternatives. Traffic volumes through the 14th and 15th Avenue Gates would relate directly to the level of comfort and safety concerns of the residents of the surrounding neighborhood.

**Table 5**
**Comparison of Peak Hour Traffic Volumes through 14th/15th Avenue Gates**
**Existing Year 2005 plus Project Conditions**

| Land Use Alternative | One-way Couplet | |
|---|---|---|
| | AM Peak Hour | PM Peak Hour |
| Alternative 1 | 388 | 559 |
| Alternative 2 | 262 | 279 |
| Alternative 3 | 246 | 273 |
| Alternative 4 | 214 | 234 |

Source: Wilbur Smith Associates – February 2006.

**Alternative 1: PTMP Alternative** – Alternative 1 is expected to result in approximately 338 and 553 vehicles per hour traveling through the 14th and 15th Avenue Gates in the AM and PM peak hours, respectively. PM peak hour volume of 553 vehicles is about 4 times the PM peak hour volume of 133 vehicles per hour observed in October 2005.

**Alternative 2: Wings Retained/Trust Revised Alternative** – Alternative 2 would result in 32 percent fewer AM peak hour vehicle trips through the 14th and 15th Avenue Gates and 50 percent fewer PM peak hour vehicle trips through the 14th and 15th Avenue Gates than Alternative 1.

**Alternative 3: Wings Removed Alternative** – Compared to Alternative 2, Alternative 3 would result in approximately six percent and two percent fewer trips during the AM and PM peak hours, respectively. When compared to Alternative 1, Alternative 3 would result in approximately 37 percent fewer vehicle trips through the 14th and 15th Avenue Gates during the AM peak hour and approximately 51 percent fewer trips during the PM peak hour.

**Alternative 4: Battery Caulfield Alternative** – Alternative 4 would generate 45 and 58 percent fewer vehicle trips through the 14th and 15th Avenue Gates in the AM and PM peak hours, respectively, than Alternative 1; 18 percent fewer vehicle trips through the 14th and 15th Avenue Gates in the AM and PM peak hours than Alternative 2; and 13 and 14 percent fewer vehicle trips through the 14th and 15th Avenue Gates in the AM and PM peak hours, respectively, than Alternative 3.



### 2.3.2 Variant: New Park Presidio Boulevard Access with Inbound only Traffic at 14th And 15th Avenue Gates

**Table 6**
**Comparison of Peak Hour Traffic Volumes through 14th/15th Avenue Gates**
**Existing Year 2005 plus Project with Park Presidio Boulevard Access Conditions**

| Land Use Alternative | One-way Couplet | |
|---|---|---|
| | AM Peak Hour | PM Peak Hour |
| Alternative 1 | 175 | 174 |
| Alternative 2 | 119 | 98 |
| Alternative 3 | 105 | 98 |
| Alternative 4 | 99 | 86 |

Source: Wilbur Smith Associates – February 2006.

**Alternative 1: PTMP Alternative** – Alternative 1 with the Park Presidio Boulevard Access variant is expected to result in approximately 175 and 174 vehicles per hour traveling through the 14th and 15th Avenue Gates in the AM and PM peak hours, respectively.

**Alternative 2: Wings Retained/Trust Revised Alternative** – Alternative 2 with the Park Presidio Access variant would result in 32 percent fewer AM peak hour vehicle trips through the 14th and 15th Avenue Gates and 44 percent fewer PM peak hour vehicle trips through the 14th and 15th Avenue Gates than Alternative 1.

**Alternative 3: Wings Removed Alternative** – Compared to Alternative 2, Alternative 3 would result in approximately 12 percent fewer trips during the AM peak hour and no change in trips during the PM peak hour. When compared to Alternative 1, Alternative 3 would result in approximately 40 percent fewer vehicle trips through the 14th and 15th Avenue Gates during the AM peak hour and approximately 44 percent fewer trips during the PM peak hour.

**Alternative 4: Battery Caulfield Alternative** – Alternative 4 would generate 43 and 51 percent fewer vehicle trips through the 14th and 15th Avenue Gates in the AM and PM peak hours, respectively, than Alternative 1; 17 percent and 12 percent fewer vehicle trips through the 14th and 15th Avenue Gates in the AM and PM peak hours, respectively, than Alternative 2; and 6 and 12 percent fewer vehicle trips through the 14th and 15th Avenue Gates in the AM and PM peak hours, respectively, than Alternative 3.

## 3. TRANSIT SERVICE

The land uses associated with the PHSH alternatives would generate transit trips on several Bay Area transit providers, and would most affect the three transit providers that directly serve the project site, including the San Francisco Municipal Railway (Muni), Golden Gate Transit (GGT) and the Presidio's internal shuttle (PresidiGo). Trips to and from the project site expected to be made by transit were estimated based on the expected mode split discussed in Technical

Memorandum No. 2, Travel Demand, and then assigned to transit routes based on the geographic distribution of origins and destinations. Because some transit passengers may use more than one transit mode (e.g., transfer from Muni to PresidiGo), the sum of transit trips made on each transit provider may exceed the total number of transit passengers. Table 7 summarizes the expected AM peak hour and PM peak hour transit trips to and from the project site by transit service provider for each alternative. Tables 8, 9, 10, and 11 summarize the AM and PM peak hour ridership on Muni, Golden Gate Transit and PresidiGo for all trips to and from the Presidio.

**Table 7**
**Peak Hour Transit Trips to/from Project Site by Service Provider and Alternative**
**Existing Year 2005 plus Project Conditions**

| Time Period and Service Provider | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 |
|---|---|---|---|---|
| **AM Peak Hour** | | | | |
| S.F. Muni | 90 | 50 | 42 | 29 |
| Golden Gate Transit | 10 | 5 | 4 | 3 |
| PresidiGo | 44 | 18 | 14 | 11 |
| **PM Peak Hour** | | | | |
| S.F. Muni | 169 | 55 | 49 | 35 |
| Golden Gate Transit | 18 | 6 | 5 | 4 |
| PresidiGo | 78 | 20 | 17 | 14 |

Source: Wilbur Smith Associates – February 2006.



**Table 8**
**Existing (Year 2005) plus Project Muni Passenger Loads and Load Factors**
**AM Peak Hour**

| Line | Direction | Maximum Load Point | Number of Passengers | | | | | Average Load Factor | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Existing Capacity | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Existing Capacity | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 |
| 1 | to Howard/Main | Clay/Powell | 866 | 894 | 893 | 893 | 891 | 1,276 | 103% | 103% | 103% | 103% |
| | to Geary/33rd | Sacramento/ Polk | 819 | 398 | 380 | 375 | 373 | 1,173 | 49% | 46% | 46% | 46% |
| 1AX | to Davis/Pine | California/ Park Presidio | 535 | 333 | 331 | 331 | 329 | 0 | 94% | 94% | 94% | 93% |
| | to Geary/33rd | n.a. | 0 | 0 | 0 | 0 | 0 | 294 | 0% | 0% | 0% | 0% |
| 1BX | to Davis/Pine | California/ Fillmore | 707 | 640 | 639 | 639 | 637 | 0 | 91% | 90% | 90% | 90% |
| | to Park Presidio/ California | n.a. | 0 | 0 | 0 | 0 | 0 | 334 | 0% | 0% | 0% | 0% |
| 28 | to Fort Mason | 19th Ave/Lincoln | 420 | 296 | 295 | 295 | 294 | 268 | 71% | 70% | 70% | 70% |
| | to Daly City BART | 19th Ave/Sloat | 378 | 238 | 231 | 228 | 228 | 305 | 63% | 61% | 60% | 60% |
| 28L | to Park Presidio/ California | 19th Ave/Lincoln | 236 | 177 | 176 | 176 | 174 | 0 | 75% | 74% | 74% | 74% |
| | to Daly City BART | 19th Ave/Sloat | 331 | 158 | 150 | 147 | 147 | 0 | 48% | 45% | 45% | 44% |

Source: Wilbur Smith Associates – February 2006.

Notes:

1. n.a. – Not applicable; Indicates that no runs are made on that route in that direction during that particular time period.
2. Peak hour capacity is based on the Muni Bus and Metro FY 2004-2005 Weekday Conditions. It assumes an appreciable number of standees per vehicle (somewhere between 60% and 80% of the number of seated passengers, depending on the specific transit vehicle configuration) and may not include the effects of missed or late runs.
3. Peak hour ridership is assumed to be 60% of the two-hour peak period ridership.
4. The 1-California line operates at an eight-minute headway west of Fillmore Street and at a three-minute headway east of Fillmore Street. The peak hour loads correspond to maximum load points located east of Fillmore Street.

**Table 9**
**Existing (Year 2005) plus Project Muni Passenger Loads and Load Factors**
**PM Peak Hour**

| Line | Direction | Maximum Load Point | Number of Passengers | | | | | Average Load Factor | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Existing Capacity | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Existing Capacity | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 |
| 1 | to Howard/Main | Clay/Powell | 866 | 629 | 599 | 595 | 593 | 1,276 | 49% | 47% | 47% | 46% |
| | to Geary/33rd | Sacramento/Polk | 819 | 1,020 | 1,009 | 1,009 | 1,007 | 1,173 | 87% | 86% | 86% | 86% |
| 1AX | to Davis/Pine | n.a. | 535 | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% |
| | to Geary/33rd | California/ Park Presidio | 0 | 229 | 215 | 215 | 213 | 294 | 78% | 73% | 73% | 72% |
| 1BX | to Davis/Pine | n.a. | 707 | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% |
| | to Park Presidio/ California | California/ Fillmore | 0 | 289 | 275 | 275 | 273 | 334 | 87% | 82% | 82% | 82% |
| 28 | to Fort Mason | 19th Ave/Lincoln | 420 | 305 | 279 | 276 | 274 | 268 | 114% | 104% | 103% | 102% |
| | to Daly City BART | 19th Ave/Sloat | 378 | 388 | 370 | 370 | 367 | 305 | 128% | 121% | 121% | 120% |
| 28L | to Park Presidio/ California | n.a. | 236 | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% |
| | to Daly City BART | n.a. | 331 | 0 | 0 | 0 | 0 | 0 | 0% | 0% | 0% | 0% |

Source: Wilbur Smith Associates – February 2006.
Notes:
1. n.a. – Not applicable; Indicates that no runs are made on that route in that direction during that particular time period.
2. Peak hour capacity is based on the Muni Bus and Metro FY 2004-2005 Weekday Conditions. It assumes an appreciable number of standees per vehicle (somewhere between 60% and 80% of the number of seated passengers, depending on the specific transit vehicle configuration) and may not include the effects of missed or late runs.
3. Peak hour ridership is assumed to be 60% of the two-hour peak period ridership.
4. The 1-California line operates at an eight-minute headway west of Fillmore Street and at a three-minute headway east of Fillmore Street. The peak hour loads correspond to maximum load points located east of Fillmore Street.



**Table 10**
**Route 10 Golden Gate Transit Bus Passenger Loads and Load Factors**
**Existing (Year 2005) plus Project Conditions**

| Time Period | Number of Passengers | | | | | Average Load Factor | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Peak Hour Capacity | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 |
| **AM Peak Hour** | | | | | | | | | |
| - Northbound | 59 | 29 | 28 | 28 | 27 | 49% | 48% | 48% | 46% |
| - Southbound | 39 | 30 | 26 | 25 | 25 | 77% | 67% | 65% | 64% |
| **PM Peak Hour** | | | | | | | | | |
| - Northbound | 49 | 28 | 22 | 21 | 20 | 57% | 44% | 43% | 42% |
| - Southbound | 59 | 38 | 32 | 32 | 31 | 65% | 55% | 55% | 53% |

Source: Wilbur Smith Associates – February 2006.
Peak hour capacity assumes 39 passengers per bus.

**Table 11**
**PresidiGo Ridership by Alternative**
**Existing (Year 2005) plus Project Conditions**

| Alternative | AM Peak Hour | PM Peak Hour |
|---|---|---|
| Alternative 1 | 244 | 369 |
| Alternative 2 | 231 | 342 |
| Alternative 3 | 230 | 341 |
| Alternative 4 | 230 | 342 |

Source: Wilbur Smith Associates – February 2006.

**Alternative 1: PTMP Alternative –** Alternative 1 would generate 1,524 daily transit trips. The alternative would generate 114 transit trips in the AM peak hour and 212 transit trips in the PM peak hour. Under existing AM peak hour conditions, the additional transit trips associated with Alternative 1 would not exceed the capacity of any of the Muni routes except under AM peak hour conditions, where Muni Route 1 would exceed capacity in the inbound direction; under PM peak hour conditions, Muni Route 28 would exceed capacity in both the inbound and outbound direction with the addition of transit trips associated with Alternative 1. The maximum load point for the Muni Route 28 occurs south of Golden Gate Park, and many passengers traveling to and from the Presidio are expected to board the bus at a considerable distance from the maximum load point.

Golden Gate Transit (GGT) Route 10 is the GGT route that directly serves the project site. As shown in Table 10, ridership on this route would not exceed capacity during the AM or PM peak hours under existing conditions with the addition of transit trips associated with Alternative 1. This analysis conservatively assumes that all transit ridership to/from the North Bay would be on GGT Route 10. In reality, some passengers may transfer to/from other GGT routes at the Golden Gate Bridge Toll Plaza, in which case the transit load would be distributed across more routes, resulting in a lesser impact.

**Alternative 2: Wings Retained/Trust Revised Alternative –** Alternative 2 would generate 558 daily transit trips, or 63 percent fewer than Alternative 1. In the AM peak hour, Alternative 2 would generate 58 transit trips, or 49 percent fewer than Alternative 1. In the PM peak hour, Alternative 2 would generate 64 transit trips, or 70 percent fewer than Alternative 1.

The calculated Muni ridership for Alternative 2 is expected to result in 44 percent and 67 percent less Muni ridership than Alternative 1 in the AM and PM peak hours, respectively. As shown in Tables 8 and 9, average load factors on Muni lines during the AM and PM peak hours with Alternative 2 would be virtually the same as with Alternative 1. As under Alternative 1 conditions, under AM peak hour conditions, Muni Route 1 would exceed capacity in the inbound direction; under PM peak hour conditions, Muni Route 28 would exceed capacity in both the inbound and outbound direction with the addition of transit trips associated with Alternative 2.

As shown in Table 10, ridership on GGT Route 10 would not exceed capacity during the AM and PM peak hours under existing conditions with the addition of transit trips associated with Alternative 2. Alternative 2 would result in decreased load factors in both the AM and PM peak hours in the northbound and southbound directions, as compared to Alternative 1. This analysis conservatively assumes that all transit ridership to/from the North Bay would be on GGT Route 10. In reality, some passengers may transfer to/from other GGT routes at the Golden Gate Bridge Toll Plaza, in which case the transit load would be distributed across more routes, resulting in a lesser impact

**Alternative 3: Wings Removed Alternative –** Alternative 3 would generate 484 daily transit trips, or 68 percent fewer than Alternative 1 and 13 percent fewer than Alternative 2. In the AM peak hour, Alternative 3 would generate 48 transit trips, or 58 percent fewer than Alternative 1 and 17 percent fewer than Alternative 2. In the PM peak hour, Alternative 3 would generate 57 transit trips, or 73 percent fewer than Alternative 1 and 11 percent fewer than Alternative 2. Compared to Alternatives 1 and 2, Alternative 3 is expected to result in 53 and 16 percent less Muni ridership under existing conditions in the AM peak hours and 71 and 11 percent less Muni ridership under existing conditions in the PM peak hour, respectively. As shown in Tables 8 and 9, average load factors on Muni lines during the AM and PM peak hours with Alternative 3 would be virtually the same as with Alternative 1 and 2. Similar to Alternative 1 and 2 conditions, under AM peak hour conditions, Muni Route 1 would exceed capacity in the inbound direction; under PM peak hour conditions, Muni Route 28 would exceed capacity in both the inbound and outbound direction with the addition of transit trips associated with Alternative 3.

Table 10 shows that ridership on GGT Route 10 would not exceed capacity during the AM or PM peak hour under existing conditions with the addition of transit trips associated with Alternative 3. Also similar to Alternative 2, Alternative 3 would result in decreased load factors in both the AM and PM northbound and southbound directions, as compared to Alternative 1. This analysis conservatively assumes that all transit ridership to/from the North Bay would be on GGT Route 10. In reality, some passengers may transfer to/from other GGT routes at the Golden Gate Bridge Toll Plaza, in which case the transit load would be distributed across more routes, resulting in a lesser impact



**Alternative 4: Battery Caulfield Alternative –** Alternative 4 would generate 417 daily transit trips, or 73 percent fewer than Alternative 1 and 25 percent fewer than Alternative 2 and 14 percent fewer than Alternative 3. In the AM peak hour, Alternative 4 would generate 34 transit trips, or 70 percent fewer than Alternative 1, and 41 percent fewer than Alternative 2, and 29 percent fewer than Alternative 3. In the PM peak hour, Alternative 4 would generate 42 transit trips, or 80 percent fewer than Alternative 1, 34 percent fewer than Alternative 2, and 26 percent fewer than Alternative 3. Compared to Alternative 1, Alternative 4 is expected to result in 68 percent and 79 percent less Muni ridership under existing conditions in the AM and PM peak hours, respectively. Average load factors on Muni lines during the AM and PM peak hours with Alternative 4 would be virtually the same as with Alternatives 1, 2, and 3, as shown in Tables 8 and 9. Similar to Alternatives 1, 2, and 3, under AM peak hour conditions, Muni Route 1 would exceed capacity in the inbound direction; under PM peak hour conditions, Muni Route 28 would exceed capacity in both the inbound and outbound direction with the addition of transit trips associated with Alternative 4.

As shown in Table 10, ridership on GGT Route 10[2] would not exceed capacity during the AM or PM peak hour under existing conditions with the addition of transit trips associated with Alternative 4. Alternative 4 would result in the lowest load factors in both the AM and PM peak hours for both northbound and southbound directions, as compared to Alternatives 1, 2, and 3.

## 4. BICYCLE AND PEDESTRIAN CONDITIONS

The number of person trips to and from the project site expected to be made by bicycling, walking, or some other mode was calculated assuming the mode split discussed in Technical Memorandum No. 2, Travel Demand. The effects of the PHSH project alternatives on bicycle and pedestrian conditions are discussed in Technical Memorandum No. 3.

## 5. PARKING CONDITIONS

The effects of the PHSH project alternatives on parking conditions are discussed in Technical Memorandum No. 3.

## 6. MITIGATION MEASURES

The mitigation measures identified in this section represent those mitigation measures identified for Year 2025 conditions (in Technical Memorandum No. 3) that would be required under existing conditions.

### 6.1 Potential Impacts Identified

The possible mitigation measure identified for Lake Street/14$^{th}$ Avenue in the PTMP EIS included signalization and restriping to provide a westbound left-turn pocket at Lake Street /14$^{th}$ Avenue (Mitigation Measure TR-11). The possible mitigation measure identified in the PTMP EIS for the California Street/14$^{th}$ Avenue intersection included installing STOP signs on

[2] Ridership data presented are for GGT Route 50. GGT Route 50 no longer exists, but GGT Route 10 follows the same alignment in San Francisco. Ridership data for GGT Route 10 are not yet available.

California Street at the intersection and restriping to add a right-turn lane to the northbound approach, or possibly installing a traffic signal if queues on the westbound approach were determined to extend into the adjacent intersection of Park Presidio Boulevard/California Street.

While signalization would mitigate the operation of these intersections, it has been determined, through subsequent analysis (Access Study at 14th/15th Avenue Gates, Presidio Trust, February 2003) and coordination with the San Francisco Department of Parking and Traffic following their comments on the PTMP EIS that questioned the need for improving the minor approaches to these intersections (PTMP EIS, Volume II, Chapter 5, page 5-59), that the LOS E or F conditions on the minor approaches to Lake Street/14th Avenue could be mitigated with other measures such as RIGHT TURN ONLY restrictions for the minor approaches. The minor approaches to the intersection of Lake Street/14th Avenue are expected to operate with an average delay per vehicle that is comparable to that for the minor approaches to the intersection of California Street/14th Avenue. Therefore, such measures would also likely improve the minor approaches to the intersection of California Street/14th Avenue to LOS D or better in the AM and PM peak hours.

As discussed in Section 3 Transit Service, Muni Route 28-19th Avenue would experience a maximum peak hour load factor higher than 100 percent under all alternatives under PM peak hour conditions. Mitigation measures called for in the PTMP EIS, including increased frequency on MUNI lines, PresidiGo service, and monitoring of GGT routes and coordination with GGT, would reduce the effects of these alternatives on transit service.

## 6.2 Mitigation Measures Identified in the PTMP EIS

The following measures are part of the PTMP EIS and would apply to all PHSH site alternatives with and without direct access to Park Presidio Boulevard unless indicated otherwise. For measures that fall outside the Presidio, the Trust would coordinate with the City's Department of Parking and Traffic, which would have sole jurisdiction.

TR-11 *Lake Street / 14th Avenue Intersection Improvements* – Designate the 15th Avenue Gate for outbound traffic, and open the 14th Avenue Gate for inbound traffic. Alternatively, if the Park Presidio Boulevard Access variant is implemented, designate both the 14th and Avenues for inbound traffic only. Prior to the intersection operations deteriorating to LOS E or F, right-turn-only restrictions could be implemented for the minor approaches at the intersection of Lake Street/14th Avenue if the City determines this is warranted. The turn restrictions would be considered a mitigation measure for Alternative 1 with the couplet only, as this is the only alternative under which the Caltrans peak hour signal warrant would be met and therefore would be the only alternative with a significant impact. For Alternatives 2, 3, and 4 with the couplet or variant and Alternative 1 with the variant, the turn restrictions would be considered improvement measures that would address less-than-significant effects.

TR-15 *California Street / 14th Avenue Intersection Improvements* –Prior to the minor intersection approach(es) of the intersection operations deteriorating to LOS E or F, implement right-turn-only restrictions for the minor approaches at the two-way stop-controlled intersection of Lake



Street/ 14th Avenue if Caltrans signal warrants would be met[3]. Using the existing plus project peak hour turning movement volumes, an analysis of Caltrans' Peak Hour Signal Warrant indicates that the intersection would not meet the peak hour warrant under any of the alternatives. Therefore, the turn restrictions would be considered an improvement measure to address a less-than-significant impact with each alternative. The Trust would coordinate with the City and County of San Francisco to determine the contribution of each party to the cost of improvements.

TR-22 *TDM Program Monitoring* – The Trust has agreed to implement a TDM Program to reduce automobile usage by all tenants, occupants, and visitors (see Appendix D of the PTMP for a full description). The Trust would monitor implementation and effectiveness of the TDM program on an ongoing basis. If the TDM performance standards as described in the PTMP (Appendix D) are not being reached, the Trust will implement more aggressive TDM strategies or intensify components of the existing TDM program, such as requiring tenant participation in more TDM program elements, or implementing more frequent and/or extensive shuttle service.

TR-10 and TR-25 *Transit Service Improvements and Monitoring Program* – The Trust currently monitors Muni operations and passenger loads within the Presidio. Continued monitoring of Muni service in the Presidio, and similar monitoring of GGT service at the Presidio would indicate any capacity problems. If the monitoring were to reveal insufficient capacity for northbound Presidio-generated passengers during the PM peak hour, the Trust will notify Muni or the Golden Gate Bridge Highway and Transportation District of the deficiencies. Transit service providers could then reduce passenger load factors through increased frequency.

TR-26 *Construction Traffic Management Plan* – During pre-construction activities, the contractor(s) of individual projects will work with the Trust to develop a construction traffic management protocol. The plan will include information on construction phases and duration, scheduling, proposed haul routes, permit parking, staging area management, visitor safety, detour routes, and pedestrian movements on adjacent routes.

Mitigation Measure TR-9 *Bicycle and Pedestrian Amenities,* would be implemented as planned improvements are funded pursuant to th e adopted Presidio Trails and Bikeways Master Plan. Mitigation Measure TR-21 *Presidio-wide Parking Management*, which applies to the Crissy Field area, does not apply to the PHSH district.

[3] The PTMP EIS proposed installing all-way stop control at this intersction, and if that were not feasible because of queues extending into the adjacent intersection on Park Presidio Boulevard, installing a traffic signal. In a comment letter on the PTMP EIS, the San Francisco Department of Parking and Traffic (DPT) expressed concern about the reasonableness of signalization at this intersection. The alternatives to signalization developed for the intersection of Lake Stree/t14th Avenue (right-turn-only restrictions) would also likely improve the operation of the minor approaches of the intersection of California Street/14th Avenue.

# APPENDICES

# APPENDIX A

**Existing plus Project Conditions**
**Requested No Action Alternative**
**AM Peak Hour**

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | | ✣ | | | ✣ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 545 | 13 | 15 | 263 | 1 | 3 | 1 | 39 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 592 | 14 | 16 | 286 | 1 | 3 | 1 | 42 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 287 | | | 607 | | | 928 | 923 | 599 | 966 | 930 | 286 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 287 | | | 607 | | | 928 | 923 | 599 | 966 | 930 | 286 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 92 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1287 | | | 981 | | | 243 | 267 | 505 | 213 | 264 | 757 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 609 | 303 | 47 | 12 |
| Volume Left | 2 | 16 | 3 | 4 |
| Volume Right | 14 | 1 | 42 | 3 |
| cSH | 1287 | 981 | 461 | 290 |
| Volume to Capacity | 0.00 | 0.02 | 0.10 | 0.04 |
| Queue Length 95th (ft) | 0 | 1 | 8 | 3 |
| Control Delay (s) | 0.0 | 0.6 | 13.7 | 17.9 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.6 | 13.7 | 17.9 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 40.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | | ✣ | | | ✣ | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 47 | 528 | 13 | 13 | 256 | 90 | 2 | 49 | 37 | 50 | 36 | 21 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 49 | 550 | 14 | 14 | 267 | 94 | 2 | 51 | 39 | 52 | 38 | 22 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 613 | 374 | 92 | 111 |
| Volume Left (vph) | 49 | 14 | 2 | 52 |
| Volume Right (vph) | 14 | 94 | 39 | 22 |
| Hadj (s) | 0.00 | -0.14 | -0.25 | -0.02 |
| Departure Headway (s) | 5.1 | 5.3 | 6.5 | 6.6 |
| Degree Utilization, x | 0.88 | 0.55 | 0.16 | 0.20 |
| Capacity (veh/h) | 687 | 636 | 495 | 496 |
| Control Delay (s) | 33.2 | 14.7 | 10.7 | 11.3 |
| Approach Delay (s) | 33.2 | 14.7 | 10.7 | 11.3 |
| Approach LOS | D | B | B | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 23.6 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 67.4% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 0 | 610 | 5 | 139 | 352 | 6 | 4 | 4 | 40 | 1 | 2 | 3 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 0 | 629 | 5 | 143 | 363 | 6 | 4 | 4 | 41 | 1 | 2 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 369 | | | 634 | | | 1288 | 1287 | 631 | 1327 | 1287 | 366 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 327 | | | 634 | | | 1307 | 1306 | 631 | 1349 | 1306 | 324 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 85 | | | 96 | 97 | 91 | 99 | 98 | 100 |
| cM capacity (veh/h) | 1166 | | | 959 | | | 113 | 129 | 484 | 96 | 129 | 677 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 634 | 512 | 49 | 6 |
| Volume Left | 0 | 143 | 4 | 1 |
| Volume Right | 5 | 6 | 41 | 3 |
| cSH | 1166 | 959 | 322 | 197 |
| Volume to Capacity | 0.00 | 0.15 | 0.15 | 0.03 |
| Queue Length 95th (ft) | 0 | 13 | 13 | 2 |
| Control Delay (s) | 0.0 | 3.9 | 18.2 | 23.8 |
| Lane LOS | | A | C | C |
| Approach Delay (s) | 0.0 | 3.9 | 18.2 | 23.8 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.5 | | |
| Intersection Capacity Utilization | 72.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4932 | |
| Flt Permitted | 0.60 | 1.00 | 1.00 | 0.28 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1092 | 1756 | 1492 | 490 | 1756 | 1492 | | 5012 | | | 4932 | |
| Volume (vph) | 218 | 405 | 28 | 59 | 170 | 105 | 0 | 2350 | 77 | 0 | 2058 | 327 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 222 | 413 | 29 | 60 | 173 | 107 | 0 | 2398 | 79 | 0 | 2100 | 334 |
| RTOR Reduction (vph) | 0 | 0 | 5 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 25 | 0 |
| Lane Group Flow (vph) | 222 | 413 | 24 | 60 | 173 | 105 | 0 | 2473 | 0 | 0 | 2409 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 360 | 578 | 491 | 161 | 578 | 491 | | 2889 | | | 2843 | |
| v/s Ratio Prot | | c0.24 | | | 0.10 | | | c0.49 | | | 0.49 | |
| v/s Ratio Perm | 0.20 | | 0.02 | 0.12 | | 0.07 | | | | | | |
| v/c Ratio | 0.62 | 0.71 | 0.05 | 0.37 | 0.30 | 0.21 | | 0.86 | | | 0.85 | |
| Uniform Delay, d1 | 24.0 | 25.0 | 19.4 | 21.8 | 21.2 | 20.6 | | 15.0 | | | 14.9 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.58 | | | 1.00 | |
| Incremental Delay, d2 | 7.7 | 7.4 | 0.2 | 6.5 | 1.3 | 1.0 | | 1.9 | | | 3.3 | |
| Delay (s) | 31.7 | 32.4 | 19.6 | 28.3 | 22.5 | 21.6 | | 10.7 | | | 18.2 | |
| Level of Service | C | C | B | C | C | C | | B | | | B | |
| Approach Delay (s) | | 31.6 | | | 23.2 | | | 10.7 | | | 18.2 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.9 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.80 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.8% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Ave.

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✥ | | | ✥ | | | ✥ | | | ✥ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 468 | 13 | 3 | 321 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 1 | 482 | 13 | 3 | 331 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 69 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.79 | | | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | |
| vC, conflicting volume | 335 | | | 496 | | | 834 | 832 | 489 | 848 | 837 | 333 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 335 | | | 365 | | | 790 | 789 | 357 | 809 | 795 | 333 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 95 | 99 | 97 | 99 | 99 | 100 |
| cM capacity (veh/h) | 1230 | | | 952 | | | 243 | 257 | 549 | 229 | 255 | 713 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 497 | 338 | 31 | 7 |
| Volume Left | 1 | 3 | 11 | 3 |
| Volume Right | 13 | 4 | 16 | 2 |
| cSH | 1230 | 952 | 349 | 295 |
| Volume to Capacity | 0.00 | 0.00 | 0.09 | 0.02 |
| Queue Length 95th (ft) | 0 | 0 | 7 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 16.3 | 17.5 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 16.3 | 17.5 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.8 | | |
| Intersection Capacity Utilization | 36.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✥ | | | ✥ | | | ✥ | | | ✥ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 45 | 525 | 14 | 11 | 252 | 27 | 7 | 16 | 29 | 16 | 15 | 30 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 48 | 565 | 15 | 12 | 271 | 29 | 8 | 17 | 31 | 17 | 16 | 32 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 528 | | | | | | | |
| pX, platoon unblocked | 0.93 | | | | | | 0.93 | 0.93 | | 0.93 | 0.93 | 0.93 |
| vC, conflicting volume | 300 | | | 580 | | | 1018 | 992 | 572 | 1018 | 985 | 285 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 250 | | | 580 | | | 1020 | 992 | 572 | 1019 | 984 | 234 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 99 | | | 96 | 92 | 94 | 90 | 93 | 96 |
| cM capacity (veh/h) | 1239 | | | 1004 | | | 176 | 220 | 523 | 172 | 222 | 756 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 628 | 312 | 56 | 66 |
| Volume Left | 48 | 12 | 8 | 17 |
| Volume Right | 15 | 29 | 31 | 32 |
| cSH | 1239 | 1004 | 309 | 305 |
| Volume to Capacity | 0.04 | 0.01 | 0.18 | 0.22 |
| Queue Length 95th (ft) | 3 | 1 | 16 | 20 |
| Control Delay (s) | 1.1 | 0.4 | 19.2 | 20.0 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 1.1 | 0.4 | 19.2 | 20.0 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.0 | | |
| Intersection Capacity Utilization | 59.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

HCM Unsignalized Intersection Capacity Analysis
106: California Street & 14th Avenue 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 14 | 544 | 12 | 50 | 272 | 27 | 5 | 7 | 26 | 121 | 12 | 13 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 15 | 573 | 13 | 53 | 286 | 28 | 5 | 7 | 27 | 127 | 13 | 14 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 228 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 315 | | | 585 | | | 877 | 1028 | 293 | 753 | 1021 | 157 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 245 | | | 585 | | | 830 | 988 | 293 | 701 | 980 | 81 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 95 | | | 98 | 97 | 96 | 55 | 94 | 99 |
| cM capacity (veh/h) | 1280 | | | 999 | | | 229 | 224 | 710 | 282 | 226 | 930 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 301 | 299 | 196 | 172 | 40 | 154 |
| Volume Left | 15 | 0 | 53 | 0 | 5 | 127 |
| Volume Right | 0 | 13 | 0 | 28 | 27 | 14 |
| cSH | 1280 | 1700 | 999 | 1700 | 424 | 294 |
| Volume to Capacity | 0.01 | 0.18 | 0.05 | 0.10 | 0.09 | 0.52 |
| Queue Length 95th (ft) | 1 | 0 | 4 | 0 | 8 | 71 |
| Control Delay (s) | 0.5 | 0.0 | 2.7 | 0.0 | 14.4 | 29.9 |
| Lane LOS | A | | A | | B | D |
| Approach Delay (s) | 0.2 | | 1.5 | | 14.4 | 29.9 |
| Approach LOS | | | | | B | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 5.0 | | |
| Intersection Capacity Utilization | 50.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



HCM Signalized Intersection Capacity Analysis
107: California Street & Park Presidio Boulevard 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3198 | | | 4960 | | | 5002 | |
| Flt Permitted | 0.48 | 1.00 | | 0.27 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 837 | 3318 | | 472 | 3198 | | | 4960 | | | 5002 | |
| Volume (vph) | 86 | 583 | 22 | 93 | 252 | 96 | 0 | 2245 | 251 | 0 | 2048 | 97 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 89 | 601 | 23 | 96 | 260 | 99 | 0 | 2314 | 259 | 0 | 2111 | 100 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 16 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 89 | 621 | 0 | 96 | 356 | 0 | 0 | 2557 | 0 | 0 | 2205 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 256 | 1015 | | 144 | 978 | | | 2976 | | | 3001 | |
| v/s Ratio Prot | | 0.19 | | | 0.11 | | | c0.52 | | | 0.44 | |
| v/s Ratio Perm | 0.11 | | | c0.20 | | | | | | | | |
| v/c Ratio | 0.35 | 0.61 | | 0.67 | 0.36 | | | 0.86 | | | 0.73 | |
| Uniform Delay, d1 | 22.9 | 25.2 | | 25.7 | 23.0 | | | 14.0 | | | 12.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.62 | |
| Incremental Delay, d2 | 3.7 | 2.7 | | 21.8 | 1.0 | | | 3.5 | | | 0.9 | |
| Delay (s) | 26.6 | 27.9 | | 47.5 | 24.1 | | | 17.5 | | | 8.5 | |
| Level of Service | C | C | | D | C | | | B | | | A | |
| Approach Delay (s) | | 27.8 | | | 29.0 | | | 17.5 | | | 8.5 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.3 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.79 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 80.9% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

**Existing plus Project Conditions**
**Alternative 1: PTMP Alternative (Couplet)**
**AM Peak Hour**

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 556 | 13 | 15 | 270 | 1 | 3 | 1 | 39 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 604 | 14 | 16 | 293 | 1 | 3 | 1 | 42 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 295 | | | 618 | | | 948 | 943 | 611 | 985 | 949 | 294 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 295 | | | 618 | | | 948 | 943 | 611 | 985 | 949 | 294 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 91 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1278 | | | 972 | | | 235 | 260 | 497 | 206 | 257 | 750 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 621 | 311 | 47 | 12 |
| Volume Left | 2 | 16 | 3 | 4 |
| Volume Right | 14 | 1 | 42 | 3 |
| cSH | 1278 | 972 | 452 | 282 |
| Volume to Capacity | 0.00 | 0.02 | 0.10 | 0.04 |
| Queue Length 95th (ft) | 0 | 1 | 9 | 3 |
| Control Delay (s) | 0.0 | 0.6 | 13.9 | 18.3 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.6 | 13.9 | 18.3 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 40.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 584 | 13 | 13 | 256 | 3 | 2 | 2 | 37 | 75 | 48 | 28 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 2 | 608 | 14 | 14 | 267 | 3 | 2 | 2 | 39 | 78 | 50 | 29 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 624 | 283 | 43 | 157 |
| Volume Left (vph) | 2 | 14 | 2 | 78 |
| Volume Right (vph) | 14 | 3 | 39 | 29 |
| Hadj (s) | -0.01 | 0.00 | -0.53 | -0.01 |
| Departure Headway (s) | 5.0 | 5.4 | 6.1 | 6.2 |
| Degree Utilization, x | 0.86 | 0.43 | 0.07 | 0.27 |
| Capacity (veh/h) | 713 | 631 | 530 | 534 |
| Control Delay (s) | 30.3 | 12.3 | 9.5 | 11.6 |
| Approach Delay (s) | 30.3 | 12.3 | 9.5 | 11.6 |
| Approach LOS | D | B | A | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 22.3 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 53.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 56 | 635 | 5 | 139 | 265 | 129 | 4 | 71 | 40 | 1 | 2 | 3 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 58 | 655 | 5 | 143 | 273 | 133 | 4 | 73 | 41 | 1 | 2 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.93 | | | | | | 0.93 | 0.93 | | 0.93 | 0.93 | 0.93 |
| vC, conflicting volume | 406 | | | 660 | | | 1403 | 1465 | 657 | 1477 | 1402 | 340 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 362 | | | 660 | | | 1433 | 1500 | 657 | 1512 | 1431 | 291 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 95 | | | 85 | | | 95 | 21 | 91 | 96 | 98 | 100 |
| cM capacity (veh/h) | 1124 | | | 938 | | | 88 | 92 | 468 | 25 | 102 | 701 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 718 | 549 | 119 | 6 |
| Volume Left | 58 | 143 | 4 | 1 |
| Volume Right | 5 | 133 | 41 | 3 |
| cSH | 1124 | 938 | 128 | 95 |
| Volume to Capacity | 0.05 | 0.15 | 0.93 | 0.07 |
| Queue Length 95th (ft) | 4 | 13 | 153 | 5 |
| Control Delay (s) | 1.3 | 3.9 | 126.8 | 45.7 |
| Lane LOS | A | A | F | E |
| Approach Delay (s) | 1.3 | 3.9 | 126.8 | 45.7 |
| Approach LOS | | | F | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 13.2 | | |
| Intersection Capacity Utilization | 78.4% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4926 | |
| Flt Permitted | 0.58 | 1.00 | 1.00 | 0.27 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1060 | 1756 | 1492 | 475 | 1756 | 1492 | | 5012 | | | 4926 | |
| Volume (vph) | 236 | 412 | 28 | 59 | 181 | 105 | 0 | 2350 | 77 | 0 | 2058 | 352 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 241 | 420 | 29 | 60 | 185 | 107 | 0 | 2398 | 79 | 0 | 2100 | 359 |
| RTOR Reduction (vph) | 0 | 0 | 5 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 28 | 0 |
| Lane Group Flow (vph) | 241 | 420 | 24 | 60 | 185 | 105 | 0 | 2473 | 0 | 0 | 2431 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 349 | 578 | 491 | 156 | 578 | 491 | | 2889 | | | 2840 | |
| v/s Ratio Prot | | c0.24 | | | 0.11 | | | 0.49 | | | c0.49 | |
| v/s Ratio Perm | 0.23 | | 0.02 | 0.13 | | 0.07 | | | | | | |
| v/c Ratio | 0.69 | 0.73 | 0.05 | 0.38 | 0.32 | 0.21 | | 0.86 | | | 0.86 | |
| Uniform Delay, d1 | 24.7 | 25.1 | 19.4 | 21.9 | 21.4 | 20.6 | | 15.0 | | | 15.1 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.58 | | | 1.00 | |
| Incremental Delay, d2 | 10.7 | 7.8 | 0.2 | 7.0 | 1.5 | 1.0 | | 1.9 | | | 3.6 | |
| Delay (s) | 35.4 | 32.9 | 19.6 | 28.9 | 22.8 | 21.6 | | 10.7 | | | 18.6 | |
| Level of Service | D | C | B | C | C | C | | B | | | B | |
| Approach Delay (s) | | 33.2 | | | 23.5 | | | 10.7 | | | 18.6 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 17.3 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.81 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 82.6% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 475 | 13 | 3 | 332 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 1 | 490 | 13 | 3 | 342 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 69 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.79 | | | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | |
| vC, conflicting volume | 346 | | | 503 | | | 852 | 851 | 496 | 867 | 856 | 344 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 346 | | | 370 | | | 813 | 811 | 362 | 832 | 817 | 344 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 95 | 99 | 97 | 99 | 99 | 100 |
| cM capacity (veh/h) | 1218 | | | 942 | | | 234 | 248 | 542 | 220 | 246 | 703 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 504 | 349 | 31 | 7 |
| Volume Left | 1 | 3 | 11 | 3 |
| Volume Right | 13 | 4 | 16 | 2 |
| cSH | 1218 | 942 | 338 | 284 |
| Volume to Capacity | 0.00 | 0.00 | 0.09 | 0.03 |
| Queue Length 95th (ft) | 0 | 0 | 7 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 16.7 | 18.0 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 16.7 | 18.0 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.8 | | |
| Intersection Capacity Utilization | 36.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 17 | 570 | 14 | 11 | 252 | 18 | 7 | 6 | 29 | 16 | 16 | 42 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 18 | 613 | 15 | 12 | 271 | 19 | 8 | 6 | 31 | 17 | 17 | 45 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 528 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 290 | | | 628 | | | 1015 | 971 | 620 | 996 | 969 | 281 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 242 | | | 628 | | | 1016 | 969 | 620 | 995 | 967 | 231 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 96 | 97 | 94 | 91 | 93 | 94 |
| cM capacity (veh/h) | 1251 | | | 964 | | | 178 | 233 | 491 | 189 | 234 | 761 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 646 | 302 | 45 | 80 |
| Volume Left | 18 | 12 | 8 | 17 |
| Volume Right | 15 | 19 | 31 | 45 |
| cSH | 1251 | 964 | 338 | 355 |
| Volume to Capacity | 0.01 | 0.01 | 0.13 | 0.22 |
| Queue Length 95th (ft) | 1 | 1 | 11 | 21 |
| Control Delay (s) | 0.4 | 0.5 | 17.3 | 18.0 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.4 | 0.5 | 17.3 | 18.0 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.4 | | |
| Intersection Capacity Utilization | 50.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

HCM Unsignalized Intersection Capacity Analysis
106: California Street & 14th Avenue 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 59 | 544 | 12 | 50 | 267 | 32 | 1 | 24 | 26 | 121 | 12 | 13 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 62 | 573 | 13 | 53 | 281 | 34 | 1 | 25 | 27 | 127 | 13 | 14 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 228 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 315 | | | 585 | | | 969 | 1123 | 293 | 854 | 1113 | 157 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 245 | | | 585 | | | 926 | 1087 | 293 | 806 | 1076 | 81 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 95 | | | 95 | | | 99 | 87 | 96 | 40 | 93 | 99 |
| cM capacity (veh/h) | 1280 | | | 999 | | | 188 | 189 | 710 | 212 | 191 | 930 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 348 | 299 | 193 | 174 | 54 | 154 |
| Volume Left | 62 | 0 | 53 | 0 | 1 | 127 |
| Volume Right | 0 | 13 | 0 | 34 | 27 | 14 |
| cSH | 1280 | 1700 | 999 | 1700 | 301 | 226 |
| Volume to Capacity | 0.05 | 0.18 | 0.05 | 0.10 | 0.18 | 0.68 |
| Queue Length 95th (ft) | 4 | 0 | 4 | 0 | 16 | 108 |
| Control Delay (s) | 1.8 | 0.0 | 2.8 | 0.0 | 19.5 | 49.4 |
| Lane LOS | A | | A | | C | E |
| Approach Delay (s) | 1.0 | | 1.5 | | 19.5 | 49.4 |
| Approach LOS | | | | | C | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 8.0 | | |
| Intersection Capacity Utilization | 51.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



HCM Signalized Intersection Capacity Analysis
107: California Street & Park Presidio Boulevard 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3198 | | | 4960 | | | 5002 | |
| Flt Permitted | 0.48 | 1.00 | | 0.27 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 837 | 3318 | | 472 | 3198 | | | 4960 | | | 5002 | |
| Volume (vph) | 86 | 583 | 22 | 93 | 252 | 96 | 0 | 2245 | 251 | 0 | 2048 | 97 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 89 | 601 | 23 | 96 | 260 | 99 | 0 | 2314 | 259 | 0 | 2111 | 100 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 16 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 89 | 621 | 0 | 96 | 356 | 0 | 0 | 2557 | 0 | 0 | 2205 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 256 | 1015 | | 144 | 978 | | | 2976 | | | 3001 | |
| v/s Ratio Prot | | 0.19 | | | 0.11 | | | c0.52 | | | 0.44 | |
| v/s Ratio Perm | 0.11 | | | c0.20 | | | | | | | | |
| v/c Ratio | 0.35 | 0.61 | | 0.67 | 0.36 | | | 0.86 | | | 0.73 | |
| Uniform Delay, d1 | 22.9 | 25.2 | | 25.7 | 23.0 | | | 14.0 | | | 12.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.64 | |
| Incremental Delay, d2 | 3.7 | 2.7 | | 21.8 | 1.0 | | | 3.5 | | | 0.9 | |
| Delay (s) | 26.6 | 27.9 | | 47.5 | 24.1 | | | 17.5 | | | 8.6 | |
| Level of Service | C | C | | D | C | | | B | | | A | |
| Approach Delay (s) | | 27.8 | | | 29.0 | | | 17.5 | | | 8.6 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.3 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.79 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 80.9% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

**Existing plus Project Conditions**
**Alternative 2: Wings Retained/Trust Revised**
**Alternative (Couplet)**
**AM Peak Hour**

# HCM Unsignalized Intersection Capacity Analysis
## 100: Lake Street & 17th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 542 | 13 | 15 | 264 | 1 | 3 | 1 | 39 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 589 | 14 | 16 | 287 | 1 | 3 | 1 | 42 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 288 | | | 603 | | | 926 | 921 | 596 | 964 | 928 | 288 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 288 | | | 603 | | | 926 | 921 | 596 | 964 | 928 | 288 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 92 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1286 | | | 984 | | | 244 | 268 | 507 | 213 | 265 | 756 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 605 | 304 | 47 | 12 |
| Volume Left | 2 | 16 | 3 | 4 |
| Volume Right | 14 | 1 | 42 | 3 |
| cSH | 1286 | 984 | 463 | 291 |
| Volume to Capacity | 0.00 | 0.02 | 0.10 | 0.04 |
| Queue Length 95th (ft) | 0 | 1 | 8 | 3 |
| Control Delay (s) | 0.0 | 0.6 | 13.7 | 17.9 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.6 | 13.7 | 17.9 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 39.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



# HCM Unsignalized Intersection Capacity Analysis
## 101: Lake Street & 15th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 570 | 13 | 13 | 256 | 3 | 2 | 2 | 37 | 55 | 38 | 22 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 2 | 594 | 14 | 14 | 267 | 3 | 2 | 2 | 39 | 57 | 40 | 23 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 609 | 283 | 43 | 120 |
| Volume Left (vph) | 2 | 14 | 2 | 57 |
| Volume Right (vph) | 14 | 3 | 39 | 23 |
| Hadj (s) | -0.01 | 0.00 | -0.53 | -0.02 |
| Departure Headway (s) | 4.8 | 5.2 | 5.8 | 6.1 |
| Degree Utilization, x | 0.81 | 0.41 | 0.07 | 0.20 |
| Capacity (veh/h) | 735 | 660 | 547 | 533 |
| Control Delay (s) | 25.0 | 11.7 | 9.3 | 10.7 |
| Approach Delay (s) | 25.0 | 11.7 | 9.3 | 10.7 |
| Approach LOS | C | B | A | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 19.2 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 51.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
## 102: Lake Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 42 | 615 | 5 | 139 | 265 | 81 | 4 | 44 | 40 | 1 | 2 | 3 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 43 | 634 | 5 | 143 | 273 | 84 | 4 | 45 | 41 | 1 | 2 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 357 | | | 639 | | | 1329 | 1366 | 637 | 1389 | 1327 | 315 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 315 | | | 639 | | | 1350 | 1390 | 637 | 1414 | 1348 | 271 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 85 | | | 96 | 59 | 91 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1180 | | | 955 | | | 102 | 110 | 481 | 59 | 117 | 726 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 682 | 500 | 91 | 6 |
| Volume Left | 43 | 143 | 4 | 1 |
| Volume Right | 5 | 84 | 41 | 3 |
| cSH | 1180 | 955 | 169 | 157 |
| Volume to Capacity | 0.04 | 0.15 | 0.54 | 0.04 |
| Queue Length 95th (ft) | 3 | 13 | 68 | 3 |
| Control Delay (s) | 1.0 | 4.0 | 48.6 | 28.8 |
| Lane LOS | A | A | E | D |
| Approach Delay (s) | 1.0 | 4.0 | 48.6 | 28.8 |
| Approach LOS | | | E | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 5.7 | | |
| Intersection Capacity Utilization | 76.9% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
## 103: Lake Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4935 | |
| Flt Permitted | 0.60 | 1.00 | 1.00 | 0.28 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1099 | 1756 | 1492 | 488 | 1756 | 1492 | | 5012 | | | 4935 | |
| Volume (vph) | 221 | 406 | 28 | 59 | 167 | 105 | 0 | 2350 | 77 | 0 | 2058 | 318 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 226 | 414 | 29 | 60 | 170 | 107 | 0 | 2398 | 79 | 0 | 2100 | 324 |
| RTOR Reduction (vph) | 0 | 0 | 5 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 24 | 0 |
| Lane Group Flow (vph) | 226 | 414 | 24 | 60 | 170 | 105 | 0 | 2473 | 0 | 0 | 2400 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 362 | 578 | 491 | 161 | 578 | 491 | | 2889 | | | 2845 | |
| v/s Ratio Prot | | c0.24 | | | 0.10 | | | c0.49 | | | 0.49 | |
| v/s Ratio Perm | 0.21 | | 0.02 | 0.12 | | 0.07 | | | | | | |
| v/c Ratio | 0.62 | 0.72 | 0.05 | 0.37 | 0.29 | 0.21 | | 0.86 | | | 0.84 | |
| Uniform Delay, d1 | 24.1 | 25.0 | 19.4 | 21.8 | 21.2 | 20.6 | | 15.0 | | | 14.8 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.58 | | | 1.00 | |
| Incremental Delay, d2 | 7.9 | 7.4 | 0.2 | 6.5 | 1.3 | 1.0 | | 1.9 | | | 3.3 | |
| Delay (s) | 32.0 | 32.4 | 19.6 | 28.3 | 22.5 | 21.6 | | 10.7 | | | 18.1 | |
| Level of Service | C | C | B | C | C | C | | B | | | B | |
| Approach Delay (s) | | 31.7 | | | 23.2 | | | 10.7 | | | 18.1 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.8 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.80 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.8% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
104: Lake Street & Funston Ave. 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 469 | 13 | 3 | 318 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 1 | 484 | 13 | 3 | 328 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 69 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.79 | | | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | |
| vC, conflicting volume | 332 | | | 497 | | | 831 | 830 | 490 | 846 | 835 | 330 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 332 | | | 366 | | | 788 | 786 | 357 | 806 | 792 | 330 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 95 | 99 | 97 | 99 | 99 | 100 |
| cM capacity (veh/h) | 1233 | | | 951 | | | 244 | 258 | 548 | 230 | 256 | 716 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 498 | 335 | 31 | 7 |
| Volume Left | 1 | 3 | 11 | 3 |
| Volume Right | 13 | 4 | 16 | 2 |
| cSH | 1233 | 951 | 349 | 296 |
| Volume to Capacity | 0.00 | 0.00 | 0.09 | 0.02 |
| Queue Length 95th (ft) | 0 | 0 | 7 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 16.3 | 17.5 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 16.3 | 17.5 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.8 | | |
| Intersection Capacity Utilization | 36.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



HCM Unsignalized Intersection Capacity Analysis
105: California Street & 15th Avenue 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 17 | 547 | 14 | 11 | 252 | 18 | 7 | 6 | 29 | 16 | 15 | 32 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 18 | 588 | 15 | 12 | 271 | 19 | 8 | 6 | 31 | 17 | 16 | 34 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 528 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 290 | | | 603 | | | 979 | 946 | 596 | 971 | 944 | 281 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 242 | | | 603 | | | 978 | 943 | 596 | 969 | 940 | 231 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 96 | 97 | 94 | 91 | 93 | 95 |
| cM capacity (veh/h) | 1251 | | | 984 | | | 193 | 241 | 507 | 198 | 242 | 761 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 622 | 302 | 45 | 68 |
| Volume Left | 18 | 12 | 8 | 17 |
| Volume Right | 15 | 19 | 31 | 34 |
| cSH | 1251 | 984 | 355 | 341 |
| Volume to Capacity | 0.01 | 0.01 | 0.13 | 0.20 |
| Queue Length 95th (ft) | 1 | 1 | 11 | 18 |
| Control Delay (s) | 0.4 | 0.5 | 16.6 | 18.2 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.4 | 0.5 | 16.6 | 18.2 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.3 | | |
| Intersection Capacity Utilization | 48.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 36 | 544 | 12 | 50 | 267 | 32 | 1 | 20 | 26 | 121 | 12 | 13 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 38 | 573 | 13 | 53 | 281 | 34 | 1 | 21 | 27 | 127 | 13 | 14 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 228 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 315 | | | 585 | | | 921 | 1075 | 293 | 803 | 1064 | 157 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 245 | | | 585 | | | 876 | 1036 | 293 | 754 | 1026 | 81 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 95 | | | 99 | 90 | 96 | 47 | 94 | 99 |
| cM capacity (veh/h) | 1280 | | | 999 | | | 209 | 206 | 710 | 241 | 209 | 930 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 324 | 299 | 193 | 174 | 49 | 154 |
| Volume Left | 38 | 0 | 53 | 0 | 1 | 127 |
| Volume Right | 0 | 13 | 0 | 34 | 27 | 14 |
| cSH | 1280 | 1700 | 999 | 1700 | 339 | 255 |
| Volume to Capacity | 0.03 | 0.18 | 0.05 | 0.10 | 0.15 | 0.60 |
| Queue Length 95th (ft) | 2 | 0 | 4 | 0 | 13 | 89 |
| Control Delay (s) | 1.2 | 0.0 | 2.8 | 0.0 | 17.4 | 38.5 |
| Lane LOS | A | | A | | C | E |
| Approach Delay (s) | 0.6 | | 1.5 | | 17.4 | 38.5 |
| Approach LOS | | | | | C | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 6.4 | | |
| Intersection Capacity Utilization | 51.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3198 | | | 4960 | | | 5002 | |
| Flt Permitted | 0.48 | 1.00 | | 0.27 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 837 | 3318 | | 472 | 3198 | | | 4960 | | | 5002 | |
| Volume (vph) | 86 | 583 | 22 | 93 | 252 | 96 | 0 | 2245 | 251 | 0 | 2048 | 97 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 89 | 601 | 23 | 96 | 260 | 99 | 0 | 2314 | 259 | 0 | 2111 | 100 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 16 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 89 | 621 | 0 | 96 | 356 | 0 | 0 | 2557 | 0 | 0 | 2205 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 256 | 1015 | | 144 | 978 | | | 2976 | | | 3001 | |
| v/s Ratio Prot | | 0.19 | | | 0.11 | | | c0.52 | | | 0.44 | |
| v/s Ratio Perm | 0.11 | | | c0.20 | | | | | | | | |
| v/c Ratio | 0.35 | 0.61 | | 0.67 | 0.36 | | | 0.86 | | | 0.73 | |
| Uniform Delay, d1 | 22.9 | 25.2 | | 25.7 | 23.0 | | | 14.0 | | | 12.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.62 | |
| Incremental Delay, d2 | 3.7 | 2.7 | | 21.8 | 1.0 | | | 3.5 | | | 0.9 | |
| Delay (s) | 26.6 | 27.9 | | 47.5 | 24.1 | | | 17.5 | | | 8.4 | |
| Level of Service | C | C | | D | C | | | B | | | A | |
| Approach Delay (s) | | 27.8 | | | 29.0 | | | 17.5 | | | 8.4 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.3 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.79 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 80.9% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

**Existing plus Project Conditions**
**Alternative 3: Wings Removed Alternative**
**(Couplet)**
**AM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 538 | 13 | 15 | 265 | 1 | 3 | 1 | 39 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 585 | 14 | 16 | 288 | 1 | 3 | 1 | 42 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 289 | | | 599 | | | 923 | 918 | 592 | 960 | 924 | 289 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 289 | | | 599 | | | 923 | 918 | 592 | 960 | 924 | 289 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 92 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1284 | | | 988 | | | 245 | 269 | 510 | 215 | 266 | 755 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 601 | 305 | 47 | 12 |
| Volume Left | 2 | 16 | 3 | 4 |
| Volume Right | 14 | 1 | 42 | 3 |
| cSH | 1284 | 988 | 465 | 292 |
| Volume to Capacity | 0.00 | 0.02 | 0.10 | 0.04 |
| Queue Length 95th (ft) | 0 | 1 | 8 | 3 |
| Control Delay (s) | 0.0 | 0.6 | 13.6 | 17.8 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.6 | 13.6 | 17.8 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 39.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 566 | 13 | 13 | 256 | 3 | 2 | 2 | 37 | 58 | 39 | 23 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 2 | 590 | 14 | 14 | 267 | 3 | 2 | 2 | 39 | 60 | 41 | 24 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 605 | 283 | 43 | 125 |
| Volume Left (vph) | 2 | 14 | 2 | 60 |
| Volume Right (vph) | 14 | 3 | 39 | 24 |
| Hadj (s) | -0.01 | 0.00 | -0.53 | -0.02 |
| Departure Headway (s) | 4.8 | 5.2 | 5.8 | 6.1 |
| Degree Utilization, x | 0.81 | 0.41 | 0.07 | 0.21 |
| Capacity (veh/h) | 732 | 657 | 545 | 533 |
| Control Delay (s) | 24.9 | 11.8 | 9.3 | 10.8 |
| Approach Delay (s) | 24.9 | 11.8 | 9.3 | 10.8 |
| Approach LOS | C | B | A | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 19.1 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 51.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
102: Lake Street & 14th Avenue 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 38 | 618 | 5 | 139 | 265 | 69 | 4 | 38 | 40 | 1 | 2 | 3 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 39 | 637 | 5 | 143 | 273 | 71 | 4 | 39 | 41 | 1 | 2 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 344 | | | 642 | | | 1318 | 1349 | 640 | 1374 | 1316 | 309 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 304 | | | 642 | | | 1337 | 1371 | 640 | 1397 | 1335 | 266 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 85 | | | 96 | 66 | 91 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1195 | | | 952 | | | 105 | 114 | 479 | 66 | 120 | 732 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 681 | 488 | 85 | 6 |
| Volume Left | 39 | 143 | 4 | 1 |
| Volume Right | 5 | 71 | 41 | 3 |
| cSH | 1195 | 952 | 181 | 167 |
| Volume to Capacity | 0.03 | 0.15 | 0.47 | 0.04 |
| Queue Length 95th (ft) | 3 | 13 | 56 | 3 |
| Control Delay (s) | 0.9 | 4.0 | 41.4 | 27.4 |
| Lane LOS | A | A | E | D |
| Approach Delay (s) | 0.9 | 4.0 | 41.4 | 27.4 |
| Approach LOS | | | E | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 4.9 | | |
| Intersection Capacity Utilization | 75.8% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
103: Lake Street & Park Presidio Boulevard 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4937 | |
| Flt Permitted | 0.61 | 1.00 | 1.00 | 0.28 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1110 | 1756 | 1492 | 486 | 1756 | 1492 | | 5012 | | | 4937 | |
| Volume (vph) | 224 | 407 | 28 | 59 | 163 | 105 | 0 | 2350 | 77 | 0 | 2058 | 310 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 229 | 415 | 29 | 60 | 166 | 107 | 0 | 2398 | 79 | 0 | 2100 | 316 |
| RTOR Reduction (vph) | 0 | 0 | 5 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 24 | 0 |
| Lane Group Flow (vph) | 229 | 415 | 24 | 60 | 166 | 105 | 0 | 2473 | 0 | 0 | 2392 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 366 | 578 | 491 | 160 | 578 | 491 | | 2889 | | | 2846 | |
| v/s Ratio Prot | | c0.24 | | | 0.09 | | | c0.49 | | | 0.48 | |
| v/s Ratio Perm | 0.21 | | 0.02 | 0.12 | | 0.07 | | | | | | |
| v/c Ratio | 0.63 | 0.72 | 0.05 | 0.38 | 0.29 | 0.21 | | 0.86 | | | 0.84 | |
| Uniform Delay, d1 | 24.1 | 25.0 | 19.4 | 21.8 | 21.1 | 20.6 | | 15.0 | | | 14.8 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.58 | | | 1.00 | |
| Incremental Delay, d2 | 7.9 | 7.5 | 0.2 | 6.6 | 1.2 | 1.0 | | 1.9 | | | 3.2 | |
| Delay (s) | 31.9 | 32.5 | 19.6 | 28.4 | 22.4 | 21.6 | | 10.7 | | | 18.0 | |
| Level of Service | C | C | B | C | C | C | | B | | | B | |
| Approach Delay (s) | | 31.8 | | | 23.2 | | | 10.7 | | | 18.0 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.8 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.81 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.9% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 470 | 13 | 3 | 314 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 1 | 485 | 13 | 3 | 324 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 69 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.79 | | | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | |
| vC, conflicting volume | 328 | | | 498 | | | 828 | 827 | 491 | 843 | 832 | 326 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 328 | | | 367 | | | 783 | 782 | 358 | 802 | 788 | 326 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 95 | 99 | 97 | 99 | 99 | 100 |
| cM capacity (veh/h) | 1237 | | | 949 | | | 245 | 259 | 547 | 231 | 257 | 720 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 499 | 331 | 31 | 7 |
| Volume Left | 1 | 3 | 11 | 3 |
| Volume Right | 13 | 4 | 16 | 2 |
| cSH | 1237 | 949 | 350 | 297 |
| Volume to Capacity | 0.00 | 0.00 | 0.09 | 0.02 |
| Queue Length 95th (ft) | 0 | 0 | 7 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 16.3 | 17.4 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 16.3 | 17.4 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.8 | | |
| Intersection Capacity Utilization | 36.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 17 | 542 | 14 | 11 | 252 | 18 | 7 | 6 | 29 | 16 | 16 | 34 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 18 | 583 | 15 | 12 | 271 | 19 | 8 | 6 | 31 | 17 | 17 | 37 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 528 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 290 | | | 598 | | | 976 | 941 | 590 | 966 | 939 | 281 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 242 | | | 598 | | | 975 | 937 | 590 | 963 | 935 | 231 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 96 | 97 | 94 | 91 | 93 | 95 |
| cM capacity (veh/h) | 1251 | | | 989 | | | 192 | 243 | 511 | 200 | 244 | 761 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 616 | 302 | 45 | 71 |
| Volume Left | 18 | 12 | 8 | 17 |
| Volume Right | 15 | 19 | 31 | 37 |
| cSH | 1251 | 989 | 357 | 347 |
| Volume to Capacity | 0.01 | 0.01 | 0.13 | 0.20 |
| Queue Length 95th (ft) | 1 | 1 | 11 | 19 |
| Control Delay (s) | 0.4 | 0.5 | 16.6 | 18.0 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.4 | 0.5 | 16.6 | 18.0 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.3 | | |
| Intersection Capacity Utilization | 48.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 31 | 544 | 12 | 50 | 267 | 32 | 1 | 19 | 26 | 121 | 12 | 13 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 33 | 573 | 13 | 53 | 281 | 34 | 1 | 20 | 27 | 127 | 13 | 14 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 228 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 315 | | | 585 | | | 910 | 1064 | 293 | 792 | 1054 | 157 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 245 | | | 585 | | | 865 | 1026 | 293 | 742 | 1015 | 81 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 95 | | | 100 | 90 | 96 | 49 | 94 | 99 |
| cM capacity (veh/h) | 1280 | | | 999 | | | 213 | 210 | 710 | 248 | 213 | 930 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 319 | 299 | 193 | 174 | 48 | 154 |
| Volume Left | 33 | 0 | 53 | 0 | 1 | 127 |
| Volume Right | 0 | 13 | 0 | 34 | 27 | 14 |
| cSH | 1280 | 1700 | 999 | 1700 | 349 | 262 |
| Volume to Capacity | 0.03 | 0.18 | 0.05 | 0.10 | 0.14 | 0.59 |
| Queue Length 95th (ft) | 2 | 0 | 4 | 0 | 12 | 85 |
| Control Delay (s) | 1.0 | 0.0 | 2.8 | 0.0 | 17.0 | 36.6 |
| Lane LOS | A | | A | | C | E |
| Approach Delay (s) | 0.5 | | 1.5 | | 17.0 | 36.6 |
| Approach LOS | | | | | C | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 6.2 | | |
| Intersection Capacity Utilization | 51.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3198 | | | 4960 | | | 5002 | |
| Flt Permitted | 0.48 | 1.00 | | 0.27 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 837 | 3318 | | 472 | 3198 | | | 4960 | | | 5002 | |
| Volume (vph) | 86 | 583 | 22 | 93 | 252 | 96 | 0 | 2245 | 251 | 0 | 2048 | 97 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 89 | 601 | 23 | 96 | 260 | 99 | 0 | 2314 | 259 | 0 | 2111 | 100 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 16 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 89 | 621 | 0 | 96 | 356 | 0 | 0 | 2557 | 0 | 0 | 2205 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 256 | 1015 | | 144 | 978 | | | 2976 | | | 3001 | |
| v/s Ratio Prot | | 0.19 | | | 0.11 | | | c0.52 | | | 0.44 | |
| v/s Ratio Perm | 0.11 | | | c0.20 | | | | | | | | |
| v/c Ratio | 0.35 | 0.61 | | 0.67 | 0.36 | | | 0.86 | | | 0.73 | |
| Uniform Delay, d1 | 22.9 | 25.2 | | 25.7 | 23.0 | | | 14.0 | | | 12.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.61 | |
| Incremental Delay, d2 | 3.7 | 2.7 | | 21.8 | 1.0 | | | 3.5 | | | 0.9 | |
| Delay (s) | 26.6 | 27.9 | | 47.5 | 24.1 | | | 17.5 | | | 8.4 | |
| Level of Service | C | C | | D | C | | | B | | | A | |
| Approach Delay (s) | | 27.8 | | | 29.0 | | | 17.5 | | | 8.4 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.2 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.79 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 80.9% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

**Existing plus Project Conditions**
**Alternative 4: Battery Caulfield Alternative (Couplet)**
**AM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 537 | 13 | 15 | 261 | 1 | 3 | 1 | 39 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 584 | 14 | 16 | 284 | 1 | 3 | 1 | 42 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 285 | | | 598 | | | 917 | 912 | 591 | 955 | 919 | 284 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 285 | | | 598 | | | 917 | 912 | 591 | 955 | 919 | 284 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 92 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1289 | | | 989 | | | 247 | 271 | 511 | 216 | 268 | 760 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 600 | 301 | 47 | 12 |
| Volume Left | 2 | 16 | 3 | 4 |
| Volume Right | 14 | 1 | 42 | 3 |
| cSH | 1289 | 989 | 466 | 295 |
| Volume to Capacity | 0.00 | 0.02 | 0.10 | 0.04 |
| Queue Length 95th (ft) | 0 | 1 | 8 | 3 |
| Control Delay (s) | 0.0 | 0.6 | 13.6 | 17.7 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.6 | 13.6 | 17.7 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 39.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 565 | 13 | 13 | 256 | 3 | 2 | 2 | 37 | 44 | 33 | 19 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 2 | 589 | 14 | 14 | 267 | 3 | 2 | 2 | 39 | 46 | 34 | 20 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 604 | 283 | 43 | 100 |
| Volume Left (vph) | 2 | 14 | 2 | 46 |
| Volume Right (vph) | 14 | 3 | 39 | 20 |
| Hadj (s) | -0.01 | 0.00 | -0.53 | -0.03 |
| Departure Headway (s) | 4.7 | 5.1 | 5.7 | 6.1 |
| Degree Utilization, x | 0.79 | 0.40 | 0.07 | 0.17 |
| Capacity (veh/h) | 747 | 675 | 556 | 534 |
| Control Delay (s) | 23.0 | 11.5 | 9.1 | 10.3 |
| Approach Delay (s) | 23.0 | 11.5 | 9.1 | 10.3 |
| Approach LOS | C | B | A | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 18.0 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 49.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 37 | 604 | 5 | 139 | 265 | 65 | 4 | 35 | 40 | 1 | 2 | 3 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 38 | 623 | 5 | 143 | 273 | 67 | 4 | 36 | 41 | 1 | 2 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 340 | | | 628 | | | 1299 | 1328 | 625 | 1354 | 1297 | 307 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 300 | | | 628 | | | 1317 | 1348 | 625 | 1376 | 1316 | 264 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 85 | | | 96 | 69 | 92 | 99 | 98 | 100 |
| cM capacity (veh/h) | 1199 | | | 964 | | | 109 | 118 | 488 | 71 | 124 | 734 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 666 | 484 | 81 | 6 |
| Volume Left | 38 | 143 | 4 | 1 |
| Volume Right | 5 | 67 | 41 | 3 |
| cSH | 1199 | 964 | 190 | 175 |
| Volume to Capacity | 0.03 | 0.15 | 0.43 | 0.04 |
| Queue Length 95th (ft) | 2 | 13 | 49 | 3 |
| Control Delay (s) | 0.8 | 4.0 | 37.3 | 26.3 |
| Lane LOS | A | A | E | D |
| Approach Delay (s) | 0.8 | 4.0 | 37.3 | 26.3 |
| Approach LOS | | | E | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 4.6 | | |
| Intersection Capacity Utilization | 74.6% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4938 | |
| Flt Permitted | 0.61 | 1.00 | 1.00 | 0.28 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1113 | 1756 | 1492 | 495 | 1756 | 1492 | | 5012 | | | 4938 | |
| Volume (vph) | 214 | 403 | 28 | 59 | 162 | 105 | 0 | 2350 | 77 | 0 | 2058 | 307 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 218 | 411 | 29 | 60 | 165 | 107 | 0 | 2398 | 79 | 0 | 2100 | 313 |
| RTOR Reduction (vph) | 0 | 0 | 5 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 23 | 0 |
| Lane Group Flow (vph) | 218 | 411 | 24 | 60 | 165 | 105 | 0 | 2473 | 0 | 0 | 2390 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 367 | 578 | 491 | 163 | 578 | 491 | | 2889 | | | 2847 | |
| v/s Ratio Prot | | c0.23 | | | 0.09 | | | c0.49 | | | 0.48 | |
| v/s Ratio Perm | 0.20 | | 0.02 | 0.12 | | 0.07 | | | | | | |
| v/c Ratio | 0.59 | 0.71 | 0.05 | 0.37 | 0.29 | 0.21 | | 0.86 | | | 0.84 | |
| Uniform Delay, d1 | 23.8 | 25.0 | 19.4 | 21.7 | 21.1 | 20.6 | | 15.0 | | | 14.8 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.58 | | | 1.00 | |
| Incremental Delay, d2 | 6.9 | 7.3 | 0.2 | 6.3 | 1.2 | 1.0 | | 1.9 | | | 3.2 | |
| Delay (s) | 30.7 | 32.2 | 19.6 | 28.0 | 22.3 | 21.6 | | 10.7 | | | 17.9 | |
| Level of Service | C | C | B | C | C | C | | B | | | B | |
| Approach Delay (s) | | 31.2 | | | 23.1 | | | 10.7 | | | 17.9 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.7 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.80 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.7% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Ave.

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 466 | 13 | 3 | 313 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 1 | 480 | 13 | 3 | 323 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 69 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.80 | | | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | |
| vC, conflicting volume | 327 | | | 494 | | | 823 | 822 | 487 | 838 | 827 | 325 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 327 | | | 364 | | | 778 | 776 | 355 | 796 | 782 | 325 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 95 | 99 | 97 | 99 | 99 | 100 |
| cM capacity (veh/h) | 1238 | | | 955 | | | 248 | 262 | 551 | 234 | 260 | 721 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 495 | 330 | 31 | 7 |
| Volume Left | 1 | 3 | 11 | 3 |
| Volume Right | 13 | 4 | 16 | 2 |
| cSH | 1238 | 955 | 354 | 301 |
| Volume to Capacity | 0.00 | 0.00 | 0.09 | 0.02 |
| Queue Length 95th (ft) | 0 | 0 | 7 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 16.1 | 17.3 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 16.1 | 17.3 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.8 | | |
| Intersection Capacity Utilization | 35.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 17 | 540 | 14 | 11 | 252 | 18 | 7 | 6 | 29 | 16 | 15 | 28 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 18 | 581 | 15 | 12 | 271 | 19 | 8 | 6 | 31 | 17 | 16 | 30 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 528 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 290 | | | 596 | | | 967 | 939 | 588 | 963 | 937 | 281 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 242 | | | 596 | | | 965 | 935 | 588 | 961 | 932 | 231 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 96 | 97 | 94 | 91 | 93 | 96 |
| cM capacity (veh/h) | 1251 | | | 991 | | | 198 | 244 | 512 | 201 | 245 | 761 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 614 | 302 | 45 | 63 |
| Volume Left | 18 | 12 | 8 | 17 |
| Volume Right | 15 | 19 | 31 | 30 |
| cSH | 1251 | 991 | 360 | 332 |
| Volume to Capacity | 0.01 | 0.01 | 0.13 | 0.19 |
| Queue Length 95th (ft) | 1 | 1 | 11 | 17 |
| Control Delay (s) | 0.4 | 0.5 | 16.4 | 18.4 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.4 | 0.5 | 16.4 | 18.4 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.2 | | |
| Intersection Capacity Utilization | 47.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 29 | 544 | 12 | 50 | 267 | 32 | 1 | 19 | 26 | 121 | 12 | 13 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 31 | 573 | 13 | 53 | 281 | 34 | 1 | 20 | 27 | 127 | 13 | 14 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 228 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 315 | | | 585 | | | 906 | 1060 | 293 | 788 | 1049 | 157 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 245 | | | 585 | | | 861 | 1021 | 293 | 738 | 1010 | 81 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 95 | | | 100 | 91 | 96 | 49 | 94 | 99 |
| cM capacity (veh/h) | 1280 | | | 999 | | | 215 | 211 | 710 | 250 | 215 | 930 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 317 | 299 | 193 | 174 | 48 | 154 |
| Volume Left | 31 | 0 | 53 | 0 | 1 | 127 |
| Volume Right | 0 | 13 | 0 | 34 | 27 | 14 |
| cSH | 1280 | 1700 | 999 | 1700 | 351 | 264 |
| Volume to Capacity | 0.02 | 0.18 | 0.05 | 0.10 | 0.14 | 0.58 |
| Queue Length 95th (ft) | 2 | 0 | 4 | 0 | 12 | 84 |
| Control Delay (s) | 1.0 | 0.0 | 2.8 | 0.0 | 16.9 | 36.0 |
| Lane LOS | A | | A | | C | E |
| Approach Delay (s) | 0.5 | | 1.5 | | 16.9 | 36.0 |
| Approach LOS | | | | | C | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 6.1 | | |
| Intersection Capacity Utilization | 50.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3198 | | | 4960 | | | 5002 | |
| Flt Permitted | 0.48 | 1.00 | | 0.27 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 837 | 3318 | | 472 | 3198 | | | 4960 | | | 5002 | |
| Volume (vph) | 86 | 583 | 22 | 93 | 252 | 96 | 0 | 2245 | 251 | 0 | 2048 | 97 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 89 | 601 | 23 | 96 | 260 | 99 | 0 | 2314 | 259 | 0 | 2111 | 100 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 16 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 89 | 621 | 0 | 96 | 356 | 0 | 0 | 2557 | 0 | 0 | 2205 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 256 | 1015 | | 144 | 978 | | | 2976 | | | 3001 | |
| v/s Ratio Prot | | 0.19 | | | 0.11 | | | c0.52 | | | 0.44 | |
| v/s Ratio Perm | 0.11 | | | c0.20 | | | | | | | | |
| v/c Ratio | 0.35 | 0.61 | | 0.67 | 0.36 | | | 0.86 | | | 0.73 | |
| Uniform Delay, d1 | 22.9 | 25.2 | | 25.7 | 23.0 | | | 14.0 | | | 12.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.61 | |
| Incremental Delay, d2 | 3.7 | 2.7 | | 21.8 | 1.0 | | | 3.5 | | | 0.9 | |
| Delay (s) | 26.6 | 27.9 | | 47.5 | 24.1 | | | 17.5 | | | 8.3 | |
| Level of Service | C | C | | D | C | | | B | | | A | |
| Approach Delay (s) | | 27.8 | | | 29.0 | | | 17.5 | | | 8.3 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.2 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.79 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 80.9% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

**Existing plus Project Conditions**
**Requested No Action Alternative**
**PM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Street

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 289 | 10 | 25 | 415 | 4 | 4 | 1 | 25 | 7 | 3 | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 307 | 11 | 27 | 441 | 4 | 4 | 1 | 27 | 7 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 446 | | | 318 | | | 818 | 816 | 313 | 841 | 819 | 444 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 446 | | | 318 | | | 818 | 816 | 313 | 841 | 819 | 444 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 96 | 97 | 99 | 100 |
| cM capacity (veh/h) | 1125 | | | 1253 | | | 289 | 306 | 732 | 271 | 305 | 618 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 320 | 472 | 32 | 13 |
| Volume Left | 2 | 27 | 4 | 7 |
| Volume Right | 11 | 4 | 27 | 2 |
| cSH | 1125 | 1253 | 585 | 308 |
| Volume to Capacity | 0.00 | 0.02 | 0.05 | 0.04 |
| Queue Length 95th (ft) | 0 | 2 | 4 | 3 |
| Control Delay (s) | 0.1 | 0.7 | 11.5 | 17.2 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 11.5 | 17.2 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 49.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 30 | 286 | 5 | 18 | 402 | 61 | 8 | 46 | 17 | 97 | 39 | 34 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 32 | 304 | 5 | 19 | 428 | 65 | 9 | 49 | 18 | 103 | 41 | 36 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 341 | 512 | 76 | 181 |
| Volume Left (vph) | 32 | 19 | 9 | 103 |
| Volume Right (vph) | 5 | 65 | 18 | 36 |
| Hadj (s) | 0.01 | -0.07 | -0.12 | -0.01 |
| Departure Headway (s) | 5.5 | 5.2 | 6.5 | 6.3 |
| Degree Utilization, x | 0.53 | 0.74 | 0.14 | 0.32 |
| Capacity (veh/h) | 614 | 669 | 466 | 500 |
| Control Delay (s) | 14.5 | 21.7 | 10.5 | 12.2 |
| Approach Delay (s) | 14.5 | 21.7 | 10.5 | 12.2 |
| Approach LOS | B | C | B | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 17.2 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 51.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 396 | 3 | 118 | 478 | 5 | 2 | 1 | 49 | 5 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 1 | 421 | 3 | 126 | 509 | 5 | 2 | 1 | 52 | 5 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.86 | | | | | | 0.86 | 0.86 | | 0.86 | 0.86 | 0.86 |
| vC, conflicting volume | 514 | | | 424 | | | 1189 | 1190 | 423 | 1240 | 1189 | 511 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 435 | | | 424 | | | 1219 | 1221 | 423 | 1279 | 1219 | 432 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 89 | | | 98 | 99 | 92 | 95 | 99 | 100 |
| cM capacity (veh/h) | 977 | | | 1146 | | | 124 | 139 | 635 | 104 | 139 | 540 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 426 | 639 | 55 | 7 |
| Volume Left | 1 | 126 | 2 | 5 |
| Volume Right | 3 | 5 | 52 | 1 |
| cSH | 977 | 1146 | 518 | 122 |
| Volume to Capacity | 0.00 | 0.11 | 0.11 | 0.06 |
| Queue Length 95th (ft) | 0 | 9 | 9 | 5 |
| Control Delay (s) | 0.0 | 2.8 | 12.8 | 36.3 |
| Lane LOS | A | A | B | E |
| Approach Delay (s) | 0.0 | 2.8 | 12.8 | 36.3 |
| Approach LOS | | | B | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.4 | | |
| Intersection Capacity Utilization | 66.4% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4947 | |
| Flt Permitted | 0.41 | 1.00 | 1.00 | 0.46 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 748 | 1756 | 1492 | 799 | 1756 | 1492 | | 5012 | | | 4947 | |
| Volume (vph) | 159 | 266 | 25 | 73 | 298 | 142 | 0 | 2174 | 72 | 0 | 2265 | 302 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 166 | 277 | 26 | 76 | 310 | 148 | 0 | 2265 | 75 | 0 | 2359 | 315 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 20 | 0 |
| Lane Group Flow (vph) | 166 | 277 | 23 | 76 | 310 | 145 | 0 | 2336 | 0 | 0 | 2654 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 246 | 578 | 491 | 263 | 578 | 491 | | 2889 | | | 2852 | |
| v/s Ratio Prot | | 0.16 | | | 0.18 | | | 0.47 | | | c0.54 | |
| v/s Ratio Perm | c0.22 | | 0.02 | 0.10 | | 0.10 | | | | | | |
| v/c Ratio | 0.67 | 0.48 | 0.05 | 0.29 | 0.54 | 0.29 | | 0.81 | | | 0.93 | |
| Uniform Delay, d1 | 24.6 | 22.7 | 19.4 | 21.1 | 23.2 | 21.2 | | 14.3 | | | 16.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.69 | | | 1.00 | |
| Incremental Delay, d2 | 13.9 | 2.8 | 0.2 | 2.8 | 3.5 | 1.5 | | 1.2 | | | 6.9 | |
| Delay (s) | 38.4 | 25.5 | 19.6 | 23.9 | 26.8 | 22.7 | | 11.1 | | | 23.4 | |
| Level of Service | D | C | B | C | C | C | | B | | | C | |
| Approach Delay (s) | | 29.8 | | | 25.2 | | | 11.1 | | | 23.4 | |
| Approach LOS | | C | | | C | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 19.3 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.84 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 85.0% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 13 | 319 | 6 | 7 | 491 | 5 | 18 | 1 | 16 | 1 | 1 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 13 | 326 | 6 | 7 | 501 | 5 | 18 | 1 | 16 | 1 | 1 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 79 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.88 | | | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| vC, conflicting volume | 506 | | | 332 | | | 878 | 876 | 329 | 890 | 876 | 504 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 506 | | | 238 | | | 860 | 858 | 234 | 874 | 859 | 504 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 92 | 100 | 98 | 100 | 100 | 99 |
| cM capacity (veh/h) | 1064 | | | 1171 | | | 238 | 255 | 710 | 229 | 255 | 572 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 345 | 513 | 36 | 6 |
| Volume Left | 13 | 7 | 18 | 1 |
| Volume Right | 6 | 5 | 16 | 4 |
| cSH | 1064 | 1171 | 343 | 393 |
| Volume to Capacity | 0.01 | 0.01 | 0.10 | 0.02 |
| Queue Length 95th (ft) | 1 | 0 | 9 | 1 |
| Control Delay (s) | 0.4 | 0.2 | 16.7 | 14.3 |
| Lane LOS | A | A | C | B |
| Approach Delay (s) | 0.4 | 0.2 | 16.7 | 14.3 |
| Approach LOS | | | C | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.0 | | |
| Intersection Capacity Utilization | 40.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 36 | 385 | 7 | 16 | 389 | 24 | 8 | 11 | 30 | 19 | 17 | 27 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 37 | 393 | 7 | 16 | 397 | 24 | 8 | 11 | 31 | 19 | 17 | 28 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 524 | | | | | | | |
| pX, platoon unblocked | 0.88 | | | | | | 0.88 | 0.88 | | 0.88 | 0.88 | 0.88 |
| vC, conflicting volume | 421 | | | 400 | | | 948 | 924 | 396 | 948 | 915 | 409 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 346 | | | 400 | | | 941 | 914 | 396 | 941 | 904 | 332 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 99 | | | 96 | 95 | 95 | 90 | 93 | 96 |
| cM capacity (veh/h) | 1083 | | | 1170 | | | 189 | 232 | 657 | 192 | 235 | 632 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 437 | 438 | 50 | 64 |
| Volume Left | 37 | 16 | 8 | 19 |
| Volume Right | 7 | 24 | 31 | 28 |
| cSH | 1083 | 1170 | 362 | 294 |
| Volume to Capacity | 0.03 | 0.01 | 0.14 | 0.22 |
| Queue Length 95th (ft) | 3 | 1 | 12 | 20 |
| Control Delay (s) | 1.1 | 0.4 | 16.5 | 20.6 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 1.1 | 0.4 | 16.5 | 20.6 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.8 | | |
| Intersection Capacity Utilization | 48.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 15 | 413 | 6 | 62 | 418 | 32 | 5 | 5 | 30 | 93 | 23 | 6 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 16 | 449 | 7 | 67 | 454 | 35 | 5 | 5 | 33 | 101 | 25 | 7 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 224 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 489 | | | 455 | | | 866 | 1109 | 228 | 899 | 1095 | 245 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 352 | | | 455 | | | 763 | 1028 | 228 | 799 | 1012 | 85 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 94 | | | 98 | 97 | 96 | 56 | 88 | 99 |
| cM capacity (veh/h) | 1117 | | | 1116 | | | 232 | 200 | 781 | 227 | 205 | 883 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 241 | 231 | 295 | 262 | 43 | 133 |
| Volume Left | 16 | 0 | 67 | 0 | 5 | 101 |
| Volume Right | 0 | 7 | 0 | 35 | 33 | 7 |
| cSH | 1117 | 1700 | 1116 | 1700 | 471 | 231 |
| Volume to Capacity | 0.01 | 0.14 | 0.06 | 0.15 | 0.09 | 0.57 |
| Queue Length 95th (ft) | 1 | 0 | 5 | 0 | 8 | 80 |
| Control Delay (s) | 0.7 | 0.0 | 2.4 | 0.0 | 13.4 | 39.7 |
| Lane LOS | A | | A | | B | E |
| Approach Delay (s) | 0.4 | | 1.3 | | 13.4 | 39.7 |
| Approach LOS | | | | | B | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 5.6 | | |
| Intersection Capacity Utilization | 49.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| 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 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3303 | | 1668 | 3216 | | | 4968 | | | 4999 | |
| Flt Permitted | 0.38 | 1.00 | | 0.41 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 664 | 3303 | | 726 | 3216 | | | 4968 | | | 4999 | |
| Volume (vph) | 66 | 439 | 31 | 153 | 397 | 125 | 0 | 2055 | 204 | 0 | 2248 | 115 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 68 | 453 | 32 | 158 | 409 | 129 | 0 | 2119 | 210 | 0 | 2318 | 119 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 14 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 68 | 484 | 0 | 158 | 536 | 0 | 0 | 2315 | 0 | 0 | 2431 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Effective Green, g (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | | | 0.51 | | | 0.51 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 266 | 1321 | | 290 | 1286 | | | 2513 | | | 2529 | |
| v/s Ratio Prot | | 0.15 | | | 0.17 | | | 0.47 | | | c0.49 | |
| v/s Ratio Perm | 0.10 | | | c0.22 | | | | | | | | |
| v/c Ratio | 0.26 | 0.37 | | 0.54 | 0.42 | | | 0.92 | | | 0.96 | |
| Uniform Delay, d1 | 17.0 | 17.9 | | 19.6 | 18.4 | | | 19.4 | | | 20.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.69 | |
| Incremental Delay, d2 | 2.3 | 0.8 | | 7.2 | 1.0 | | | 7.0 | | | 5.5 | |
| Delay (s) | 19.4 | 18.7 | | 26.7 | 19.4 | | | 26.4 | | | 19.5 | |
| Level of Service | B | B | | C | B | | | C | | | B | |
| Approach Delay (s) | | 18.8 | | | 21.0 | | | 26.4 | | | 19.5 | |
| Approach LOS | | B | | | C | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 22.3 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.78 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 77.6% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

**Existing plus Project Conditions**
**Alternative 1: PTMP Alternative (Couplet)**
**PM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Street

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 310 | 10 | 25 | 432 | 4 | 4 | 1 | 25 | 7 | 3 | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 330 | 11 | 27 | 460 | 4 | 4 | 1 | 27 | 7 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 464 | | | 340 | | | 858 | 856 | 335 | 881 | 860 | 462 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 464 | | | 340 | | | 858 | 856 | 335 | 881 | 860 | 462 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 98 | 100 | 96 | 97 | 99 | 100 |
| cM capacity (veh/h) | 1108 | | | 1230 | | | 271 | 290 | 711 | 254 | 289 | 604 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 343 | 490 | 32 | 13 |
| Volume Left | 2 | 27 | 4 | 7 |
| Volume Right | 11 | 4 | 27 | 2 |
| cSH | 1108 | 1230 | 562 | 291 |
| Volume to Capacity | 0.00 | 0.02 | 0.06 | 0.04 |
| Queue Length 95th (ft) | 0 | 2 | 5 | 3 |
| Control Delay (s) | 0.1 | 0.7 | 11.8 | 17.9 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 11.8 | 17.9 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 50.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 335 | 5 | 18 | 402 | 4 | 8 | 4 | 17 | 164 | 71 | 51 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 356 | 5 | 19 | 428 | 4 | 9 | 4 | 18 | 174 | 76 | 54 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 364 | 451 | 31 | 304 |
| Volume Left (vph) | 2 | 19 | 9 | 174 |
| Volume Right (vph) | 5 | 4 | 18 | 54 |
| Hadj (s) | -0.01 | 0.00 | -0.30 | 0.01 |
| Departure Headway (s) | 5.8 | 5.7 | 6.8 | 6.2 |
| Degree Utilization, x | 0.59 | 0.71 | 0.06 | 0.53 |
| Capacity (veh/h) | 591 | 616 | 421 | 534 |
| Control Delay (s) | 16.6 | 21.3 | 10.2 | 16.0 |
| Approach Delay (s) | 16.6 | 21.3 | 10.2 | 16.0 |
| Approach LOS | C | C | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 18.1 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 63.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 50 | 463 | 3 | 118 | 421 | 145 | 2 | 83 | 49 | 5 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 53 | 493 | 3 | 126 | 448 | 154 | 2 | 88 | 52 | 5 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.85 | | | | | | 0.85 | 0.85 | | 0.85 | 0.85 | 0.85 |
| vC, conflicting volume | 602 | | | 496 | | | 1378 | 1454 | 494 | 1473 | 1378 | 525 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 530 | | | 496 | | | 1447 | 1536 | 494 | 1558 | 1447 | 439 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 94 | | | 88 | | | 97 | 0 | 91 | 0 | 99 | 100 |
| cM capacity (veh/h) | 887 | | | 1078 | | | 81 | 82 | 579 | 0 | 93 | 527 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 549 | 728 | 143 | 7 |
| Volume Left | 53 | 126 | 2 | 5 |
| Volume Right | 3 | 154 | 52 | 1 |
| cSH | 887 | 1078 | 120 | 0 |
| Volume to Capacity | 0.06 | 0.12 | 1.19 | Err |
| Queue Length 95th (ft) | 5 | 10 | 221 | Err |
| Control Delay (s) | 1.6 | 2.8 | 210.3 | Err |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 1.6 | 2.8 | 210.3 | Err |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | Err | | |
| Intersection Capacity Utilization | 75.1% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4931 | |
| Flt Permitted | 0.38 | 1.00 | 1.00 | 0.43 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 695 | 1756 | 1492 | 752 | 1756 | 1492 | | 5012 | | | 4931 | |
| Volume (vph) | 207 | 285 | 25 | 73 | 319 | 142 | 0 | 2174 | 72 | 0 | 2265 | 365 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 216 | 297 | 26 | 76 | 332 | 148 | 0 | 2265 | 75 | 0 | 2359 | 380 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 26 | 0 |
| Lane Group Flow (vph) | 216 | 297 | 23 | 76 | 332 | 145 | 0 | 2336 | 0 | 0 | 2713 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 229 | 578 | 491 | 248 | 578 | 491 | | 2889 | | | 2843 | |
| v/s Ratio Prot | | 0.17 | | | 0.19 | | | 0.47 | | | c0.55 | |
| v/s Ratio Perm | c0.31 | | 0.02 | 0.10 | | 0.10 | | | | | | |
| v/c Ratio | 0.94 | 0.51 | 0.05 | 0.31 | 0.57 | 0.29 | | 0.81 | | | 0.95 | |
| Uniform Delay, d1 | 27.7 | 23.0 | 19.4 | 21.3 | 23.6 | 21.2 | | 14.3 | | | 16.9 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.69 | | | 1.00 | |
| Incremental Delay, d2 | 46.4 | 3.2 | 0.2 | 3.2 | 4.1 | 1.5 | | 1.2 | | | 9.2 | |
| Delay (s) | 74.1 | 26.2 | 19.6 | 24.4 | 27.7 | 22.7 | | 11.1 | | | 26.1 | |
| Level of Service | E | C | B | C | C | C | | B | | | C | |
| Approach Delay (s) | | 45.1 | | | 25.9 | | | 11.1 | | | 26.1 | |
| Approach LOS | | D | | | C | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 22.0 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.95 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 90.2% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | | ✣ | | | ✣ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 13 | 338 | 6 | 7 | 512 | 5 | 18 | 1 | 16 | 1 | 1 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 13 | 345 | 6 | 7 | 522 | 5 | 18 | 1 | 16 | 1 | 1 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 79 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.87 | | | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | |
| vC, conflicting volume | 528 | | | 351 | | | 918 | 916 | 348 | 931 | 917 | 525 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 528 | | | 250 | | | 906 | 903 | 247 | 920 | 904 | 525 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 92 | 100 | 98 | 100 | 100 | 99 |
| cM capacity (veh/h) | 1045 | | | 1144 | | | 219 | 237 | 690 | 211 | 237 | 556 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 364 | 535 | 36 | 6 |
| Volume Left | 13 | 7 | 18 | 1 |
| Volume Right | 6 | 5 | 16 | 4 |
| cSH | 1045 | 1144 | 319 | 371 |
| Volume to Capacity | 0.01 | 0.01 | 0.11 | 0.02 |
| Queue Length 95th (ft) | 1 | 0 | 9 | 1 |
| Control Delay (s) | 0.4 | 0.2 | 17.7 | 14.9 |
| Lane LOS | A | A | C | B |
| Approach Delay (s) | 0.4 | 0.2 | 17.7 | 14.9 |
| Approach LOS | | | C | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.0 | | |
| Intersection Capacity Utilization | 41.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | | ✣ | | | ✣ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 9 | 446 | 7 | 16 | 389 | 14 | 8 | 6 | 30 | 27 | 19 | 48 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 9 | 455 | 7 | 16 | 397 | 14 | 8 | 6 | 31 | 28 | 19 | 49 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 524 | | | | | | | |
| pX, platoon unblocked | 0.89 | | | | | | 0.89 | 0.89 | | 0.89 | 0.89 | 0.89 |
| vC, conflicting volume | 411 | | | 462 | | | 972 | 921 | 459 | 947 | 917 | 404 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 336 | | | 462 | | | 969 | 911 | 459 | 941 | 907 | 328 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 95 | 97 | 95 | 86 | 92 | 92 |
| cM capacity (veh/h) | 1095 | | | 1110 | | | 177 | 239 | 606 | 199 | 241 | 637 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 471 | 428 | 45 | 96 |
| Volume Left | 9 | 16 | 8 | 28 |
| Volume Right | 7 | 14 | 31 | 49 |
| cSH | 1095 | 1110 | 368 | 324 |
| Volume to Capacity | 0.01 | 0.01 | 0.12 | 0.30 |
| Queue Length 95th (ft) | 1 | 1 | 10 | 30 |
| Control Delay (s) | 0.3 | 0.5 | 16.1 | 20.7 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.3 | 0.5 | 16.1 | 20.7 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.9 | | |
| Intersection Capacity Utilization | 45.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 76 | 421 | 6 | 62 | 411 | 39 | 2 | 19 | 30 | 93 | 23 | 6 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 83 | 458 | 7 | 67 | 447 | 42 | 2 | 21 | 33 | 101 | 25 | 7 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 224 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 489 | | | 464 | | | 1003 | 1250 | 232 | 1040 | 1232 | 245 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 352 | | | 464 | | | 913 | 1182 | 232 | 953 | 1162 | 85 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 93 | | | 94 | | | 99 | 86 | 96 | 34 | 84 | 99 |
| cM capacity (veh/h) | 1117 | | | 1108 | | | 167 | 153 | 776 | 154 | 157 | 883 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 311 | 235 | 291 | 266 | 55 | 133 |
| Volume Left | 83 | 0 | 67 | 0 | 2 | 101 |
| Volume Right | 0 | 7 | 0 | 42 | 33 | 7 |
| cSH | 1117 | 1700 | 1108 | 1700 | 291 | 161 |
| Volume to Capacity | 0.07 | 0.14 | 0.06 | 0.16 | 0.19 | 0.82 |
| Queue Length 95th (ft) | 6 | 0 | 5 | 0 | 17 | 137 |
| Control Delay (s) | 2.8 | 0.0 | 2.4 | 0.0 | 20.2 | 86.9 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 1.6 | | 1.3 | | 20.2 | 86.9 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 11.0 | | |
| Intersection Capacity Utilization | 51.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| 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 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3303 | | 1668 | 3216 | | | 4968 | | | 4999 | |
| Flt Permitted | 0.38 | 1.00 | | 0.41 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 664 | 3303 | | 717 | 3216 | | | 4968 | | | 4999 | |
| Volume (vph) | 66 | 447 | 31 | 153 | 397 | 125 | 0 | 2055 | 204 | 0 | 2248 | 115 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 68 | 461 | 32 | 158 | 409 | 129 | 0 | 2119 | 210 | 0 | 2318 | 119 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 14 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 68 | 492 | 0 | 158 | 536 | 0 | 0 | 2315 | 0 | 0 | 2431 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Effective Green, g (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | | | 0.51 | | | 0.51 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 266 | 1321 | | 287 | 1286 | | | 2513 | | | 2529 | |
| v/s Ratio Prot | | 0.15 | | | 0.17 | | | 0.47 | | | c0.49 | |
| v/s Ratio Perm | 0.10 | | | c0.22 | | | | | | | | |
| v/c Ratio | 0.26 | 0.37 | | 0.55 | 0.42 | | | 0.92 | | | 0.96 | |
| Uniform Delay, d1 | 17.0 | 18.0 | | 19.6 | 18.4 | | | 19.4 | | | 20.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.71 | |
| Incremental Delay, d2 | 2.3 | 0.8 | | 7.4 | 1.0 | | | 7.0 | | | 5.0 | |
| Delay (s) | 19.4 | 18.8 | | 27.0 | 19.4 | | | 26.4 | | | 19.4 | |
| Level of Service | B | B | | C | B | | | C | | | B | |
| Approach Delay (s) | | 18.9 | | | 21.1 | | | 26.4 | | | 19.4 | |
| Approach LOS | | B | | | C | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 22.3 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.78 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 77.8% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

**Existing plus Project Conditions**
**Alternative 2: Wings Retained/Trust Revised**
**Alternative (Couplet)**
**PM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Street
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 290 | 10 | 25 | 411 | 4 | 4 | 1 | 25 | 7 | 3 | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 309 | 11 | 27 | 437 | 4 | 4 | 1 | 27 | 7 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 441 | | | 319 | | | 814 | 813 | 314 | 838 | 816 | 439 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 441 | | | 319 | | | 814 | 813 | 314 | 838 | 816 | 439 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 96 | 97 | 99 | 100 |
| cM capacity (veh/h) | 1129 | | | 1252 | | | 290 | 308 | 731 | 272 | 306 | 622 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 321 | 468 | 32 | 13 |
| Volume Left | 2 | 27 | 4 | 7 |
| Volume Right | 11 | 4 | 27 | 2 |
| cSH | 1129 | 1252 | 586 | 310 |
| Volume to Capacity | 0.00 | 0.02 | 0.05 | 0.04 |
| Queue Length 95th (ft) | 0 | 2 | 4 | 3 |
| Control Delay (s) | 0.1 | 0.7 | 11.5 | 17.1 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 11.5 | 17.1 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 49.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue
2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 315 | 5 | 18 | 402 | 4 | 8 | 4 | 17 | 83 | 33 | 30 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 335 | 5 | 19 | 428 | 4 | 9 | 4 | 18 | 88 | 35 | 32 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 343 | 451 | 31 | 155 |
| Volume Left (vph) | 2 | 19 | 9 | 88 |
| Volume Right (vph) | 5 | 4 | 18 | 32 |
| Hadj (s) | -0.01 | 0.00 | -0.30 | -0.01 |
| Departure Headway (s) | 5.1 | 5.0 | 5.9 | 5.9 |
| Degree Utilization, x | 0.48 | 0.62 | 0.05 | 0.25 |
| Capacity (veh/h) | 676 | 706 | 491 | 541 |
| Control Delay (s) | 12.7 | 15.7 | 9.3 | 10.9 |
| Approach Delay (s) | 12.7 | 15.7 | 9.3 | 10.9 |
| Approach LOS | B | C | A | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 13.7 | | |
| HCM Level of Service | B | | |
| Intersection Capacity Utilization | 55.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
## 102: Lake Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 30 | 382 | 3 | 118 | 421 | 64 | 2 | 44 | 49 | 5 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 32 | 406 | 3 | 126 | 448 | 68 | 2 | 47 | 52 | 5 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.86 | | | | | | 0.86 | 0.86 | | 0.86 | 0.86 | 0.86 |
| vC, conflicting volume | 516 | | | 410 | | | 1206 | 1239 | 408 | 1280 | 1206 | 482 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 437 | | | 410 | | | 1240 | 1278 | 408 | 1326 | 1240 | 397 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 89 | | | 98 | 62 | 92 | 92 | 99 | 100 |
| cM capacity (veh/h) | 975 | | | 1160 | | | 117 | 124 | 648 | 67 | 131 | 564 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 441 | 641 | 101 | 7 |
| Volume Left | 32 | 126 | 2 | 5 |
| Volume Right | 3 | 68 | 52 | 1 |
| cSH | 975 | 1160 | 213 | 84 |
| Volume to Capacity | 0.03 | 0.11 | 0.47 | 0.09 |
| Queue Length 95th (ft) | 3 | 9 | 58 | 7 |
| Control Delay (s) | 1.0 | 2.7 | 36.3 | 52.1 |
| Lane LOS | A | A | E | F |
| Approach Delay (s) | 1.0 | 2.7 | 36.3 | 52.1 |
| Approach LOS | | | E | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 5.2 | | |
| Intersection Capacity Utilization | 69.9% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
## 103: Lake Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4946 | |
| Flt Permitted | 0.41 | 1.00 | 1.00 | 0.46 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 746 | 1756 | 1492 | 809 | 1756 | 1492 | | 5012 | | | 4946 | |
| Volume (vph) | 149 | 262 | 25 | 73 | 299 | 142 | 0 | 2174 | 72 | 0 | 2265 | 304 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 155 | 273 | 26 | 76 | 311 | 148 | 0 | 2265 | 75 | 0 | 2359 | 317 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 20 | 0 |
| Lane Group Flow (vph) | 155 | 273 | 23 | 76 | 311 | 145 | 0 | 2336 | 0 | 0 | 2656 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 246 | 578 | 491 | 266 | 578 | 491 | | 2889 | | | 2851 | |
| v/s Ratio Prot | | 0.16 | | | 0.18 | | | 0.47 | | | c0.54 | |
| v/s Ratio Perm | c0.21 | | 0.02 | 0.09 | | 0.10 | | | | | | |
| v/c Ratio | 0.63 | 0.47 | 0.05 | 0.29 | 0.54 | 0.29 | | 0.81 | | | 0.93 | |
| Uniform Delay, d1 | 24.1 | 22.6 | 19.4 | 21.1 | 23.2 | 21.2 | | 14.3 | | | 16.5 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.69 | | | 1.00 | |
| Incremental Delay, d2 | 11.6 | 2.8 | 0.2 | 2.7 | 3.6 | 1.5 | | 1.2 | | | 7.0 | |
| Delay (s) | 35.8 | 25.4 | 19.6 | 23.8 | 26.8 | 22.7 | | 11.1 | | | 23.5 | |
| Level of Service | D | C | B | C | C | C | | B | | | C | |
| Approach Delay (s) | | 28.6 | | | 25.2 | | | 11.1 | | | 23.5 | |
| Approach LOS | | C | | | C | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 19.2 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.82 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 84.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
104: Lake Street & Funston Avenue 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 13 | 315 | 6 | 7 | 492 | 5 | 18 | 1 | 16 | 1 | 1 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 13 | 321 | 6 | 7 | 502 | 5 | 18 | 1 | 16 | 1 | 1 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 79 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.88 | | | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| vC, conflicting volume | 507 | | | 328 | | | 874 | 872 | 324 | 887 | 873 | 505 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 507 | | | 235 | | | 857 | 855 | 231 | 871 | 855 | 505 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 92 | 100 | 98 | 100 | 100 | 99 |
| cM capacity (veh/h) | 1063 | | | 1176 | | | 240 | 257 | 714 | 231 | 257 | 571 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 341 | 514 | 36 | 6 |
| Volume Left | 13 | 7 | 18 | 1 |
| Volume Right | 6 | 5 | 16 | 4 |
| cSH | 1063 | 1176 | 345 | 394 |
| Volume to Capacity | 0.01 | 0.01 | 0.10 | 0.02 |
| Queue Length 95th (ft) | 1 | 0 | 9 | 1 |
| Control Delay (s) | 0.5 | 0.2 | 16.6 | 14.3 |
| Lane LOS | A | A | C | B |
| Approach Delay (s) | 0.5 | 0.2 | 16.6 | 14.3 |
| Approach LOS | | | C | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.0 | | |
| Intersection Capacity Utilization | 40.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



HCM Unsignalized Intersection Capacity Analysis
105: California Street & 15th Avenue 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 9 | 413 | 7 | 16 | 389 | 14 | 8 | 6 | 30 | 17 | 16 | 22 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 9 | 421 | 7 | 16 | 397 | 14 | 8 | 6 | 31 | 17 | 16 | 22 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 524 | | | | | | | |
| pX, platoon unblocked | 0.89 | | | | | | 0.89 | 0.89 | | 0.89 | 0.89 | 0.89 |
| vC, conflicting volume | 411 | | | 429 | | | 911 | 887 | 425 | 914 | 884 | 404 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 336 | | | 429 | | | 899 | 873 | 425 | 903 | 869 | 328 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 96 | 98 | 95 | 92 | 94 | 96 |
| cM capacity (veh/h) | 1095 | | | 1142 | | | 209 | 252 | 634 | 212 | 253 | 637 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 438 | 428 | 45 | 56 |
| Volume Left | 9 | 16 | 8 | 17 |
| Volume Right | 7 | 14 | 31 | 22 |
| cSH | 1095 | 1142 | 402 | 309 |
| Volume to Capacity | 0.01 | 0.01 | 0.11 | 0.18 |
| Queue Length 95th (ft) | 1 | 1 | 9 | 16 |
| Control Delay (s) | 0.3 | 0.5 | 15.1 | 19.2 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.3 | 0.5 | 15.1 | 19.2 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.1 | | |
| Intersection Capacity Utilization | 41.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 43 | 411 | 6 | 62 | 411 | 39 | 2 | 13 | 30 | 93 | 23 | 6 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 47 | 447 | 7 | 67 | 447 | 42 | 2 | 14 | 33 | 101 | 25 | 7 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 224 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 489 | | | 453 | | | 921 | 1167 | 227 | 959 | 1149 | 245 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 352 | | | 453 | | | 823 | 1092 | 227 | 865 | 1072 | 85 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 94 | | | 99 | 92 | 96 | 47 | 86 | 99 |
| cM capacity (veh/h) | 1117 | | | 1118 | | | 203 | 179 | 782 | 192 | 183 | 883 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 270 | 230 | 291 | 266 | 49 | 133 |
| Volume Left | 47 | 0 | 67 | 0 | 2 | 101 |
| Volume Right | 0 | 7 | 0 | 42 | 33 | 7 |
| cSH | 1117 | 1700 | 1118 | 1700 | 372 | 198 |
| Volume to Capacity | 0.04 | 0.14 | 0.06 | 0.16 | 0.13 | 0.67 |
| Queue Length 95th (ft) | 3 | 0 | 5 | 0 | 11 | 102 |
| Control Delay (s) | 1.8 | 0.0 | 2.4 | 0.0 | 16.1 | 54.0 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 1.0 | | 1.3 | | 16.1 | 54.0 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 7.4 | | |
| Intersection Capacity Utilization | 50.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| 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 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3303 | | 1668 | 3216 | | | 4968 | | | 4999 | |
| Flt Permitted | 0.38 | 1.00 | | 0.41 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 664 | 3303 | | 729 | 3216 | | | 4968 | | | 4999 | |
| Volume (vph) | 66 | 437 | 31 | 153 | 397 | 125 | 0 | 2055 | 204 | 0 | 2248 | 115 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 68 | 451 | 32 | 158 | 409 | 129 | 0 | 2119 | 210 | 0 | 2318 | 119 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 14 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 68 | 482 | 0 | 158 | 536 | 0 | 0 | 2315 | 0 | 0 | 2431 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Effective Green, g (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | | | 0.51 | | | 0.51 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 266 | 1321 | | 292 | 1286 | | | 2513 | | | 2529 | |
| v/s Ratio Prot | | 0.15 | | | 0.17 | | | 0.47 | | | c0.49 | |
| v/s Ratio Perm | 0.10 | | | c0.22 | | | | | | | | |
| v/c Ratio | 0.26 | 0.36 | | 0.54 | 0.42 | | | 0.92 | | | 0.96 | |
| Uniform Delay, d1 | 17.0 | 17.9 | | 19.5 | 18.4 | | | 19.4 | | | 20.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.69 | |
| Incremental Delay, d2 | 2.3 | 0.8 | | 7.0 | 1.0 | | | 7.0 | | | 5.5 | |
| Delay (s) | 19.4 | 18.7 | | 26.6 | 19.4 | | | 26.4 | | | 19.5 | |
| Level of Service | B | B | | C | B | | | C | | | B | |
| Approach Delay (s) | | 18.8 | | | 21.0 | | | 26.4 | | | 19.5 | |
| Approach LOS | | B | | | C | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 22.3 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.78 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 77.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

**Existing plus Project Conditions**
**Alternative 3: Wings Removed Alternative**
**(Couplet)**
**PM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Street

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 291 | 10 | 25 | 409 | 4 | 4 | 1 | 25 | 7 | 3 | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 310 | 11 | 27 | 435 | 4 | 4 | 1 | 27 | 7 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 439 | | | 320 | | | 813 | 812 | 315 | 837 | 815 | 437 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 439 | | | 320 | | | 813 | 812 | 315 | 837 | 815 | 437 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 96 | 97 | 99 | 100 |
| cM capacity (veh/h) | 1131 | | | 1251 | | | 291 | 308 | 730 | 272 | 307 | 624 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 322 | 466 | 32 | 13 |
| Volume Left | 2 | 27 | 4 | 7 |
| Volume Right | 11 | 4 | 27 | 2 |
| cSH | 1131 | 1251 | 585 | 310 |
| Volume to Capacity | 0.00 | 0.02 | 0.05 | 0.04 |
| Queue Length 95th (ft) | 0 | 2 | 4 | 3 |
| Control Delay (s) | 0.1 | 0.7 | 11.5 | 17.1 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 11.5 | 17.1 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 49.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 316 | 5 | 18 | 402 | 4 | 8 | 4 | 17 | 76 | 30 | 28 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 336 | 5 | 19 | 428 | 4 | 9 | 4 | 18 | 81 | 32 | 30 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 344 | 451 | 31 | 143 |
| Volume Left (vph) | 2 | 19 | 9 | 81 |
| Volume Right (vph) | 5 | 4 | 18 | 30 |
| Hadj (s) | -0.01 | 0.00 | -0.30 | -0.01 |
| Departure Headway (s) | 5.0 | 4.9 | 5.9 | 5.9 |
| Degree Utilization, x | 0.48 | 0.61 | 0.05 | 0.23 |
| Capacity (veh/h) | 685 | 714 | 498 | 541 |
| Control Delay (s) | 12.5 | 15.4 | 9.2 | 10.7 |
| Approach Delay (s) | 12.5 | 15.4 | 9.2 | 10.7 |
| Approach LOS | B | C | A | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 13.5 | | |
| HCM Level of Service | B | | |
| Intersection Capacity Utilization | 54.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 31 | 375 | 3 | 118 | 421 | 67 | 2 | 46 | 49 | 5 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 33 | 399 | 3 | 126 | 448 | 71 | 2 | 49 | 52 | 5 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.86 | | | | | | 0.86 | 0.86 | | 0.86 | 0.86 | 0.86 |
| vC, conflicting volume | 519 | | | 402 | | | 1203 | 1237 | 401 | 1278 | 1203 | 484 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 440 | | | 402 | | | 1236 | 1276 | 401 | 1323 | 1236 | 399 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 89 | | | 98 | 61 | 92 | 92 | 99 | 100 |
| cM capacity (veh/h) | 971 | | | 1167 | | | 118 | 125 | 654 | 67 | 132 | 563 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 435 | 645 | 103 | 7 |
| Volume Left | 33 | 126 | 2 | 5 |
| Volume Right | 3 | 71 | 52 | 1 |
| cSH | 971 | 1167 | 210 | 83 |
| Volume to Capacity | 0.03 | 0.11 | 0.49 | 0.09 |
| Queue Length 95th (ft) | 3 | 9 | 61 | 7 |
| Control Delay (s) | 1.0 | 2.7 | 37.5 | 52.7 |
| Lane LOS | A | A | E | F |
| Approach Delay (s) | 1.0 | 2.7 | 37.5 | 52.7 |
| Approach LOS | | | E | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 5.4 | | |
| Intersection Capacity Utilization | 69.9% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4946 | |
| Flt Permitted | 0.41 | 1.00 | 1.00 | 0.46 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 743 | 1756 | 1492 | 814 | 1756 | 1492 | | 5012 | | | 4946 | |
| Volume (vph) | 144 | 260 | 25 | 73 | 300 | 142 | 0 | 2174 | 72 | 0 | 2265 | 306 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 150 | 271 | 26 | 76 | 312 | 148 | 0 | 2265 | 75 | 0 | 2359 | 319 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 20 | 0 |
| Lane Group Flow (vph) | 150 | 271 | 23 | 76 | 312 | 145 | 0 | 2336 | 0 | 0 | 2658 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 245 | 578 | 491 | 268 | 578 | 491 | | 2889 | | | 2851 | |
| v/s Ratio Prot | | 0.15 | | | 0.18 | | | 0.47 | | | c0.54 | |
| v/s Ratio Perm | c0.20 | | 0.02 | 0.09 | | 0.10 | | | | | | |
| v/c Ratio | 0.61 | 0.47 | 0.05 | 0.28 | 0.54 | 0.29 | | 0.81 | | | 0.93 | |
| Uniform Delay, d1 | 23.9 | 22.6 | 19.4 | 21.1 | 23.2 | 21.2 | | 14.3 | | | 16.5 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.69 | | | 1.00 | |
| Incremental Delay, d2 | 10.9 | 2.7 | 0.2 | 2.6 | 3.6 | 1.5 | | 1.2 | | | 7.1 | |
| Delay (s) | 34.9 | 25.3 | 19.6 | 23.7 | 26.8 | 22.7 | | 11.1 | | | 23.5 | |
| Level of Service | C | C | B | C | C | C | | B | | | C | |
| Approach Delay (s) | | 28.2 | | | 25.2 | | | 11.1 | | | 23.5 | |
| Approach LOS | | C | | | C | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 19.2 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.82 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 84.3% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
104: Lake Street & Funston Avenue 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 13 | 313 | 6 | 7 | 493 | 5 | 18 | 1 | 16 | 1 | 1 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 13 | 319 | 6 | 7 | 503 | 5 | 18 | 1 | 16 | 1 | 1 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 79 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.88 | | | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| vC, conflicting volume | 508 | | | 326 | | | 873 | 871 | 322 | 886 | 872 | 506 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 508 | | | 234 | | | 856 | 854 | 230 | 870 | 854 | 506 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 92 | 100 | 98 | 100 | 100 | 99 |
| cM capacity (veh/h) | 1062 | | | 1179 | | | 240 | 258 | 716 | 232 | 257 | 571 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 339 | 515 | 36 | 6 |
| Volume Left | 13 | 7 | 18 | 1 |
| Volume Right | 6 | 5 | 16 | 4 |
| cSH | 1062 | 1179 | 346 | 394 |
| Volume to Capacity | 0.01 | 0.01 | 0.10 | 0.02 |
| Queue Length 95th (ft) | 1 | 0 | 9 | 1 |
| Control Delay (s) | 0.5 | 0.2 | 16.6 | 14.3 |
| Lane LOS | A | A | C | B |
| Approach Delay (s) | 0.5 | 0.2 | 16.6 | 14.3 |
| Approach LOS | | | C | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.0 | | |
| Intersection Capacity Utilization | 40.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
105: California Street & 15th Avenue 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 9 | 414 | 7 | 16 | 389 | 14 | 8 | 6 | 30 | 17 | 16 | 20 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 9 | 422 | 7 | 16 | 397 | 14 | 8 | 6 | 31 | 17 | 16 | 20 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 524 | | | | | | | |
| pX, platoon unblocked | 0.89 | | | | | | 0.89 | 0.89 | | 0.89 | 0.89 | 0.89 |
| vC, conflicting volume | 411 | | | 430 | | | 910 | 888 | 426 | 915 | 885 | 404 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 336 | | | 430 | | | 898 | 874 | 426 | 904 | 870 | 328 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 96 | 98 | 95 | 92 | 94 | 97 |
| cM capacity (veh/h) | 1095 | | | 1141 | | | 210 | 252 | 633 | 212 | 253 | 637 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 439 | 428 | 45 | 54 |
| Volume Left | 9 | 16 | 8 | 17 |
| Volume Right | 7 | 14 | 31 | 20 |
| cSH | 1095 | 1141 | 403 | 303 |
| Volume to Capacity | 0.01 | 0.01 | 0.11 | 0.18 |
| Queue Length 95th (ft) | 1 | 1 | 9 | 16 |
| Control Delay (s) | 0.3 | 0.5 | 15.1 | 19.4 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.3 | 0.5 | 15.1 | 19.4 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.1 | | |
| Intersection Capacity Utilization | 41.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 44 | 411 | 6 | 62 | 411 | 39 | 2 | 14 | 30 | 93 | 23 | 6 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 48 | 447 | 7 | 67 | 447 | 42 | 2 | 15 | 33 | 101 | 25 | 7 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 224 | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| vC, conflicting volume | 489 | | | 453 | | | 923 | 1170 | 227 | 962 | 1152 | 245 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 352 | | | 453 | | | 825 | 1094 | 227 | 868 | 1075 | 85 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 94 | | | 99 | 91 | 96 | 47 | 86 | 99 |
| cM capacity (veh/h) | 1117 | | | 1118 | | | 202 | 178 | 782 | 190 | 183 | 883 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 271 | 230 | 291 | 266 | 50 | 133 |
| Volume Left | 48 | 0 | 67 | 0 | 2 | 101 |
| Volume Right | 0 | 7 | 0 | 42 | 33 | 7 |
| cSH | 1117 | 1700 | 1118 | 1700 | 362 | 196 |
| Volume to Capacity | 0.04 | 0.14 | 0.06 | 0.16 | 0.14 | 0.68 |
| Queue Length 95th (ft) | 3 | 0 | 5 | 0 | 12 | 103 |
| Control Delay (s) | 1.8 | 0.0 | 2.4 | 0.0 | 16.5 | 55.1 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 1.0 | | 1.3 | | 16.5 | 55.1 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 7.5 | | |
| Intersection Capacity Utilization | 50.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| 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 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3303 | | 1668 | 3216 | | | 4968 | | | 4999 | |
| Flt Permitted | 0.38 | 1.00 | | 0.41 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 664 | 3303 | | 729 | 3216 | | | 4968 | | | 4999 | |
| Volume (vph) | 66 | 437 | 31 | 153 | 397 | 125 | 0 | 2055 | 204 | 0 | 2248 | 115 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 68 | 451 | 32 | 158 | 409 | 129 | 0 | 2119 | 210 | 0 | 2318 | 119 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 14 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 68 | 482 | 0 | 158 | 536 | 0 | 0 | 2315 | 0 | 0 | 2431 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Effective Green, g (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | | | 0.51 | | | 0.51 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 266 | 1321 | | 292 | 1286 | | | 2513 | | | 2529 | |
| v/s Ratio Prot | | 0.15 | | | 0.17 | | | 0.47 | | | c0.49 | |
| v/s Ratio Perm | 0.10 | | | c0.22 | | | | | | | | |
| v/c Ratio | 0.26 | 0.36 | | 0.54 | 0.42 | | | 0.92 | | | 0.96 | |
| Uniform Delay, d1 | 17.0 | 17.9 | | 19.5 | 18.4 | | | 19.4 | | | 20.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.69 | |
| Incremental Delay, d2 | 2.3 | 0.8 | | 7.0 | 1.0 | | | 7.0 | | | 5.5 | |
| Delay (s) | 19.4 | 18.7 | | 26.6 | 19.4 | | | 26.4 | | | 19.5 | |
| Level of Service | B | B | | C | B | | | C | | | B | |
| Approach Delay (s) | | 18.8 | | | 21.0 | | | 26.4 | | | 19.5 | |
| Approach LOS | | B | | | C | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 22.3 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.78 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 77.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

**Existing plus Project Conditions**
**Alternative 4: Battery Caulfield Alternative**
**(Couplet)**
**PM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Street

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 287 | 10 | 25 | 407 | 4 | 4 | 1 | 25 | 7 | 3 | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 305 | 11 | 27 | 433 | 4 | 4 | 1 | 27 | 7 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 437 | | | 316 | | | 807 | 805 | 311 | 830 | 809 | 435 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 437 | | | 316 | | | 807 | 805 | 311 | 830 | 809 | 435 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 96 | 97 | 99 | 100 |
| cM capacity (veh/h) | 1133 | | | 1256 | | | 294 | 311 | 734 | 275 | 310 | 625 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 318 | 464 | 32 | 13 |
| Volume Left | 2 | 27 | 4 | 7 |
| Volume Right | 11 | 4 | 27 | 2 |
| cSH | 1133 | 1256 | 589 | 313 |
| Volume to Capacity | 0.00 | 0.02 | 0.05 | 0.04 |
| Queue Length 95th (ft) | 0 | 2 | 4 | 3 |
| Control Delay (s) | 0.1 | 0.7 | 11.5 | 17.0 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 11.5 | 17.0 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 48.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 2 | 312 | 5 | 18 | 402 | 4 | 8 | 4 | 17 | 68 | 26 | 26 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 2 | 332 | 5 | 19 | 428 | 4 | 9 | 4 | 18 | 72 | 28 | 28 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 339 | 451 | 31 | 128 |
| Volume Left (vph) | 2 | 19 | 9 | 72 |
| Volume Right (vph) | 5 | 4 | 18 | 28 |
| Hadj (s) | -0.01 | 0.00 | -0.30 | -0.02 |
| Departure Headway (s) | 5.0 | 4.8 | 5.8 | 5.8 |
| Degree Utilization, x | 0.47 | 0.61 | 0.05 | 0.21 |
| Capacity (veh/h) | 694 | 724 | 508 | 543 |
| Control Delay (s) | 12.2 | 15.0 | 9.1 | 10.4 |
| Approach Delay (s) | 12.2 | 15.0 | 9.1 | 10.4 |
| Approach LOS | B | B | A | B |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 13.2 | | |
| HCM Level of Service | B | | |
| Intersection Capacity Utilization | 53.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 27 | 367 | 3 | 118 | 421 | 53 | 2 | 39 | 49 | 5 | 1 | 1 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 29 | 390 | 3 | 126 | 448 | 56 | 2 | 41 | 52 | 5 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.86 | | | | | | 0.86 | 0.86 | | 0.86 | 0.86 | 0.86 |
| vC, conflicting volume | 504 | | | 394 | | | 1178 | 1205 | 392 | 1249 | 1178 | 476 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 425 | | | 394 | | | 1207 | 1238 | 392 | 1290 | 1207 | 392 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 89 | | | 98 | 69 | 92 | 93 | 99 | 100 |
| cM capacity (veh/h) | 987 | | | 1176 | | | 124 | 132 | 661 | 77 | 138 | 570 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 422 | 630 | 96 | 7 |
| Volume Left | 29 | 126 | 2 | 5 |
| Volume Right | 3 | 56 | 52 | 1 |
| cSH | 987 | 1176 | 234 | 95 |
| Volume to Capacity | 0.03 | 0.11 | 0.41 | 0.08 |
| Queue Length 95th (ft) | 2 | 9 | 47 | 6 |
| Control Delay (s) | 0.9 | 2.7 | 30.6 | 46.2 |
| Lane LOS | A | A | D | E |
| Approach Delay (s) | 0.9 | 2.7 | 30.6 | 46.2 |
| Approach LOS | | | D | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 4.6 | | |
| Intersection Capacity Utilization | 68.0% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4949 | |
| Flt Permitted | 0.41 | 1.00 | 1.00 | 0.47 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 753 | 1756 | 1492 | 818 | 1756 | 1492 | | 5012 | | | 4949 | |
| Volume (vph) | 138 | 258 | 25 | 73 | 296 | 142 | 0 | 2174 | 72 | 0 | 2265 | 296 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 144 | 269 | 26 | 76 | 308 | 148 | 0 | 2265 | 75 | 0 | 2359 | 308 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 19 | 0 |
| Lane Group Flow (vph) | 144 | 269 | 23 | 76 | 308 | 145 | 0 | 2336 | 0 | 0 | 2648 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 248 | 578 | 491 | 269 | 578 | 491 | | 2889 | | | 2853 | |
| v/s Ratio Prot | | 0.15 | | | 0.18 | | | 0.47 | | | c0.53 | |
| v/s Ratio Perm | c0.19 | | 0.02 | 0.09 | | 0.10 | | | | | | |
| v/c Ratio | 0.58 | 0.47 | 0.05 | 0.28 | 0.53 | 0.29 | | 0.81 | | | 0.93 | |
| Uniform Delay, d1 | 23.6 | 22.6 | 19.4 | 21.1 | 23.2 | 21.2 | | 14.3 | | | 16.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.69 | | | 1.00 | |
| Incremental Delay, d2 | 9.6 | 2.7 | 0.2 | 2.6 | 3.5 | 1.5 | | 1.2 | | | 6.7 | |
| Delay (s) | 33.2 | 25.3 | 19.6 | 23.7 | 26.7 | 22.7 | | 11.1 | | | 23.1 | |
| Level of Service | C | C | B | C | C | C | | B | | | C | |
| Approach Delay (s) | | 27.5 | | | 25.1 | | | 11.1 | | | 23.1 | |
| Approach LOS | | C | | | C | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 18.9 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.80 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 83.6% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
104: Lake Street & Funston Avenue 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 13 | 311 | 6 | 7 | 489 | 5 | 18 | 1 | 16 | 1 | 1 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 13 | 317 | 6 | 7 | 499 | 5 | 18 | 1 | 16 | 1 | 1 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 79 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.88 | | | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | |
| vC, conflicting volume | 504 | | | 323 | | | 867 | 865 | 320 | 880 | 866 | 502 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 504 | | | 232 | | | 849 | 847 | 229 | 863 | 848 | 502 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 92 | 100 | 98 | 100 | 100 | 99 |
| cM capacity (veh/h) | 1066 | | | 1182 | | | 243 | 260 | 719 | 234 | 260 | 574 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 337 | 511 | 36 | 6 |
| Volume Left | 13 | 7 | 18 | 1 |
| Volume Right | 6 | 5 | 16 | 4 |
| cSH | 1066 | 1182 | 350 | 398 |
| Volume to Capacity | 0.01 | 0.01 | 0.10 | 0.02 |
| Queue Length 95th (ft) | 1 | 0 | 8 | 1 |
| Control Delay (s) | 0.5 | 0.2 | 16.5 | 14.2 |
| Lane LOS | A | A | C | B |
| Approach Delay (s) | 0.5 | 0.2 | 16.5 | 14.2 |
| Approach LOS | | | C | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.0 | | |
| Intersection Capacity Utilization | 40.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



HCM Unsignalized Intersection Capacity Analysis
105: California Street & 15th Avenue 2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 9 | 409 | 7 | 16 | 389 | 14 | 8 | 6 | 30 | 16 | 16 | 18 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 9 | 417 | 7 | 16 | 397 | 14 | 8 | 6 | 31 | 16 | 16 | 18 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 524 | | | | | | | |
| pX, platoon unblocked | 0.89 | | | | | | 0.89 | 0.89 | | 0.89 | 0.89 | 0.89 |
| vC, conflicting volume | 411 | | | 424 | | | 903 | 883 | 421 | 910 | 880 | 404 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 336 | | | 424 | | | 890 | 868 | 421 | 898 | 864 | 328 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 96 | 98 | 95 | 92 | 94 | 97 |
| cM capacity (veh/h) | 1095 | | | 1146 | | | 214 | 254 | 637 | 214 | 255 | 637 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 434 | 428 | 45 | 51 |
| Volume Left | 9 | 16 | 8 | 16 |
| Volume Right | 7 | 14 | 31 | 18 |
| cSH | 1095 | 1146 | 407 | 301 |
| Volume to Capacity | 0.01 | 0.01 | 0.11 | 0.17 |
| Queue Length 95th (ft) | 1 | 1 | 9 | 15 |
| Control Delay (s) | 0.3 | 0.5 | 14.9 | 19.4 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.3 | 0.5 | 14.9 | 19.4 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.1 | | |
| Intersection Capacity Utilization | 40.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

2/20/2006

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | R |
| Lane Configurations | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| | | | | | | | | | | | | 6 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| | | | | | | | | | | | | 7 |
| Pedestrians | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| pX, platoon unblocked | 0.92 | | | | | | 0.92 | 0.92 | | 0.92 | 0.92 | 0.92 |
| | | | | | | | | | | | | 45 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| vCu, unblocked vol | 352 | | | 452 | | | 812 | 1081 | 226 | 855 | 1062 | 85 |
| | | | | | | | | | | | | .9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| | | | | | | | | | | | | .3 |
| p0 queue free % | 96 | | | 94 | | | 99 | 92 | 96 | 48 | 87 | 99 |
| | | | | | | | | | | | | 83 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |
| Volume Left | 42 | 0 | 67 | 0 | 2 | 101 |
| | | | | | | |
| cSH | 1117 | 1700 | 1119 | 1700 | 377 | 202 |
| | | | | | | |
| Queue Length 95th (ft) | 3 | 0 | 5 | 0 | 11 | 99 |
| | | | | | | |
| Lane LOS | A | | A | | C | F |
| | | | | | | |
| Approach LOS | | | | | C | F |

| | | | |
|---|---|---|---|
| Average Delay | 7.1 | | |
| Intersection Capacity Utilization | 50.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

2/20/2006

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| 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 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3303 | | 1668 | 3216 | | | 4968 | | | 4999 | |
| Flt Permitted | 0.38 | 1.00 | | 0.42 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 664 | 3303 | | 731 | 3216 | | | 4968 | | | 4999 | |
| Volume (vph) | 66 | 436 | 31 | 153 | 397 | 125 | 0 | 2055 | 204 | 0 | 2248 | 115 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 68 | 449 | 32 | 158 | 409 | 129 | 0 | 2119 | 210 | 0 | 2318 | 119 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 14 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 68 | 480 | 0 | 158 | 536 | 0 | 0 | 2315 | 0 | 0 | 2431 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Effective Green, g (s) | 34.0 | 34.0 | | 34.0 | 34.0 | | | 43.0 | | | 43.0 | |
| Actuated g/C Ratio | 0.40 | 0.40 | | 0.40 | 0.40 | | | 0.51 | | | 0.51 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 266 | 1321 | | 292 | 1286 | | | 2513 | | | 2529 | |
| v/s Ratio Prot | | 0.15 | | | 0.17 | | | 0.47 | | | c0.49 | |
| v/s Ratio Perm | 0.10 | | | c0.22 | | | | | | | | |
| v/c Ratio | 0.26 | 0.36 | | 0.54 | 0.42 | | | 0.92 | | | 0.96 | |
| Uniform Delay, d1 | 17.0 | 17.9 | | 19.5 | 18.4 | | | 19.4 | | | 20.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.69 | |
| Incremental Delay, d2 | 2.3 | 0.8 | | 7.0 | 1.0 | | | 7.0 | | | 5.6 | |
| Delay (s) | 19.4 | 18.7 | | 26.6 | 19.4 | | | 26.4 | | | 19.4 | |
| Level of Service | B | B | | C | B | | | C | | | B | |
| Approach Delay (s) | | 18.8 | | | 21.0 | | | 26.4 | | | 19.4 | |
| Approach LOS | | B | | | C | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 22.3 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.78 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 77.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

**Existing plus Project Conditions**
**Alternative 1: PTMP Alternative (Variant)**
**AM Peak Hour**

HCM Unsignalized Intersection Capacity Analysis
100: Lake Street & 17th Avenue

Existing+Project Variant AM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 556 | 13 | 15 | 261 | 1 | 3 | 1 | 39 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 604 | 14 | 16 | 284 | 1 | 3 | 1 | 42 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 285 | | | 618 | | | 938 | 933 | 611 | 976 | 940 | 284 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 285 | | | 618 | | | 938 | 933 | 611 | 976 | 940 | 284 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 91 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1289 | | | 972 | | | 239 | 263 | 497 | 209 | 261 | 760 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 621 | 301 | 47 | 12 |
| Volume Left | 2 | 16 | 3 | 4 |
| Volume Right | 14 | 1 | 42 | 3 |
| cSH | 1289 | 972 | 454 | 286 |
| Volume to Capacity | 0.00 | 0.02 | 0.10 | 0.04 |
| Queue Length 95th (ft) | 0 | 1 | 9 | 3 |
| Control Delay (s) | 0.0 | 0.6 | 13.8 | 18.1 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.6 | 13.8 | 18.1 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 40.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



HCM Unsignalized Intersection Capacity Analysis
101: Lake Street & 15th Avenue

Existing+Project Variant AM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 28 | 558 | 13 | 13 | 273 | 28 | 2 | 38 | 37 | 6 | 2 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 29 | 581 | 14 | 14 | 284 | 29 | 2 | 40 | 39 | 6 | 2 | 2 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 624 | 327 | 80 | 10 |
| Volume Left (vph) | 29 | 14 | 2 | 6 |
| Volume Right (vph) | 14 | 29 | 39 | 2 |
| Hadj (s) | 0.00 | -0.05 | -0.28 | 0.00 |
| Departure Headway (s) | 4.6 | 4.8 | 5.8 | 6.3 |
| Degree Utilization, x | 0.79 | 0.44 | 0.13 | 0.02 |
| Capacity (veh/h) | 770 | 718 | 567 | 508 |
| Control Delay (s) | 22.6 | 11.6 | 9.7 | 9.4 |
| Approach Delay (s) | 22.6 | 11.6 | 9.7 | 9.4 |
| Approach LOS | C | B | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 18.0 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 51.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 30 | 566 | 5 | 145 | 306 | 28 | 4 | 36 | 40 | 3 | 2 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 31 | 578 | 5 | 148 | 312 | 29 | 4 | 37 | 41 | 3 | 2 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.93 | | | | | | 0.93 | 0.93 | | 0.93 | 0.93 | 0.93 |
| vC, conflicting volume | 341 | | | 583 | | | 1269 | 1278 | 580 | 1323 | 1266 | 327 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 292 | | | 583 | | | 1289 | 1299 | 580 | 1347 | 1286 | 277 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 85 | | | 96 | 71 | 92 | 96 | 98 | 99 |
| cM capacity (veh/h) | 1193 | | | 1002 | | | 113 | 126 | 518 | 75 | 128 | 714 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 613 | 489 | 82 | 9 |
| Volume Left | 31 | 148 | 4 | 3 |
| Volume Right | 5 | 29 | 41 | 4 |
| cSH | 1193 | 1002 | 201 | 148 |
| Volume to Capacity | 0.03 | 0.15 | 0.41 | 0.06 |
| Queue Length 95th (ft) | 2 | 13 | 46 | 5 |
| Control Delay (s) | 0.7 | 4.0 | 34.7 | 31.0 |
| Lane LOS | A | A | D | D |
| Approach Delay (s) | 0.7 | 4.0 | 34.7 | 31.0 |
| Approach LOS | | | D | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 4.6 | | |
| Intersection Capacity Utilization | 72.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4943 | |
| Flt Permitted | 0.58 | 1.00 | 1.00 | 0.28 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1050 | 1756 | 1492 | 484 | 1756 | 1492 | | 5012 | | | 4943 | |
| Volume (vph) | 182 | 399 | 28 | 59 | 181 | 105 | 0 | 2350 | 77 | 0 | 2130 | 299 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 190 | 416 | 29 | 61 | 189 | 109 | 0 | 2448 | 80 | 0 | 2219 | 311 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 21 | 0 |
| Lane Group Flow (vph) | 190 | 416 | 26 | 61 | 189 | 107 | 0 | 2524 | 0 | 0 | 2509 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 346 | 578 | 491 | 159 | 578 | 491 | | 2889 | | | 2849 | |
| v/s Ratio Prot | | c0.24 | | | 0.11 | | | 0.50 | | | c0.51 | |
| v/s Ratio Perm | 0.18 | | 0.02 | 0.13 | | 0.07 | | | | | | |
| v/c Ratio | 0.55 | 0.72 | 0.05 | 0.38 | 0.33 | 0.22 | | 0.87 | | | 0.88 | |
| Uniform Delay, d1 | 23.3 | 25.1 | 19.4 | 21.9 | 21.4 | 20.6 | | 15.4 | | | 15.5 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.58 | | | 0.62 | |
| Incremental Delay, d2 | 6.1 | 7.5 | 0.2 | 6.9 | 1.5 | 1.0 | | 2.3 | | | 3.4 | |
| Delay (s) | 29.5 | 32.6 | 19.6 | 28.8 | 22.9 | 21.6 | | 11.2 | | | 13.0 | |
| Level of Service | C | C | B | C | C | C | | B | | | B | |
| Approach Delay (s) | | 31.1 | | | 23.5 | | | 11.2 | | | 13.0 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 14.8 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.82 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 82.1% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Avenue

Existing+Project Variant AM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | | ✣ | | | ✣ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 460 | 13 | 3 | 332 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 1 | 523 | 15 | 3 | 377 | 5 | 12 | 3 | 18 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 71 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.79 | | | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | |
| vC, conflicting volume | 382 | | | 538 | | | 922 | 921 | 530 | 939 | 926 | 380 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 382 | | | 416 | | | 902 | 900 | 407 | 923 | 907 | 380 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 94 | 98 | 96 | 98 | 99 | 100 |
| cM capacity (veh/h) | 1182 | | | 909 | | | 204 | 221 | 514 | 190 | 219 | 672 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 539 | 385 | 34 | 8 |
| Volume Left | 1 | 3 | 12 | 3 |
| Volume Right | 15 | 5 | 18 | 2 |
| cSH | 1182 | 909 | 304 | 251 |
| Volume to Capacity | 0.00 | 0.00 | 0.11 | 0.03 |
| Queue Length 95th (ft) | 0 | 0 | 9 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 18.3 | 19.8 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 18.3 | 19.8 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.9 | | |
| Intersection Capacity Utilization | 35.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue

Existing+Project Variant AM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | | ✣ | | | ✣ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 36 | 543 | 14 | 11 | 267 | 20 | 7 | 21 | 29 | 14 | 9 | 5 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 38 | 578 | 15 | 12 | 284 | 21 | 7 | 22 | 31 | 15 | 10 | 5 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 305 | | | 593 | | | 990 | 990 | 585 | 1022 | 987 | 295 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 260 | | | 593 | | | 989 | 990 | 585 | 1023 | 986 | 248 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 99 | | | 96 | 90 | 94 | 91 | 96 | 99 |
| cM capacity (veh/h) | 1235 | | | 993 | | | 199 | 223 | 515 | 170 | 224 | 746 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 631 | 317 | 61 | 30 |
| Volume Left | 38 | 12 | 7 | 15 |
| Volume Right | 15 | 21 | 31 | 5 |
| cSH | 1235 | 993 | 307 | 217 |
| Volume to Capacity | 0.03 | 0.01 | 0.20 | 0.14 |
| Queue Length 95th (ft) | 2 | 1 | 18 | 12 |
| Control Delay (s) | 0.8 | 0.4 | 19.6 | 24.2 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.8 | 0.4 | 19.6 | 24.2 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.5 | | |
| Intersection Capacity Utilization | 55.1% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 32 | 542 | 12 | 52 | 284 | 30 | 1 | 18 | 26 | 127 | 12 | 13 |
| Peak Hour Factor | 0.91 | 0.91 | 0.25 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 35 | 596 | 48 | 57 | 312 | 33 | 1 | 20 | 29 | 140 | 13 | 14 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 345 | | | 644 | | | 981 | 1149 | 322 | 849 | 1157 | 173 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 278 | | | 644 | | | 940 | 1115 | 322 | 803 | 1123 | 99 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 94 | | | 99 | 89 | 96 | 36 | 93 | 98 |
| cM capacity (veh/h) | 1246 | | | 951 | | | 185 | 184 | 680 | 220 | 182 | 908 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 333 | 346 | 213 | 189 | 49 | 167 |
| Volume Left | 35 | 0 | 57 | 0 | 1 | 140 |
| Volume Right | 0 | 48 | 0 | 33 | 29 | 14 |
| cSH | 1246 | 1700 | 951 | 1700 | 318 | 231 |
| Volume to Capacity | 0.03 | 0.20 | 0.06 | 0.11 | 0.16 | 0.72 |
| Queue Length 95th (ft) | 2 | 0 | 5 | 0 | 14 | 122 |
| Control Delay (s) | 1.1 | 0.0 | 2.9 | 0.0 | 18.4 | 52.9 |
| Lane LOS | A | | A | | C | F |
| Approach Delay (s) | 0.5 | | 1.5 | | 18.4 | 52.9 |
| Approach LOS | | | | | C | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 8.3 | | |
| Intersection Capacity Utilization | 51.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3198 | | | 4960 | | | 4997 | |
| Flt Permitted | 0.48 | 1.00 | | 0.27 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 837 | 3318 | | 467 | 3198 | | | 4960 | | | 4997 | |
| Volume (vph) | 86 | 587 | 22 | 93 | 252 | 96 | 0 | 2245 | 251 | 0 | 2102 | 115 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 89 | 605 | 23 | 96 | 260 | 99 | 0 | 2314 | 259 | 0 | 2167 | 119 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 16 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 89 | 625 | 0 | 96 | 356 | 0 | 0 | 2557 | 0 | 0 | 2279 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 256 | 1015 | | 143 | 978 | | | 2976 | | | 2998 | |
| v/s Ratio Prot | | 0.19 | | | 0.11 | | | c0.52 | | | 0.46 | |
| v/s Ratio Perm | 0.11 | | | c0.21 | | | | | | | | |
| v/c Ratio | 0.35 | 0.62 | | 0.67 | 0.36 | | | 0.86 | | | 0.76 | |
| Uniform Delay, d1 | 22.9 | 25.2 | | 25.8 | 23.0 | | | 14.0 | | | 12.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.64 | |
| Incremental Delay, d2 | 3.7 | 2.8 | | 22.3 | 1.0 | | | 3.5 | | | 0.9 | |
| Delay (s) | 26.6 | 28.0 | | 48.1 | 24.1 | | | 17.5 | | | 8.9 | |
| Level of Service | C | C | | D | C | | | B | | | A | |
| Approach Delay (s) | | 27.8 | | | 29.2 | | | 17.5 | | | 8.9 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.4 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.80 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5012 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5012 | |
| Volume (vph) | 54 | 96 | 0 | 2639 | 2333 | 77 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 56 | 100 | 0 | 2749 | 2430 | 80 |
| RTOR Reduction (vph) | 0 | 11 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 56 | 89 | 0 | 2749 | 2507 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Effective Green, g (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Actuated g/C Ratio | 0.05 | 0.17 | | 0.86 | 0.73 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 88 | 483 | | 4313 | 3679 | |
| v/s Ratio Prot | c0.03 | 0.03 | | c0.55 | c0.50 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.64 | 0.18 | | 0.64 | 0.68 | |
| Uniform Delay, d1 | 39.7 | 30.1 | | 1.9 | 6.0 | |
| Progression Factor | 1.00 | 1.00 | | 0.25 | 1.00 | |
| Incremental Delay, d2 | 14.1 | 0.2 | | 0.4 | 1.0 | |
| Delay (s) | 53.8 | 30.3 | | 0.9 | 7.1 | |
| Level of Service | D | C | | A | A | |
| Approach Delay (s) | 38.7 | | | 0.9 | 7.1 | |
| Approach LOS | D | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 4.8 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.66 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 61.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

**Existing plus Project Conditions**
**Alternative 2: Wings Retained/Trust Revised**
**Alternative (Variant)**
**AM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue
Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 542 | 13 | 15 | 255 | 1 | 3 | 1 | 39 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 589 | 14 | 16 | 277 | 1 | 3 | 1 | 42 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 278 | | | 603 | | | 916 | 911 | 596 | 954 | 918 | 278 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 278 | | | 603 | | | 916 | 911 | 596 | 954 | 918 | 278 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 92 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1296 | | | 984 | | | 247 | 271 | 507 | 217 | 269 | 766 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 605 | 295 | 47 | 12 |
| Volume Left | 2 | 16 | 3 | 4 |
| Volume Right | 14 | 1 | 42 | 3 |
| cSH | 1296 | 984 | 464 | 295 |
| Volume to Capacity | 0.00 | 0.02 | 0.10 | 0.04 |
| Queue Length 95th (ft) | 0 | 1 | 8 | 3 |
| Control Delay (s) | 0.0 | 0.6 | 13.6 | 17.7 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.6 | 13.6 | 17.7 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 39.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue
Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 21 | 551 | 13 | 13 | 267 | 21 | 2 | 24 | 37 | 6 | 2 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 22 | 574 | 14 | 14 | 278 | 22 | 2 | 25 | 39 | 6 | 2 | 2 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 609 | 314 | 66 | 10 |
| Volume Left (vph) | 22 | 14 | 2 | 6 |
| Volume Right (vph) | 14 | 22 | 39 | 2 |
| Hadj (s) | -0.01 | -0.03 | -0.35 | 0.00 |
| Departure Headway (s) | 4.5 | 4.8 | 5.6 | 6.1 |
| Degree Utilization, x | 0.76 | 0.42 | 0.10 | 0.02 |
| Capacity (veh/h) | 783 | 730 | 575 | 515 |
| Control Delay (s) | 20.2 | 11.1 | 9.3 | 9.2 |
| Approach Delay (s) | 20.2 | 11.1 | 9.3 | 9.2 |
| Approach LOS | C | B | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 16.5 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 47.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue

Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 23 | 566 | 5 | 143 | 293 | 21 | 4 | 22 | 40 | 3 | 2 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 23 | 578 | 5 | 146 | 299 | 21 | 4 | 22 | 41 | 3 | 2 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 320 | | | 583 | | | 1234 | 1239 | 580 | 1281 | 1231 | 310 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 277 | | | 583 | | | 1249 | 1255 | 580 | 1299 | 1246 | 265 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 85 | | | 97 | 84 | 92 | 97 | 99 | 99 |
| cM capacity (veh/h) | 1219 | | | 1002 | | | 122 | 136 | 518 | 93 | 138 | 731 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 606 | 466 | 67 | 9 |
| Volume Left | 23 | 146 | 4 | 3 |
| Volume Right | 5 | 21 | 41 | 4 |
| cSH | 1219 | 1002 | 243 | 172 |
| Volume to Capacity | 0.02 | 0.15 | 0.28 | 0.05 |
| Queue Length 95th (ft) | 1 | 13 | 27 | 4 |
| Control Delay (s) | 0.5 | 4.0 | 25.4 | 27.1 |
| Lane LOS | A | A | D | D |
| Approach Delay (s) | 0.5 | 4.0 | 25.4 | 27.1 |
| Approach LOS | | | D | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.6 | | |
| Intersection Capacity Utilization | 69.9% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard

Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4945 | |
| Flt Permitted | 0.60 | 1.00 | 1.00 | 0.28 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1089 | 1756 | 1492 | 484 | 1756 | 1492 | | 5012 | | | 4945 | |
| Volume (vph) | 182 | 399 | 28 | 59 | 167 | 105 | 0 | 2350 | 77 | 0 | 2116 | 291 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 190 | 416 | 29 | 61 | 174 | 109 | 0 | 2448 | 80 | 0 | 2204 | 303 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 21 | 0 |
| Lane Group Flow (vph) | 190 | 416 | 26 | 61 | 174 | 107 | 0 | 2524 | 0 | 0 | 2486 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 359 | 578 | 491 | 159 | 578 | 491 | | 2889 | | | 2851 | |
| v/s Ratio Prot | | c0.24 | | | 0.10 | | | c0.50 | | | 0.50 | |
| v/s Ratio Perm | 0.17 | | 0.02 | 0.13 | | 0.07 | | | | | | |
| v/c Ratio | 0.53 | 0.72 | 0.05 | 0.38 | 0.30 | 0.22 | | 0.87 | | | 0.87 | |
| Uniform Delay, d1 | 23.1 | 25.1 | 19.4 | 21.9 | 21.2 | 20.6 | | 15.4 | | | 15.3 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.58 | | | 0.60 | |
| Incremental Delay, d2 | 5.5 | 7.5 | 0.2 | 6.9 | 1.3 | 1.0 | | 2.3 | | | 3.2 | |
| Delay (s) | 28.6 | 32.6 | 19.6 | 28.8 | 22.6 | 21.6 | | 11.2 | | | 12.4 | |
| Level of Service | C | C | B | C | C | C | | B | | | B | |
| Approach Delay (s) | | 30.8 | | | 23.4 | | | 11.2 | | | 12.4 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 14.5 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.82 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.7% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Avenue

Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | | ✣ | | | ✣ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 460 | 13 | 3 | 318 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 1 | 523 | 15 | 3 | 361 | 5 | 12 | 3 | 18 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 71 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.79 | | | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | |
| vC, conflicting volume | 366 | | | 538 | | | 906 | 905 | 530 | 923 | 910 | 364 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 366 | | | 416 | | | 882 | 880 | 407 | 902 | 887 | 364 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 94 | 98 | 96 | 98 | 99 | 100 |
| cM capacity (veh/h) | 1198 | | | 909 | | | 210 | 227 | 514 | 196 | 225 | 686 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 539 | 369 | 34 | 8 |
| Volume Left | 1 | 3 | 12 | 3 |
| Volume Right | 15 | 5 | 18 | 2 |
| cSH | 1198 | 909 | 310 | 258 |
| Volume to Capacity | 0.00 | 0.00 | 0.11 | 0.03 |
| Queue Length 95th (ft) | 0 | 0 | 9 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 18.0 | 19.4 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 18.0 | 19.4 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.9 | | |
| Intersection Capacity Utilization | 35.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue

Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | | ✣ | | | ✣ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 27 | 534 | 14 | 11 | 266 | 20 | 7 | 16 | 29 | 14 | 9 | 5 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 29 | 568 | 15 | 12 | 283 | 21 | 7 | 17 | 31 | 15 | 10 | 5 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 304 | | | 583 | | | 960 | 961 | 576 | 989 | 957 | 294 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 259 | | | 583 | | | 957 | 958 | 576 | 989 | 955 | 247 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 96 | 93 | 94 | 92 | 96 | 99 |
| cM capacity (veh/h) | 1237 | | | 1001 | | | 210 | 235 | 521 | 185 | 236 | 747 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 612 | 316 | 55 | 30 |
| Volume Left | 29 | 12 | 7 | 15 |
| Volume Right | 15 | 21 | 31 | 5 |
| cSH | 1237 | 1001 | 331 | 232 |
| Volume to Capacity | 0.02 | 0.01 | 0.17 | 0.13 |
| Queue Length 95th (ft) | 2 | 1 | 15 | 11 |
| Control Delay (s) | 0.6 | 0.4 | 18.0 | 22.8 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.6 | 0.4 | 18.0 | 22.8 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.2 | | |
| Intersection Capacity Utilization | 50.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

HCM Unsignalized Intersection Capacity Analysis
106: California Street & 14th Avenue
Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 23 | 542 | 12 | 51 | 283 | 30 | 1 | 13 | 26 | 125 | 12 | 13 |
| Peak Hour Factor | 0.91 | 0.91 | 0.25 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 25 | 596 | 48 | 56 | 311 | 33 | 1 | 14 | 29 | 137 | 13 | 14 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 344 | | | 644 | | | 959 | 1126 | 322 | 824 | 1134 | 172 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 277 | | | 644 | | | 916 | 1091 | 322 | 776 | 1099 | 98 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 94 | | | 99 | 93 | 96 | 42 | 93 | 98 |
| cM capacity (veh/h) | 1247 | | | 951 | | | 194 | 192 | 680 | 238 | 190 | 909 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 323 | 346 | 212 | 188 | 44 | 165 |
| Volume Left | 25 | 0 | 56 | 0 | 1 | 137 |
| Volume Right | 0 | 48 | 0 | 33 | 29 | 14 |
| cSH | 1247 | 1700 | 951 | 1700 | 360 | 249 |
| Volume to Capacity | 0.02 | 0.20 | 0.06 | 0.11 | 0.12 | 0.66 |
| Queue Length 95th (ft) | 2 | 0 | 5 | 0 | 10 | 105 |
| Control Delay (s) | 0.8 | 0.0 | 2.8 | 0.0 | 16.4 | 44.0 |
| Lane LOS | A | | A | | C | E |
| Approach Delay (s) | 0.4 | | 1.5 | | 16.4 | 44.0 |
| Approach LOS | | | | | C | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 6.9 | | |
| Intersection Capacity Utilization | 51.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



HCM Signalized Intersection Capacity Analysis
107: California Street & Park Presidio Boulevard
Year 2025 Variant AM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3198 | | | 4960 | | | 4998 | |
| Flt Permitted | 0.48 | 1.00 | | 0.27 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 837 | 3318 | | 470 | 3198 | | | 4960 | | | 4998 | |
| Volume (vph) | 86 | 585 | 22 | 93 | 252 | 96 | 0 | 2245 | 251 | 0 | 2091 | 112 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 89 | 603 | 23 | 96 | 260 | 99 | 0 | 2314 | 259 | 0 | 2156 | 115 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 16 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 89 | 623 | 0 | 96 | 356 | 0 | 0 | 2557 | 0 | 0 | 2264 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 256 | 1015 | | 144 | 978 | | | 2976 | | | 2999 | |
| v/s Ratio Prot | | 0.19 | | | 0.11 | | | c0.52 | | | 0.45 | |
| v/s Ratio Perm | 0.11 | | | c0.20 | | | | | | | | |
| v/c Ratio | 0.35 | 0.61 | | 0.67 | 0.36 | | | 0.86 | | | 0.75 | |
| Uniform Delay, d1 | 22.9 | 25.2 | | 25.7 | 23.0 | | | 14.0 | | | 12.4 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.64 | |
| Incremental Delay, d2 | 3.7 | 2.8 | | 21.8 | 1.0 | | | 3.5 | | | 0.9 | |
| Delay (s) | 26.6 | 28.0 | | 47.5 | 24.1 | | | 17.5 | | | 8.8 | |
| Level of Service | C | C | | D | C | | | B | | | A | |
| Approach Delay (s) | | 27.8 | | | 29.0 | | | 17.5 | | | 8.8 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.3 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.79 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5022 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5022 | |
| Volume (vph) | 39 | 74 | 0 | 2639 | 2333 | 43 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 41 | 77 | 0 | 2749 | 2430 | 45 |
| RTOR Reduction (vph) | 0 | 11 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 41 | 66 | 0 | 2749 | 2473 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Effective Green, g (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Actuated g/C Ratio | 0.05 | 0.17 | | 0.86 | 0.73 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 88 | 483 | | 4313 | 3687 | |
| v/s Ratio Prot | c0.02 | 0.02 | | c0.55 | c0.49 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.47 | 0.14 | | 0.64 | 0.67 | |
| Uniform Delay, d1 | 39.3 | 29.9 | | 1.9 | 5.9 | |
| Progression Factor | 1.00 | 1.00 | | 0.25 | 1.00 | |
| Incremental Delay, d2 | 3.9 | 0.1 | | 0.4 | 1.0 | |
| Delay (s) | 43.2 | 30.0 | | 0.9 | 6.9 | |
| Level of Service | D | C | | A | A | |
| Approach Delay (s) | 34.6 | | | 0.9 | 6.9 | |
| Approach LOS | C | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 4.4 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 61.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

**Existing plus Project Conditions**
**Alternative 3: Wings Removed Alternative (Variant)**
**AM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue

Year 2025 Variant AM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 538 | 13 | 15 | 256 | 1 | 3 | 1 | 39 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 585 | 14 | 16 | 278 | 1 | 3 | 1 | 42 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 279 | | | 599 | | | 913 | 908 | 592 | 951 | 915 | 279 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 279 | | | 599 | | | 913 | 908 | 592 | 951 | 915 | 279 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 92 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1295 | | | 988 | | | 249 | 272 | 510 | 218 | 270 | 765 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 601 | 296 | 47 | 12 |
| Volume Left | 2 | 16 | 3 | 4 |
| Volume Right | 14 | 1 | 42 | 3 |
| cSH | 1295 | 988 | 466 | 297 |
| Volume to Capacity | 0.00 | 0.02 | 0.10 | 0.04 |
| Queue Length 95th (ft) | 0 | 1 | 8 | 3 |
| Control Delay (s) | 0.0 | 0.6 | 13.6 | 17.7 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.6 | 13.6 | 17.7 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 39.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

Year 2025 Variant AM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 19 | 549 | 13 | 13 | 268 | 19 | 2 | 21 | 37 | 6 | 2 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 20 | 572 | 14 | 14 | 279 | 20 | 2 | 22 | 39 | 6 | 2 | 2 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 605 | 313 | 63 | 10 |
| Volume Left (vph) | 20 | 14 | 2 | 6 |
| Volume Right (vph) | 14 | 20 | 39 | 2 |
| Hadj (s) | -0.01 | -0.03 | -0.36 | 0.00 |
| Departure Headway (s) | 4.5 | 4.7 | 5.6 | 6.1 |
| Degree Utilization, x | 0.75 | 0.41 | 0.10 | 0.02 |
| Capacity (veh/h) | 785 | 733 | 577 | 517 |
| Control Delay (s) | 19.6 | 11.0 | 9.2 | 9.2 |
| Approach Delay (s) | 19.6 | 11.0 | 9.2 | 9.2 |
| Approach LOS | C | B | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 16.1 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 46.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
## 102: Lake Street & 14th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 21 | 566 | 5 | 144 | 292 | 19 | 4 | 19 | 40 | 3 | 2 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 21 | 578 | 5 | 147 | 298 | 19 | 4 | 19 | 41 | 3 | 2 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 317 | | | 583 | | | 1230 | 1234 | 580 | 1275 | 1227 | 308 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 275 | | | 583 | | | 1244 | 1249 | 580 | 1292 | 1241 | 265 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 85 | | | 97 | 86 | 92 | 97 | 99 | 99 |
| cM capacity (veh/h) | 1224 | | | 1002 | | | 124 | 138 | 518 | 96 | 139 | 733 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 604 | 464 | 64 | 9 |
| Volume Left | 21 | 147 | 4 | 3 |
| Volume Right | 5 | 19 | 41 | 4 |
| cSH | 1224 | 1002 | 255 | 176 |
| Volume to Capacity | 0.02 | 0.15 | 0.25 | 0.05 |
| Queue Length 95th (ft) | 1 | 13 | 24 | 4 |
| Control Delay (s) | 0.5 | 4.1 | 23.8 | 26.5 |
| Lane LOS | A | A | C | D |
| Approach Delay (s) | 0.5 | 4.1 | 23.8 | 26.5 |
| Approach LOS | | | C | D |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.5 | | |
| Intersection Capacity Utilization | 69.5% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
## 103: Lake Street & Park Presidio Boulevard



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4944 | |
| Flt Permitted | 0.60 | 1.00 | 1.00 | 0.28 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1099 | 1756 | 1492 | 484 | 1756 | 1492 | | 5012 | | | 4944 | |
| Volume (vph) | 182 | 399 | 28 | 59 | 163 | 105 | 0 | 2350 | 77 | 0 | 2118 | 292 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 190 | 416 | 29 | 61 | 170 | 109 | 0 | 2448 | 80 | 0 | 2206 | 304 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 21 | 0 |
| Lane Group Flow (vph) | 190 | 416 | 26 | 61 | 170 | 107 | 0 | 2524 | 0 | 0 | 2489 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 362 | 578 | 491 | 159 | 578 | 491 | | 2889 | | | 2850 | |
| v/s Ratio Prot | | c0.24 | | | 0.10 | | | c0.50 | | | 0.50 | |
| v/s Ratio Perm | 0.17 | | 0.02 | 0.13 | | 0.07 | | | | | | |
| v/c Ratio | 0.52 | 0.72 | 0.05 | 0.38 | 0.29 | 0.22 | | 0.87 | | | 0.87 | |
| Uniform Delay, d1 | 23.1 | 25.1 | 19.4 | 21.9 | 21.2 | 20.6 | | 15.4 | | | 15.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.58 | | | 0.61 | |
| Incremental Delay, d2 | 5.4 | 7.5 | 0.2 | 6.9 | 1.3 | 1.0 | | 2.3 | | | 3.2 | |
| Delay (s) | 28.5 | 32.6 | 19.6 | 28.8 | 22.5 | 21.6 | | 11.2 | | | 12.5 | |
| Level of Service | C | C | B | C | C | C | | B | | | B | |
| Approach Delay (s) | | 30.8 | | | 23.3 | | | 11.2 | | | 12.5 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 14.5 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.82 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.8% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Avenue

Year 2025 Variant AM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✥ | | | ✥ | | | ✥ | | | ✥ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 460 | 13 | 3 | 314 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 1 | 523 | 15 | 3 | 357 | 5 | 12 | 3 | 18 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 71 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.79 | | | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | |
| vC, conflicting volume | 361 | | | 538 | | | 902 | 901 | 530 | 918 | 906 | 359 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 361 | | | 416 | | | 876 | 874 | 407 | 897 | 881 | 359 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 94 | 99 | 96 | 98 | 99 | 100 |
| cM capacity (veh/h) | 1203 | | | 909 | | | 212 | 229 | 514 | 198 | 227 | 690 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 539 | 365 | 34 | 8 |
| Volume Left | 1 | 3 | 12 | 3 |
| Volume Right | 15 | 5 | 18 | 2 |
| cSH | 1203 | 909 | 312 | 260 |
| Volume to Capacity | 0.00 | 0.00 | 0.11 | 0.03 |
| Queue Length 95th (ft) | 0 | 0 | 9 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 17.9 | 19.3 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 17.9 | 19.3 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.9 | | |
| Intersection Capacity Utilization | 35.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue

Year 2025 Variant AM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✥ | | | ✥ | | | ✥ | | | ✥ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 25 | 532 | 14 | 11 | 266 | 20 | 7 | 15 | 29 | 14 | 9 | 5 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 27 | 566 | 15 | 12 | 283 | 21 | 7 | 16 | 31 | 15 | 10 | 5 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 304 | | | 581 | | | 954 | 954 | 573 | 982 | 951 | 294 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 259 | | | 581 | | | 951 | 951 | 573 | 981 | 948 | 247 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 97 | 93 | 94 | 92 | 96 | 99 |
| cM capacity (veh/h) | 1237 | | | 1003 | | | 213 | 238 | 522 | 188 | 239 | 747 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 607 | 316 | 54 | 30 |
| Volume Left | 27 | 12 | 7 | 15 |
| Volume Right | 15 | 21 | 31 | 5 |
| cSH | 1237 | 1003 | 337 | 236 |
| Volume to Capacity | 0.02 | 0.01 | 0.16 | 0.13 |
| Queue Length 95th (ft) | 2 | 1 | 14 | 11 |
| Control Delay (s) | 0.6 | 0.4 | 17.7 | 22.5 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.6 | 0.4 | 17.7 | 22.5 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.1 | | |
| Intersection Capacity Utilization | 49.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

Year 2025 Variant AM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 21 | 542 | 12 | 52 | 283 | 30 | 1 | 12 | 26 | 126 | 12 | 13 |
| Peak Hour Factor | 0.91 | 0.91 | 0.25 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 23 | 596 | 48 | 57 | 311 | 33 | 1 | 13 | 29 | 138 | 13 | 14 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 344 | | | 644 | | | 956 | 1124 | 322 | 821 | 1132 | 172 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 277 | | | 644 | | | 914 | 1089 | 322 | 773 | 1096 | 98 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 94 | | | 99 | 93 | 96 | 42 | 93 | 98 |
| cM capacity (veh/h) | 1247 | | | 951 | | | 195 | 193 | 680 | 240 | 191 | 909 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 321 | 346 | 213 | 188 | 43 | 166 |
| Volume Left | 23 | 0 | 57 | 0 | 1 | 138 |
| Volume Right | 0 | 48 | 0 | 33 | 29 | 14 |
| cSH | 1247 | 1700 | 951 | 1700 | 369 | 251 |
| Volume to Capacity | 0.02 | 0.20 | 0.06 | 0.11 | 0.12 | 0.66 |
| Queue Length 95th (ft) | 1 | 0 | 5 | 0 | 10 | 105 |
| Control Delay (s) | 0.7 | 0.0 | 2.9 | 0.0 | 16.0 | 43.6 |
| Lane LOS | A | | A | | C | E |
| Approach Delay (s) | 0.4 | | 1.5 | | 16.0 | 43.6 |
| Approach LOS | | | | | C | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 6.9 | | |
| Intersection Capacity Utilization | 51.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

Year 2025 Variant AM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3198 | | | 4960 | | | 4998 | |
| Flt Permitted | 0.48 | 1.00 | | 0.27 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 837 | 3318 | | 468 | 3198 | | | 4960 | | | 4998 | |
| Volume (vph) | 86 | 586 | 22 | 93 | 252 | 96 | 0 | 2245 | 251 | 0 | 2093 | 112 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 89 | 604 | 23 | 96 | 260 | 99 | 0 | 2314 | 259 | 0 | 2158 | 115 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 16 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 89 | 624 | 0 | 96 | 356 | 0 | 0 | 2557 | 0 | 0 | 2266 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 256 | 1015 | | 143 | 978 | | | 2976 | | | 2999 | |
| v/s Ratio Prot | | 0.19 | | | 0.11 | | | c0.52 | | | 0.45 | |
| v/s Ratio Perm | 0.11 | | | c0.20 | | | | | | | | |
| v/c Ratio | 0.35 | 0.61 | | 0.67 | 0.36 | | | 0.86 | | | 0.76 | |
| Uniform Delay, d1 | 22.9 | 25.2 | | 25.8 | 23.0 | | | 14.0 | | | 12.4 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.64 | |
| Incremental Delay, d2 | 3.7 | 2.8 | | 22.3 | 1.0 | | | 3.5 | | | 0.9 | |
| Delay (s) | 26.6 | 28.0 | | 48.1 | 24.1 | | | 17.5 | | | 8.8 | |
| Level of Service | C | C | | D | C | | | B | | | A | |
| Approach Delay (s) | | 27.8 | | | 29.2 | | | 17.5 | | | 8.8 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.4 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.80 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5025 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5025 | |
| Volume (vph) | 41 | 77 | 0 | 2639 | 2333 | 35 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 43 | 80 | 0 | 2749 | 2430 | 36 |
| RTOR Reduction (vph) | 0 | 11 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 43 | 69 | 0 | 2749 | 2465 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Effective Green, g (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Actuated g/C Ratio | 0.05 | 0.17 | | 0.86 | 0.73 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 88 | 483 | | 4313 | 3689 | |
| v/s Ratio Prot | c0.02 | 0.02 | | c0.55 | c0.49 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.49 | 0.14 | | 0.64 | 0.67 | |
| Uniform Delay, d1 | 39.4 | 29.9 | | 1.9 | 5.9 | |
| Progression Factor | 1.00 | 1.00 | | 0.25 | 1.00 | |
| Incremental Delay, d2 | 4.2 | 0.1 | | 0.4 | 1.0 | |
| Delay (s) | 43.6 | 30.0 | | 0.9 | 6.9 | |
| Level of Service | D | C | | A | A | |
| Approach Delay (s) | 34.8 | | | 0.9 | 6.9 | |
| Approach LOS | C | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 4.4 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 61.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

**Existing plus Project Conditions**
**Alternative 4: Battery Caulfield Alternative (Variant)**
**AM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue

Year 2025 Variant AM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 537 | 13 | 15 | 253 | 1 | 3 | 1 | 39 | 4 | 4 | 3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 584 | 14 | 16 | 275 | 1 | 3 | 1 | 42 | 4 | 4 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 276 | | | 598 | | | 909 | 904 | 591 | 946 | 910 | 276 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 276 | | | 598 | | | 909 | 904 | 591 | 946 | 910 | 276 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 92 | 98 | 98 | 100 |
| cM capacity (veh/h) | 1299 | | | 989 | | | 250 | 274 | 511 | 219 | 271 | 768 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 600 | 292 | 47 | 12 |
| Volume Left | 2 | 16 | 3 | 4 |
| Volume Right | 14 | 1 | 42 | 3 |
| cSH | 1299 | 989 | 467 | 298 |
| Volume to Capacity | 0.00 | 0.02 | 0.10 | 0.04 |
| Queue Length 95th (ft) | 0 | 1 | 8 | 3 |
| Control Delay (s) | 0.0 | 0.6 | 13.6 | 17.6 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.0 | 0.6 | 13.6 | 17.6 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 39.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

Year 2025 Variant AM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 18 | 548 | 13 | 13 | 265 | 18 | 2 | 20 | 37 | 6 | 2 | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 19 | 571 | 14 | 14 | 276 | 19 | 2 | 21 | 39 | 6 | 2 | 2 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 603 | 308 | 61 | 10 |
| Volume Left (vph) | 19 | 14 | 2 | 6 |
| Volume Right (vph) | 14 | 19 | 39 | 2 |
| Hadj (s) | -0.01 | -0.03 | -0.37 | 0.00 |
| Departure Headway (s) | 4.5 | 4.7 | 5.6 | 6.1 |
| Degree Utilization, x | 0.75 | 0.41 | 0.10 | 0.02 |
| Capacity (veh/h) | 787 | 734 | 579 | 518 |
| Control Delay (s) | 19.4 | 10.9 | 9.2 | 9.2 |
| Approach Delay (s) | 19.4 | 10.9 | 9.2 | 9.2 |
| Approach LOS | C | B | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 16.0 | | |
| HCM Level of Service | C | | |
| Intersection Capacity Utilization | 46.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 20 | 566 | 5 | 142 | 288 | 18 | 4 | 18 | 40 | 3 | 2 | 4 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Hourly flow rate (vph) | 20 | 578 | 5 | 145 | 294 | 18 | 4 | 18 | 41 | 3 | 2 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 312 | | | 583 | | | 1219 | 1223 | 580 | 1264 | 1216 | 303 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 270 | | | 583 | | | 1232 | 1237 | 580 | 1280 | 1230 | 260 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 86 | | | 97 | 87 | 92 | 97 | 99 | 99 |
| cM capacity (veh/h) | 1230 | | | 1002 | | | 126 | 141 | 518 | 99 | 142 | 738 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 603 | 457 | 63 | 9 |
| Volume Left | 20 | 145 | 4 | 3 |
| Volume Right | 5 | 18 | 41 | 4 |
| cSH | 1230 | 1002 | 262 | 181 |
| Volume to Capacity | 0.02 | 0.14 | 0.24 | 0.05 |
| Queue Length 95th (ft) | 1 | 13 | 23 | 4 |
| Control Delay (s) | 0.5 | 4.0 | 23.1 | 26.0 |
| Lane LOS | A | A | C | D |
| Approach Delay (s) | 0.5 | 4.0 | 23.1 | 26.0 |
| Approach LOS | | | C | D |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.4 | | | |
| Intersection Capacity Utilization | 69.0% | | ICU Level of Service | C |
| Analysis Period (min) | 15 | | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5012 | | | 4945 | |
| Flt Permitted | 0.61 | 1.00 | 1.00 | 0.28 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 1102 | 1756 | 1492 | 484 | 1756 | 1492 | | 5012 | | | 4945 | |
| Volume (vph) | 182 | 399 | 28 | 59 | 162 | 105 | 0 | 2350 | 77 | 0 | 2110 | 287 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 190 | 416 | 29 | 61 | 169 | 109 | 0 | 2448 | 80 | 0 | 2198 | 299 |
| RTOR Reduction (vph) | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 21 | 0 |
| Lane Group Flow (vph) | 190 | 416 | 25 | 61 | 169 | 107 | 0 | 2524 | 0 | 0 | 2476 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 363 | 578 | 491 | 159 | 578 | 491 | | 2889 | | | 2851 | |
| v/s Ratio Prot | | c0.24 | | | 0.10 | | | c0.50 | | | 0.50 | |
| v/s Ratio Perm | 0.17 | | 0.02 | 0.13 | | 0.07 | | | | | | |
| v/c Ratio | 0.52 | 0.72 | 0.05 | 0.38 | 0.29 | 0.22 | | 0.87 | | | 0.87 | |
| Uniform Delay, d1 | 23.1 | 25.1 | 19.4 | 21.9 | 21.1 | 20.6 | | 15.4 | | | 15.3 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.58 | | | 0.59 | |
| Incremental Delay, d2 | 5.3 | 7.5 | 0.2 | 6.9 | 1.3 | 1.0 | | 2.3 | | | 3.1 | |
| Delay (s) | 28.4 | 32.6 | 19.6 | 28.8 | 22.4 | 21.6 | | 11.2 | | | 12.2 | |
| Level of Service | C | C | B | C | C | C | | B | | | B | |
| Approach Delay (s) | | 30.8 | | | 23.3 | | | 11.2 | | | 12.2 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| HCM Average Control Delay | 14.3 | | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.82 | | | |
| Actuated Cycle Length (s) | 85.0 | | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.5% | | ICU Level of Service | D |
| Analysis Period (min) | 15 | | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
104: Lake Street & Funston Avenue

Year 2025 Variant AM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 1 | 460 | 13 | 3 | 313 | 4 | 11 | 3 | 16 | 3 | 2 | 2 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 1 | 523 | 15 | 3 | 356 | 5 | 12 | 3 | 18 | 3 | 2 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 71 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.79 | | | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | |
| vC, conflicting volume | 360 | | | 538 | | | 901 | 899 | 530 | 917 | 905 | 358 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 360 | | | 416 | | | 874 | 873 | 407 | 895 | 879 | 358 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 94 | 99 | 96 | 98 | 99 | 100 |
| cM capacity (veh/h) | 1204 | | | 909 | | | 212 | 229 | 514 | 198 | 227 | 691 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 539 | 364 | 34 | 8 |
| Volume Left | 1 | 3 | 12 | 3 |
| Volume Right | 15 | 5 | 18 | 2 |
| cSH | 1204 | 909 | 312 | 261 |
| Volume to Capacity | 0.00 | 0.00 | 0.11 | 0.03 |
| Queue Length 95th (ft) | 0 | 0 | 9 | 2 |
| Control Delay (s) | 0.0 | 0.1 | 17.9 | 19.2 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.0 | 0.1 | 17.9 | 19.2 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.9 | | |
| Intersection Capacity Utilization | 35.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
105: California Street & 15th Avenue

Year 2025 Variant AM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 24 | 531 | 14 | 11 | 265 | 20 | 7 | 15 | 29 | 14 | 9 | 5 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 26 | 565 | 15 | 12 | 282 | 21 | 7 | 16 | 31 | 15 | 10 | 5 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.94 | | | | | | 0.94 | 0.94 | | 0.94 | 0.94 | 0.94 |
| vC, conflicting volume | 303 | | | 580 | | | 949 | 950 | 572 | 978 | 947 | 293 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 257 | | | 580 | | | 946 | 947 | 572 | 977 | 943 | 246 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 97 | 93 | 94 | 92 | 96 | 99 |
| cM capacity (veh/h) | 1238 | | | 1004 | | | 215 | 239 | 523 | 190 | 240 | 748 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 605 | 315 | 54 | 30 |
| Volume Left | 26 | 12 | 7 | 15 |
| Volume Right | 15 | 21 | 31 | 5 |
| cSH | 1238 | 1004 | 338 | 237 |
| Volume to Capacity | 0.02 | 0.01 | 0.16 | 0.13 |
| Queue Length 95th (ft) | 2 | 1 | 14 | 11 |
| Control Delay (s) | 0.6 | 0.4 | 17.7 | 22.3 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.6 | 0.4 | 17.7 | 22.3 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.1 | | |
| Intersection Capacity Utilization | 49.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

Year 2025 Variant AM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 20 | 542 | 12 | 51 | 282 | 30 | 1 | 12 | 26 | 124 | 12 | 13 |
| Peak Hour Factor | 0.91 | 0.91 | 0.25 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 22 | 596 | 48 | 56 | 310 | 33 | 1 | 13 | 29 | 136 | 13 | 14 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.96 | | | | | | 0.96 | 0.96 | | 0.96 | 0.96 | 0.96 |
| vC, conflicting volume | 343 | | | 644 | | | 951 | 1119 | 322 | 815 | 1126 | 171 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 276 | | | 644 | | | 909 | 1083 | 322 | 767 | 1091 | 97 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 94 | | | 99 | 93 | 96 | 44 | 93 | 98 |
| cM capacity (veh/h) | 1248 | | | 951 | | | 197 | 195 | 680 | 243 | 193 | 909 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 320 | 346 | 211 | 188 | 43 | 164 |
| Volume Left | 22 | 0 | 56 | 0 | 1 | 136 |
| Volume Right | 0 | 48 | 0 | 33 | 29 | 14 |
| cSH | 1248 | 1700 | 951 | 1700 | 372 | 254 |
| Volume to Capacity | 0.02 | 0.20 | 0.06 | 0.11 | 0.12 | 0.65 |
| Queue Length 95th (ft) | 1 | 0 | 5 | 0 | 10 | 101 |
| Control Delay (s) | 0.7 | 0.0 | 2.8 | 0.0 | 15.9 | 41.8 |
| Lane LOS | A | | A | | C | E |
| Approach Delay (s) | 0.3 | | 1.5 | | 15.9 | 41.8 |
| Approach LOS | | | | | C | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 6.6 | | |
| Intersection Capacity Utilization | 51.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

Year 2025 Variant AM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.98 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3318 | | 1668 | 3198 | | | 4960 | | | 4998 | |
| Flt Permitted | 0.48 | 1.00 | | 0.27 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 837 | 3318 | | 471 | 3198 | | | 4960 | | | 4998 | |
| Volume (vph) | 86 | 584 | 22 | 93 | 252 | 96 | 0 | 2245 | 251 | 0 | 2086 | 111 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 89 | 602 | 23 | 96 | 260 | 99 | 0 | 2314 | 259 | 0 | 2151 | 114 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 16 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 89 | 622 | 0 | 96 | 356 | 0 | 0 | 2557 | 0 | 0 | 2258 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Effective Green, g (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | | 51.0 | | | 51.0 | |
| Actuated g/C Ratio | 0.31 | 0.31 | | 0.31 | 0.31 | | | 0.60 | | | 0.60 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 256 | 1015 | | 144 | 978 | | | 2976 | | | 2999 | |
| v/s Ratio Prot | | 0.19 | | | 0.11 | | | c0.52 | | | 0.45 | |
| v/s Ratio Perm | 0.11 | | | c0.20 | | | | | | | | |
| v/c Ratio | 0.35 | 0.61 | | 0.67 | 0.36 | | | 0.86 | | | 0.75 | |
| Uniform Delay, d1 | 22.9 | 25.2 | | 25.7 | 23.0 | | | 14.0 | | | 12.4 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.63 | |
| Incremental Delay, d2 | 3.7 | 2.8 | | 21.8 | 1.0 | | | 3.5 | | | 0.9 | |
| Delay (s) | 26.6 | 28.0 | | 47.5 | 24.1 | | | 17.5 | | | 8.8 | |
| Level of Service | C | C | | D | C | | | B | | | A | |
| Approach Delay (s) | | 27.8 | | | 29.0 | | | 17.5 | | | 8.8 | |
| Approach LOS | | C | | | C | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 16.3 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.79 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5026 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5026 | |
| Volume (vph) | 32 | 63 | 0 | 2639 | 2333 | 32 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 33 | 66 | 0 | 2749 | 2430 | 33 |
| RTOR Reduction (vph) | 0 | 11 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 33 | 55 | 0 | 2749 | 2462 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Effective Green, g (s) | 4.2 | 14.6 | | 72.8 | 62.4 | |
| Actuated g/C Ratio | 0.05 | 0.17 | | 0.86 | 0.73 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 88 | 483 | | 4313 | 3690 | |
| v/s Ratio Prot | c0.02 | 0.02 | | c0.55 | c0.49 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.38 | 0.11 | | 0.64 | 0.67 | |
| Uniform Delay, d1 | 39.1 | 29.7 | | 1.9 | 5.9 | |
| Progression Factor | 1.00 | 1.00 | | 0.25 | 1.00 | |
| Incremental Delay, d2 | 2.7 | 0.1 | | 0.4 | 1.0 | |
| Delay (s) | 41.8 | 29.8 | | 0.9 | 6.9 | |
| Level of Service | D | C | | A | A | |
| Approach Delay (s) | 33.8 | | | 0.9 | 6.9 | |
| Approach LOS | C | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 4.3 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.63 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 61.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

**Existing plus Project Conditions**
**Alternative 1: PTMP Alternative (Variant)**
**PM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue

Year 2025 Variant PM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 309 | 10 | 25 | 413 | 4 | 4 | 1 | 25 | 7 | 3 | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 2 | 332 | 11 | 27 | 444 | 4 | 4 | 1 | 27 | 8 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 448 | | | 343 | | | 846 | 844 | 338 | 869 | 847 | 446 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 448 | | | 343 | | | 846 | 844 | 338 | 869 | 847 | 446 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 98 | 100 | 96 | 97 | 99 | 100 |
| cM capacity (veh/h) | 1123 | | | 1227 | | | 276 | 295 | 709 | 258 | 294 | 616 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 345 | 475 | 32 | 13 |
| Volume Left | 2 | 27 | 4 | 8 |
| Volume Right | 11 | 4 | 27 | 2 |
| cSH | 1123 | 1227 | 565 | 296 |
| Volume to Capacity | 0.00 | 0.02 | 0.06 | 0.04 |
| Queue Length 95th (ft) | 0 | 2 | 5 | 3 |
| Control Delay (s) | 0.1 | 0.7 | 11.8 | 17.7 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 11.8 | 17.7 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 49.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

Year 2025 Variant PM Peak Alt 1

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 26 | 310 | 5 | 18 | 433 | 9 | 8 | 52 | 17 | 7 | 3 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 29 | 341 | 5 | 20 | 476 | 10 | 9 | 57 | 19 | 8 | 3 | 1 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 375 | 505 | 85 | 12 |
| Volume Left (vph) | 29 | 20 | 9 | 8 |
| Volume Right (vph) | 5 | 10 | 19 | 1 |
| Hadj (s) | 0.01 | 0.00 | -0.11 | 0.07 |
| Departure Headway (s) | 4.8 | 4.6 | 5.8 | 6.2 |
| Degree Utilization, x | 0.50 | 0.65 | 0.14 | 0.02 |
| Capacity (veh/h) | 731 | 758 | 533 | 489 |
| Control Delay (s) | 12.5 | 15.9 | 9.8 | 9.3 |
| Approach Delay (s) | 12.5 | 15.9 | 9.8 | 9.3 |
| Approach LOS | B | C | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 14.0 | | |
| HCM Level of Service | B | | |
| Intersection Capacity Utilization | 38.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 25 | 306 | 3 | 126 | 457 | 30 | 2 | 35 | 49 | 6 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 27 | 329 | 3 | 135 | 491 | 32 | 2 | 38 | 53 | 6 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.85 | | | | | | 0.85 | 0.85 | | 0.85 | 0.85 | 0.85 |
| vC, conflicting volume | 524 | | | 332 | | | 1165 | 1179 | 331 | 1234 | 1165 | 508 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 439 | | | 332 | | | 1194 | 1211 | 331 | 1276 | 1194 | 420 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 89 | | | 98 | 72 | 93 | 92 | 99 | 100 |
| cM capacity (veh/h) | 961 | | | 1238 | | | 125 | 135 | 716 | 81 | 138 | 541 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 359 | 659 | 92 | 9 |
| Volume Left | 27 | 135 | 2 | 6 |
| Volume Right | 3 | 32 | 53 | 1 |
| cSH | 961 | 1238 | 251 | 96 |
| Volume to Capacity | 0.03 | 0.11 | 0.37 | 0.09 |
| Queue Length 95th (ft) | 2 | 9 | 41 | 7 |
| Control Delay (s) | 0.9 | 2.7 | 27.5 | 46.2 |
| Lane LOS | A | A | D | E |
| Approach Delay (s) | 0.9 | 2.7 | 27.5 | 46.2 |
| Approach LOS | | | D | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 4.5 | | |
| Intersection Capacity Utilization | 65.4% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5015 | | | 4963 | |
| Flt Permitted | 0.39 | 1.00 | 1.00 | 0.50 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 705 | 1756 | 1492 | 883 | 1756 | 1492 | | 5015 | | | 4963 | |
| Volume (vph) | 101 | 235 | 25 | 73 | 318 | 142 | 0 | 2174 | 72 | 0 | 2388 | 295 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 104 | 242 | 26 | 75 | 328 | 146 | 0 | 2241 | 74 | 0 | 2462 | 304 |
| RTOR Reduction (vph) | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 18 | 0 |
| Lane Group Flow (vph) | 104 | 242 | 24 | 75 | 328 | 143 | 0 | 2311 | 0 | 0 | 2748 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 1% | 1% | 3% | 1% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 232 | 578 | 491 | 291 | 578 | 491 | | 2891 | | | 2861 | |
| v/s Ratio Prot | | 0.14 | | | c0.19 | | | 0.46 | | | c0.55 | |
| v/s Ratio Perm | 0.15 | | 0.02 | 0.08 | | 0.10 | | | | | | |
| v/c Ratio | 0.45 | 0.42 | 0.05 | 0.26 | 0.57 | 0.29 | | 0.80 | | | 0.96 | |
| Uniform Delay, d1 | 22.4 | 22.2 | 19.4 | 20.9 | 23.5 | 21.1 | | 14.1 | | | 17.1 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.24 | | | 0.60 | |
| Incremental Delay, d2 | 6.2 | 2.2 | 0.2 | 2.1 | 4.0 | 1.5 | | 1.1 | | | 6.9 | |
| Delay (s) | 28.6 | 24.4 | 19.6 | 23.0 | 27.5 | 22.6 | | 18.7 | | | 17.1 | |
| Level of Service | C | C | B | C | C | C | | B | | | B | |
| Approach Delay (s) | | 25.2 | | | 25.6 | | | 18.7 | | | 17.1 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 19.0 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.82 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 85.0% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | | ✣ | | | ✣ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 13 | 288 | 6 | 7 | 511 | 5 | 18 | 1 | 16 | 1 | 1 | 4 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Hourly flow rate (vph) | 15 | 331 | 7 | 8 | 587 | 6 | 21 | 1 | 18 | 1 | 1 | 5 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 68 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.89 | | | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | |
| vC, conflicting volume | 593 | | | 338 | | | 976 | 974 | 334 | 990 | 974 | 590 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 593 | | | 260 | | | 973 | 970 | 256 | 988 | 971 | 590 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 90 | 99 | 97 | 99 | 99 | 99 |
| cM capacity (veh/h) | 988 | | | 1172 | | | 203 | 223 | 704 | 194 | 223 | 511 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 353 | 601 | 40 | 7 |
| Volume Left | 15 | 8 | 21 | 1 |
| Volume Right | 7 | 6 | 18 | 5 |
| cSH | 988 | 1172 | 302 | 344 |
| Volume to Capacity | 0.02 | 0.01 | 0.13 | 0.02 |
| Queue Length 95th (ft) | 1 | 1 | 11 | 2 |
| Control Delay (s) | 0.5 | 0.2 | 18.8 | 15.7 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.5 | 0.2 | 18.8 | 15.7 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 41.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | | ✣ | | | ✣ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 43 | 413 | 7 | 16 | 412 | 19 | 8 | 15 | 30 | 10 | 10 | 6 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 44 | 426 | 7 | 16 | 425 | 20 | 8 | 15 | 31 | 10 | 10 | 6 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.87 | | | | | | 0.87 | 0.87 | | 0.87 | 0.87 | 0.87 |
| vC, conflicting volume | 444 | | | 433 | | | 997 | 995 | 429 | 1024 | 989 | 435 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 362 | | | 433 | | | 996 | 995 | 429 | 1028 | 988 | 351 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 99 | | | 95 | 92 | 95 | 94 | 95 | 99 |
| cM capacity (veh/h) | 1052 | | | 1137 | | | 179 | 203 | 630 | 160 | 205 | 607 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 477 | 461 | 55 | 27 |
| Volume Left | 44 | 16 | 8 | 10 |
| Volume Right | 7 | 20 | 31 | 6 |
| cSH | 1052 | 1137 | 319 | 215 |
| Volume to Capacity | 0.04 | 0.01 | 0.17 | 0.12 |
| Queue Length 95th (ft) | 3 | 1 | 15 | 11 |
| Control Delay (s) | 1.2 | 0.4 | 18.6 | 24.2 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 1.2 | 0.4 | 18.6 | 24.2 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.4 | | |
| Intersection Capacity Utilization | 50.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 43 | 404 | 6 | 62 | 439 | 34 | 2 | 9 | 30 | 101 | 23 | 6 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 45 | 425 | 6 | 65 | 462 | 36 | 2 | 9 | 32 | 106 | 24 | 6 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.91 | | | | | | 0.91 | 0.91 | | 0.91 | 0.91 | 0.91 |
| vC, conflicting volume | 498 | | | 432 | | | 899 | 1147 | 216 | 950 | 1133 | 249 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 353 | | | 432 | | | 793 | 1065 | 216 | 849 | 1049 | 81 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 94 | | | 99 | 95 | 96 | 47 | 87 | 99 |
| cM capacity (veh/h) | 1110 | | | 1139 | | | 214 | 185 | 795 | 201 | 189 | 885 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 258 | 219 | 296 | 267 | 43 | 137 |
| Volume Left | 45 | 0 | 65 | 0 | 2 | 106 |
| Volume Right | 0 | 6 | 0 | 36 | 32 | 6 |
| cSH | 1110 | 1700 | 1139 | 1700 | 428 | 206 |
| Volume to Capacity | 0.04 | 0.13 | 0.06 | 0.16 | 0.10 | 0.66 |
| Queue Length 95th (ft) | 3 | 0 | 5 | 0 | 8 | 101 |
| Control Delay (s) | 1.8 | 0.0 | 2.3 | 0.0 | 14.3 | 51.4 |
| Lane LOS | A | | A | | B | F |
| Approach Delay (s) | 1.0 | | 1.2 | | 14.3 | 51.4 |
| Approach LOS | | | | | B | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 7.2 | | |
| Intersection Capacity Utilization | 51.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3303 | | 1668 | 3216 | | | 4968 | | | 4994 | |
| Flt Permitted | 0.37 | 1.00 | | 0.40 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 642 | 3303 | | 708 | 3216 | | | 4968 | | | 4994 | |
| Volume (vph) | 66 | 438 | 31 | 153 | 397 | 125 | 0 | 2055 | 204 | 0 | 2348 | 138 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 69 | 461 | 33 | 161 | 418 | 132 | 0 | 2163 | 215 | 0 | 2472 | 145 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 14 | 0 | 0 | 8 | 0 |
| Lane Group Flow (vph) | 69 | 493 | 0 | 161 | 548 | 0 | 0 | 2364 | 0 | 0 | 2609 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Effective Green, g (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Actuated g/C Ratio | 0.39 | 0.39 | | 0.39 | 0.39 | | | 0.52 | | | 0.52 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 249 | 1282 | | 275 | 1249 | | | 2572 | | | 2585 | |
| v/s Ratio Prot | | 0.15 | | | 0.17 | | | 0.48 | | | c0.52 | |
| v/s Ratio Perm | 0.11 | | | c0.23 | | | | | | | | |
| v/c Ratio | 0.28 | 0.38 | | 0.59 | 0.44 | | | 0.92 | | | 1.01 | |
| Uniform Delay, d1 | 17.8 | 18.7 | | 20.6 | 19.2 | | | 18.9 | | | 20.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.37 | |
| Incremental Delay, d2 | 2.7 | 0.9 | | 8.8 | 1.1 | | | 6.7 | | | 13.5 | |
| Delay (s) | 20.6 | 19.6 | | 29.4 | 20.3 | | | 25.6 | | | 21.1 | |
| Level of Service | C | B | | C | C | | | C | | | C | |
| Approach Delay (s) | | 19.7 | | | 22.4 | | | 25.6 | | | 21.1 | |
| Approach LOS | | B | | | C | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 22.8 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.83 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 80.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5004 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5004 | |
| Volume (vph) | 105 | 162 | 0 | 2417 | 2521 | 110 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 109 | 169 | 0 | 2518 | 2626 | 115 |
| RTOR Reduction (vph) | 0 | 8 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 109 | 161 | 0 | 2518 | 2735 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 3.0 | 18.0 | | 74.0 | 59.0 | |
| Effective Green, g (s) | 3.0 | 18.0 | | 74.0 | 59.0 | |
| Actuated g/C Ratio | 0.04 | 0.21 | | 0.87 | 0.69 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 63 | 596 | | 4384 | 3473 | |
| v/s Ratio Prot | c0.06 | 0.06 | | c0.50 | c0.55 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 1.73 | 0.27 | | 0.57 | 0.79 | |
| Uniform Delay, d1 | 41.0 | 28.0 | | 1.4 | 8.8 | |
| Progression Factor | 1.00 | 1.00 | | 0.35 | 1.00 | |
| Incremental Delay, d2 | 386.2 | 0.2 | | 0.4 | 1.9 | |
| Delay (s) | 427.2 | 28.3 | | 0.9 | 10.7 | |
| Level of Service | F | C | | A | B | |
| Approach Delay (s) | 184.7 | | | 0.9 | 10.7 | |
| Approach LOS | F | | | A | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 14.9 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.77 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 63.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

**Existing plus Project Conditions**
**Alternative 2: Wings Retained/Trust Revised**
**Alternative (Variant)**
**PM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue

Year 2025 Variant PM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 290 | 10 | 25 | 392 | 4 | 4 | 1 | 25 | 7 | 3 | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 2 | 312 | 11 | 27 | 422 | 4 | 4 | 1 | 27 | 8 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 426 | | | 323 | | | 803 | 801 | 317 | 826 | 804 | 424 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 426 | | | 323 | | | 803 | 801 | 317 | 826 | 804 | 424 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 96 | 97 | 99 | 100 |
| cM capacity (veh/h) | 1144 | | | 1249 | | | 295 | 313 | 728 | 277 | 311 | 635 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 325 | 453 | 32 | 13 |
| Volume Left | 2 | 27 | 4 | 8 |
| Volume Right | 11 | 4 | 27 | 2 |
| cSH | 1144 | 1249 | 587 | 315 |
| Volume to Capacity | 0.00 | 0.02 | 0.05 | 0.04 |
| Queue Length 95th (ft) | 0 | 2 | 4 | 3 |
| Control Delay (s) | 0.1 | 0.7 | 11.5 | 16.9 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 11.5 | 16.9 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 48.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue

Year 2025 Variant PM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 7 | 310 | 5 | 18 | 412 | 9 | 8 | 33 | 17 | 7 | 3 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 8 | 341 | 5 | 20 | 453 | 10 | 9 | 36 | 19 | 8 | 3 | 1 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 354 | 482 | 64 | 12 |
| Volume Left (vph) | 8 | 20 | 9 | 8 |
| Volume Right (vph) | 5 | 10 | 19 | 1 |
| Hadj (s) | 0.00 | 0.00 | -0.15 | 0.07 |
| Departure Headway (s) | 4.7 | 4.5 | 5.6 | 6.0 |
| Degree Utilization, x | 0.46 | 0.61 | 0.10 | 0.02 |
| Capacity (veh/h) | 753 | 777 | 547 | 504 |
| Control Delay (s) | 11.5 | 14.2 | 9.3 | 9.1 |
| Approach Delay (s) | 11.5 | 14.2 | 9.3 | 9.1 |
| Approach LOS | B | B | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 12.8 | | |
| HCM Level of Service | B | | |
| Intersection Capacity Utilization | 41.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 102: Lake Street & 14th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 25 | 306 | 3 | 121 | 436 | 11 | 2 | 16 | 49 | 6 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 27 | 329 | 3 | 130 | 469 | 12 | 2 | 17 | 53 | 6 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.86 | | | | | | 0.86 | 0.86 | | 0.86 | 0.86 | 0.86 |
| vC, conflicting volume | 481 | | | 332 | | | 1121 | 1125 | 331 | 1181 | 1121 | 475 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 397 | | | 332 | | | 1140 | 1145 | 331 | 1210 | 1140 | 390 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 89 | | | 98 | 89 | 93 | 94 | 99 | 100 |
| cM capacity (veh/h) | 1010 | | | 1238 | | | 138 | 151 | 716 | 106 | 152 | 571 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 359 | 611 | 72 | 9 |
| Volume Left | 27 | 130 | 2 | 6 |
| Volume Right | 3 | 12 | 53 | 1 |
| cSH | 1010 | 1238 | 355 | 123 |
| Volume to Capacity | 0.03 | 0.11 | 0.20 | 0.07 |
| Queue Length 95th (ft) | 2 | 9 | 19 | 6 |
| Control Delay (s) | 0.9 | 2.7 | 17.7 | 36.4 |
| Lane LOS | A | A | C | E |
| Approach Delay (s) | 0.9 | 2.7 | 17.7 | 36.4 |
| Approach LOS | | | C | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.4 | | |
| Intersection Capacity Utilization | 61.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 103: Lake Street & Park Presidio Boulevard



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5015 | | | 4968 | |
| Flt Permitted | 0.41 | 1.00 | 1.00 | 0.50 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 753 | 1756 | 1492 | 883 | 1756 | 1492 | | 5015 | | | 4968 | |
| Volume (vph) | 101 | 235 | 25 | 73 | 299 | 142 | 0 | 2174 | 72 | 0 | 2332 | 269 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 104 | 242 | 26 | 75 | 308 | 146 | 0 | 2241 | 74 | 0 | 2404 | 277 |
| RTOR Reduction (vph) | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 17 | 0 |
| Lane Group Flow (vph) | 104 | 242 | 24 | 75 | 308 | 143 | 0 | 2311 | 0 | 0 | 2664 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 1% | 1% | 3% | 1% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 248 | 578 | 491 | 291 | 578 | 491 | | 2891 | | | 2864 | |
| v/s Ratio Prot | | 0.14 | | | c0.18 | | | 0.46 | | | c0.54 | |
| v/s Ratio Perm | 0.14 | | 0.02 | 0.08 | | 0.10 | | | | | | |
| v/c Ratio | 0.42 | 0.42 | 0.05 | 0.26 | 0.53 | 0.29 | | 0.80 | | | 0.93 | |
| Uniform Delay, d1 | 22.2 | 22.2 | 19.4 | 20.9 | 23.2 | 21.1 | | 14.1 | | | 16.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.24 | | | 0.60 | |
| Incremental Delay, d2 | 5.1 | 2.2 | 0.2 | 2.1 | 3.5 | 1.5 | | 1.1 | | | 5.1 | |
| Delay (s) | 27.3 | 24.4 | 19.6 | 23.0 | 26.7 | 22.6 | | 18.7 | | | 15.0 | |
| Level of Service | C | C | B | C | C | C | | B | | | B | |
| Approach Delay (s) | | 24.9 | | | 25.0 | | | 18.7 | | | 15.0 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 17.9 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.79 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 82.4% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
104: Lake Street & Funston Avenue

Year 2025 Variant PM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 13 | 288 | 6 | 7 | 492 | 5 | 18 | 1 | 16 | 1 | 1 | 4 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Hourly flow rate (vph) | 15 | 331 | 7 | 8 | 566 | 6 | 21 | 1 | 18 | 1 | 1 | 5 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 68 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.89 | | | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | |
| vC, conflicting volume | 571 | | | 338 | | | 954 | 952 | 334 | 968 | 952 | 568 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 571 | | | 260 | | | 949 | 946 | 256 | 964 | 947 | 568 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 90 | 100 | 97 | 99 | 100 | 99 |
| cM capacity (veh/h) | 1006 | | | 1172 | | | 211 | 231 | 704 | 202 | 230 | 526 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 353 | 579 | 40 | 7 |
| Volume Left | 15 | 8 | 21 | 1 |
| Volume Right | 7 | 6 | 18 | 5 |
| cSH | 1006 | 1172 | 311 | 355 |
| Volume to Capacity | 0.01 | 0.01 | 0.13 | 0.02 |
| Queue Length 95th (ft) | 1 | 1 | 11 | 1 |
| Control Delay (s) | 0.5 | 0.2 | 18.3 | 15.3 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.5 | 0.2 | 18.3 | 15.3 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 40.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



HCM Unsignalized Intersection Capacity Analysis
105: California Street & 15th Avenue

Year 2025 Variant PM Peak Alt 2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 26 | 396 | 7 | 16 | 412 | 19 | 8 | 13 | 30 | 10 | 10 | 6 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 27 | 408 | 7 | 16 | 425 | 20 | 8 | 13 | 31 | 10 | 10 | 6 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.87 | | | | | | 0.87 | 0.87 | | 0.87 | 0.87 | 0.87 |
| vC, conflicting volume | 444 | | | 415 | | | 944 | 943 | 412 | 971 | 937 | 435 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 362 | | | 415 | | | 936 | 934 | 412 | 966 | 927 | 351 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 99 | | | 96 | 94 | 95 | 94 | 95 | 99 |
| cM capacity (veh/h) | 1052 | | | 1154 | | | 200 | 224 | 644 | 181 | 226 | 607 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 442 | 461 | 53 | 27 |
| Volume Left | 27 | 16 | 8 | 10 |
| Volume Right | 7 | 20 | 31 | 6 |
| cSH | 1052 | 1154 | 352 | 238 |
| Volume to Capacity | 0.03 | 0.01 | 0.15 | 0.11 |
| Queue Length 95th (ft) | 2 | 1 | 13 | 9 |
| Control Delay (s) | 0.8 | 0.4 | 17.0 | 22.1 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.8 | 0.4 | 17.0 | 22.1 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.1 | | |
| Intersection Capacity Utilization | 41.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 26 | 404 | 6 | 62 | 439 | 34 | 2 | 7 | 30 | 96 | 23 | 6 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 27 | 425 | 6 | 65 | 462 | 36 | 2 | 7 | 32 | 101 | 24 | 6 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.91 | | | | | | 0.91 | 0.91 | | 0.91 | 0.91 | 0.91 |
| vC, conflicting volume | 498 | | | 432 | | | 863 | 1112 | 216 | 913 | 1097 | 249 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 353 | | | 432 | | | 754 | 1026 | 216 | 809 | 1010 | 81 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 94 | | | 99 | 96 | 96 | 54 | 88 | 99 |
| cM capacity (veh/h) | 1110 | | | 1139 | | | 233 | 198 | 795 | 220 | 203 | 885 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 240 | 219 | 296 | 267 | 41 | 132 |
| Volume Left | 27 | 0 | 65 | 0 | 2 | 101 |
| Volume Right | 0 | 6 | 0 | 36 | 32 | 6 |
| cSH | 1110 | 1700 | 1139 | 1700 | 478 | 225 |
| Volume to Capacity | 0.02 | 0.13 | 0.06 | 0.16 | 0.09 | 0.59 |
| Queue Length 95th (ft) | 2 | 0 | 5 | 0 | 7 | 83 |
| Control Delay (s) | 1.2 | 0.0 | 2.3 | 0.0 | 13.2 | 41.4 |
| Lane LOS | A | | A | | B | E |
| Approach Delay (s) | 0.6 | | 1.2 | | 13.2 | 41.4 |
| Approach LOS | | | | | B | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 5.8 | | |
| Intersection Capacity Utilization | 50.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3302 | | 1668 | 3216 | | | 4968 | | | 4993 | |
| Flt Permitted | 0.37 | 1.00 | | 0.41 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 642 | 3302 | | 714 | 3216 | | | 4968 | | | 4993 | |
| Volume (vph) | 66 | 433 | 31 | 153 | 397 | 125 | 0 | 2055 | 204 | 0 | 2292 | 138 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 69 | 456 | 33 | 161 | 418 | 132 | 0 | 2163 | 215 | 0 | 2413 | 145 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 14 | 0 | 0 | 8 | 0 |
| Lane Group Flow (vph) | 69 | 488 | 0 | 161 | 548 | 0 | 0 | 2364 | 0 | 0 | 2550 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Effective Green, g (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Actuated g/C Ratio | 0.39 | 0.39 | | 0.39 | 0.39 | | | 0.52 | | | 0.52 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 249 | 1282 | | 277 | 1249 | | | 2572 | | | 2585 | |
| v/s Ratio Prot | | 0.15 | | | 0.17 | | | 0.48 | | | c0.51 | |
| v/s Ratio Perm | 0.11 | | | c0.23 | | | | | | | | |
| v/c Ratio | 0.28 | 0.38 | | 0.58 | 0.44 | | | 0.92 | | | 0.99 | |
| Uniform Delay, d1 | 17.8 | 18.7 | | 20.5 | 19.2 | | | 18.9 | | | 20.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.36 | |
| Incremental Delay, d2 | 2.7 | 0.9 | | 8.6 | 1.1 | | | 6.7 | | | 9.1 | |
| Delay (s) | 20.6 | 19.5 | | 29.2 | 20.3 | | | 25.6 | | | 16.4 | |
| Level of Service | C | B | | C | C | | | C | | | B | |
| Approach Delay (s) | | 19.7 | | | 22.3 | | | 25.6 | | | 16.4 | |
| Approach LOS | | B | | | C | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.9 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.81 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 78.8% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5022 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5022 | |
| Volume (vph) | 48 | 80 | 0 | 2417 | 2521 | 48 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 50 | 83 | 0 | 2518 | 2626 | 50 |
| RTOR Reduction (vph) | 0 | 8 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 50 | 75 | 0 | 2518 | 2674 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 2.4 | 14.4 | | 74.6 | 62.6 | |
| Effective Green, g (s) | 2.4 | 14.4 | | 74.6 | 62.6 | |
| Actuated g/C Ratio | 0.03 | 0.17 | | 0.88 | 0.74 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 50 | 477 | | 4420 | 3699 | |
| v/s Ratio Prot | c0.03 | 0.03 | | c0.50 | c0.53 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 1.00 | 0.16 | | 0.57 | 0.72 | |
| Uniform Delay, d1 | 41.3 | 30.1 | | 1.3 | 6.3 | |
| Progression Factor | 1.00 | 1.00 | | 0.33 | 1.00 | |
| Incremental Delay, d2 | 127.3 | 0.2 | | 0.3 | 1.3 | |
| Delay (s) | 168.6 | 30.3 | | 0.8 | 7.6 | |
| Level of Service | F | C | | A | A | |
| Approach Delay (s) | 82.3 | | | 0.8 | 7.6 | |
| Approach LOS | F | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 6.2 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

**Existing plus Project Conditions**
**Alternative 3: Wings Removed Alternative**
**(Variant)**
**PM Peak Hour**

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 290 | 10 | 25 | 390 | 4 | 4 | 1 | 25 | 7 | 3 | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 2 | 312 | 11 | 27 | 419 | 4 | 4 | 1 | 27 | 8 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 424 | | | 323 | | | 801 | 799 | 317 | 824 | 802 | 422 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 424 | | | 323 | | | 801 | 799 | 317 | 824 | 802 | 422 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 96 | 97 | 99 | 100 |
| cM capacity (veh/h) | 1146 | | | 1249 | | | 296 | 313 | 728 | 278 | 312 | 636 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 325 | 451 | 32 | 13 |
| Volume Left | 2 | 27 | 4 | 8 |
| Volume Right | 11 | 4 | 27 | 2 |
| cSH | 1146 | 1249 | 588 | 316 |
| Volume to Capacity | 0.00 | 0.02 | 0.05 | 0.04 |
| Queue Length 95th (ft) | 0 | 2 | 4 | 3 |
| Control Delay (s) | 0.1 | 0.7 | 11.5 | 16.9 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 11.5 | 16.9 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 48.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 7 | 310 | 5 | 18 | 410 | 9 | 8 | 33 | 17 | 7 | 3 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 8 | 341 | 5 | 20 | 451 | 10 | 9 | 36 | 19 | 8 | 3 | 1 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 354 | 480 | 64 | 12 |
| Volume Left (vph) | 8 | 20 | 9 | 8 |
| Volume Right (vph) | 5 | 10 | 19 | 1 |
| Hadj (s) | 0.00 | 0.00 | -0.15 | 0.07 |
| Departure Headway (s) | 4.6 | 4.5 | 5.6 | 6.0 |
| Degree Utilization, x | 0.46 | 0.60 | 0.10 | 0.02 |
| Capacity (veh/h) | 753 | 777 | 548 | 504 |
| Control Delay (s) | 11.5 | 14.1 | 9.3 | 9.1 |
| Approach Delay (s) | 11.5 | 14.1 | 9.3 | 9.1 |
| Approach LOS | B | B | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 12.7 | | |
| HCM Level of Service | B | | |
| Intersection Capacity Utilization | 41.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

HCM Unsignalized Intersection Capacity Analysis
102: Lake Street & 14th Avenue
Year 2025 Variant PM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 25 | 306 | 3 | 120 | 434 | 11 | 2 | 16 | 49 | 6 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 27 | 329 | 3 | 129 | 467 | 12 | 2 | 17 | 53 | 6 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.86 | | | | | | 0.86 | 0.86 | | 0.86 | 0.86 | 0.86 |
| vC, conflicting volume | 478 | | | 332 | | | 1117 | 1121 | 331 | 1176 | 1117 | 473 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 395 | | | 332 | | | 1135 | 1140 | 331 | 1205 | 1135 | 388 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 90 | | | 98 | 89 | 93 | 94 | 99 | 100 |
| cM capacity (veh/h) | 1012 | | | 1238 | | | 140 | 152 | 716 | 107 | 153 | 573 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 359 | 608 | 72 | 9 |
| Volume Left | 27 | 129 | 2 | 6 |
| Volume Right | 3 | 12 | 53 | 1 |
| cSH | 1012 | 1238 | 356 | 124 |
| Volume to Capacity | 0.03 | 0.10 | 0.20 | 0.07 |
| Queue Length 95th (ft) | 2 | 9 | 19 | 5 |
| Control Delay (s) | 0.9 | 2.7 | 17.6 | 36.1 |
| Lane LOS | A | A | C | E |
| Approach Delay (s) | 0.9 | 2.7 | 17.6 | 36.1 |
| Approach LOS | | | C | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.4 | | |
| Intersection Capacity Utilization | 61.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



HCM Signalized Intersection Capacity Analysis
103: Lake Street & Park Presidio Boulevard
Year 2025 Variant PM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5015 | | | 4968 | |
| Flt Permitted | 0.41 | 1.00 | 1.00 | 0.50 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 753 | 1756 | 1492 | 883 | 1756 | 1492 | | 5015 | | | 4968 | |
| Volume (vph) | 101 | 235 | 25 | 73 | 299 | 142 | 0 | 2174 | 72 | 0 | 2327 | 266 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 104 | 242 | 26 | 75 | 308 | 146 | 0 | 2241 | 74 | 0 | 2399 | 274 |
| RTOR Reduction (vph) | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 17 | 0 |
| Lane Group Flow (vph) | 104 | 242 | 24 | 75 | 308 | 143 | 0 | 2311 | 0 | 0 | 2656 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 1% | 1% | 3% | 1% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 248 | 578 | 491 | 291 | 578 | 491 | | 2891 | | | 2864 | |
| v/s Ratio Prot | | 0.14 | | | c0.18 | | | 0.46 | | | c0.53 | |
| v/s Ratio Perm | 0.14 | | 0.02 | 0.08 | | 0.10 | | | | | | |
| v/c Ratio | 0.42 | 0.42 | 0.05 | 0.26 | 0.53 | 0.29 | | 0.80 | | | 0.93 | |
| Uniform Delay, d1 | 22.2 | 22.2 | 19.4 | 20.9 | 23.2 | 21.1 | | 14.1 | | | 16.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.24 | | | 0.59 | |
| Incremental Delay, d2 | 5.1 | 2.2 | 0.2 | 2.1 | 3.5 | 1.5 | | 1.1 | | | 5.0 | |
| Delay (s) | 27.3 | 24.4 | 19.6 | 23.0 | 26.7 | 22.6 | | 18.7 | | | 14.6 | |
| Level of Service | C | C | B | C | C | C | | B | | | B | |
| Approach Delay (s) | | 24.9 | | | 25.0 | | | 18.7 | | | 14.6 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 17.8 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.78 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 82.2% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

## HCM Unsignalized Intersection Capacity Analysis
### 104: Lake Street & Funston Avenue
Year 2025 Variant PM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | | ✣ | | | ✣ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 13 | 288 | 6 | 7 | 492 | 5 | 18 | 1 | 16 | 1 | 1 | 4 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Hourly flow rate (vph) | 15 | 331 | 7 | 8 | 566 | 6 | 21 | 1 | 18 | 1 | 1 | 5 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 68 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.89 | | | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | |
| vC, conflicting volume | 571 | | | 338 | | | 954 | 952 | 334 | 968 | 952 | 568 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 571 | | | 260 | | | 949 | 946 | 256 | 964 | 947 | 568 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 90 | 100 | 97 | 99 | 100 | 99 |
| cM capacity (veh/h) | 1006 | | | 1172 | | | 211 | 231 | 704 | 202 | 230 | 526 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 353 | 579 | 40 | 7 |
| Volume Left | 15 | 8 | 21 | 1 |
| Volume Right | 7 | 6 | 18 | 5 |
| cSH | 1006 | 1172 | 311 | 355 |
| Volume to Capacity | 0.01 | 0.01 | 0.13 | 0.02 |
| Queue Length 95th (ft) | 1 | 1 | 11 | 1 |
| Control Delay (s) | 0.5 | 0.2 | 18.3 | 15.3 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.5 | 0.2 | 18.3 | 15.3 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 40.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 105: California Street & 15th Avenue
Year 2025 Variant PM Peak Alt 3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ✣ | | | ✣ | | | ✣ | | | ✣ | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 27 | 397 | 7 | 16 | 412 | 19 | 8 | 13 | 30 | 10 | 10 | 6 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 28 | 409 | 7 | 16 | 425 | 20 | 8 | 13 | 31 | 10 | 10 | 6 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.87 | | | | | | 0.87 | 0.87 | | 0.87 | 0.87 | 0.87 |
| vC, conflicting volume | 444 | | | 416 | | | 947 | 946 | 413 | 974 | 940 | 435 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 362 | | | 416 | | | 940 | 938 | 413 | 970 | 931 | 351 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 99 | | | 96 | 94 | 95 | 94 | 95 | 99 |
| cM capacity (veh/h) | 1052 | | | 1153 | | | 198 | 223 | 644 | 180 | 225 | 607 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 444 | 461 | 53 | 27 |
| Volume Left | 28 | 16 | 8 | 10 |
| Volume Right | 7 | 20 | 31 | 6 |
| cSH | 1052 | 1153 | 351 | 236 |
| Volume to Capacity | 0.03 | 0.01 | 0.15 | 0.11 |
| Queue Length 95th (ft) | 2 | 1 | 13 | 9 |
| Control Delay (s) | 0.8 | 0.4 | 17.1 | 22.2 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.8 | 0.4 | 17.1 | 22.2 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.1 | | |
| Intersection Capacity Utilization | 42.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 27 | 404 | 6 | 62 | 439 | 34 | 2 | 7 | 30 | 95 | 23 | 6 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 28 | 425 | 6 | 65 | 462 | 36 | 2 | 7 | 32 | 100 | 24 | 6 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.91 | | | | | | 0.91 | 0.91 | | 0.91 | 0.91 | 0.91 |
| vC, conflicting volume | 498 | | | 432 | | | 865 | 1114 | 216 | 915 | 1099 | 249 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 353 | | | 432 | | | 756 | 1028 | 216 | 811 | 1012 | 81 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 94 | | | 99 | 96 | 96 | 54 | 88 | 99 |
| cM capacity (veh/h) | 1110 | | | 1139 | | | 232 | 198 | 795 | 219 | 202 | 885 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 241 | 219 | 296 | 267 | 41 | 131 |
| Volume Left | 28 | 0 | 65 | 0 | 2 | 100 |
| Volume Right | 0 | 6 | 0 | 36 | 32 | 6 |
| cSH | 1110 | 1700 | 1139 | 1700 | 477 | 224 |
| Volume to Capacity | 0.03 | 0.13 | 0.06 | 0.16 | 0.09 | 0.58 |
| Queue Length 95th (ft) | 2 | 0 | 5 | 0 | 7 | 82 |
| Control Delay (s) | 1.2 | 0.0 | 2.3 | 0.0 | 13.3 | 41.4 |
| Lane LOS | A | | A | | B | E |
| Approach Delay (s) | 0.6 | | 1.2 | | 13.3 | 41.4 |
| Approach LOS | | | | | B | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 5.8 | | |
| Intersection Capacity Utilization | 50.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3302 | | 1668 | 3216 | | | 4968 | | | 4993 | |
| Flt Permitted | 0.37 | 1.00 | | 0.41 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 642 | 3302 | | 715 | 3216 | | | 4968 | | | 4993 | |
| Volume (vph) | 66 | 432 | 31 | 153 | 397 | 125 | 0 | 2055 | 204 | 0 | 2287 | 138 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 69 | 455 | 33 | 161 | 418 | 132 | 0 | 2163 | 215 | 0 | 2407 | 145 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 14 | 0 | 0 | 8 | 0 |
| Lane Group Flow (vph) | 69 | 487 | 0 | 161 | 548 | 0 | 0 | 2364 | 0 | 0 | 2544 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Effective Green, g (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Actuated g/C Ratio | 0.39 | 0.39 | | 0.39 | 0.39 | | | 0.52 | | | 0.52 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 249 | 1282 | | 278 | 1249 | | | 2572 | | | 2585 | |
| v/s Ratio Prot | | 0.15 | | | 0.17 | | | 0.48 | | | c0.51 | |
| v/s Ratio Perm | 0.11 | | | c0.23 | | | | | | | | |
| v/c Ratio | 0.28 | 0.38 | | 0.58 | 0.44 | | | 0.92 | | | 0.98 | |
| Uniform Delay, d1 | 17.8 | 18.7 | | 20.5 | 19.2 | | | 18.9 | | | 20.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.36 | |
| Incremental Delay, d2 | 2.7 | 0.9 | | 8.5 | 1.1 | | | 6.7 | | | 8.7 | |
| Delay (s) | 20.6 | 19.5 | | 29.0 | 20.3 | | | 25.6 | | | 16.0 | |
| Level of Service | C | B | | C | C | | | C | | | B | |
| Approach Delay (s) | | 19.6 | | | 22.3 | | | 25.6 | | | 16.0 | |
| Approach LOS | | B | | | C | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.7 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.81 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 78.7% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5021 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5021 | |
| Volume (vph) | 42 | 72 | 0 | 2417 | 2521 | 51 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 44 | 75 | 0 | 2518 | 2626 | 53 |
| RTOR Reduction (vph) | 0 | 8 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 44 | 67 | 0 | 2518 | 2677 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 2.4 | 14.4 | | 74.6 | 62.6 | |
| Effective Green, g (s) | 2.4 | 14.4 | | 74.6 | 62.6 | |
| Actuated g/C Ratio | 0.03 | 0.17 | | 0.88 | 0.74 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 50 | 477 | | 4420 | 3698 | |
| v/s Ratio Prot | c0.02 | 0.02 | | c0.50 | c0.53 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.88 | 0.14 | | 0.57 | 0.72 | |
| Uniform Delay, d1 | 41.2 | 30.0 | | 1.3 | 6.3 | |
| Progression Factor | 1.00 | 1.00 | | 0.33 | 1.00 | |
| Incremental Delay, d2 | 83.7 | 0.1 | | 0.3 | 1.3 | |
| Delay (s) | 124.8 | 30.2 | | 0.8 | 7.6 | |
| Level of Service | F | C | | A | A | |
| Approach Delay (s) | 65.2 | | | 0.8 | 7.6 | |
| Approach LOS | E | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 5.6 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.69 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

**Existing plus Project Conditions**
**Alternative 4: Battery Caulfield Alternative (Variant)**
**PM Peak Hour**

## HCM Unsignalized Intersection Capacity Analysis
### 100: Lake Street & 17th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 2 | 287 | 10 | 25 | 388 | 4 | 4 | 1 | 25 | 7 | 3 | 2 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 2 | 309 | 11 | 27 | 417 | 4 | 4 | 1 | 27 | 8 | 3 | 2 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 422 | | | 319 | | | 795 | 794 | 314 | 819 | 797 | 419 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 422 | | | 319 | | | 795 | 794 | 314 | 819 | 797 | 419 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 98 | | | 99 | 100 | 96 | 97 | 99 | 100 |
| cM capacity (veh/h) | 1149 | | | 1252 | | | 299 | 316 | 731 | 280 | 314 | 638 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 322 | 448 | 32 | 13 |
| Volume Left | 2 | 27 | 4 | 8 |
| Volume Right | 11 | 4 | 27 | 2 |
| cSH | 1149 | 1252 | 591 | 318 |
| Volume to Capacity | 0.00 | 0.02 | 0.05 | 0.04 |
| Queue Length 95th (ft) | 0 | 2 | 4 | 3 |
| Control Delay (s) | 0.1 | 0.7 | 11.4 | 16.8 |
| Lane LOS | A | A | B | C |
| Approach Delay (s) | 0.1 | 0.7 | 11.4 | 16.8 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 47.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



## HCM Unsignalized Intersection Capacity Analysis
### 101: Lake Street & 15th Avenue



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Volume (vph) | 4 | 310 | 5 | 18 | 408 | 9 | 8 | 30 | 17 | 7 | 3 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 4 | 341 | 5 | 20 | 448 | 10 | 9 | 33 | 19 | 8 | 3 | 1 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 351 | 478 | 60 | 12 |
| Volume Left (vph) | 4 | 20 | 9 | 8 |
| Volume Right (vph) | 5 | 10 | 19 | 1 |
| Hadj (s) | -0.01 | 0.00 | -0.16 | 0.07 |
| Departure Headway (s) | 4.6 | 4.5 | 5.6 | 6.0 |
| Degree Utilization, x | 0.45 | 0.60 | 0.09 | 0.02 |
| Capacity (veh/h) | 756 | 780 | 550 | 509 |
| Control Delay (s) | 11.4 | 14.0 | 9.2 | 9.1 |
| Approach Delay (s) | 11.4 | 14.0 | 9.2 | 9.1 |
| Approach LOS | B | B | A | A |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 12.6 | | |
| HCM Level of Service | B | | |
| Intersection Capacity Utilization | 42.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
102: Lake Street & 14th Avenue — Year 2025 Variant PM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 25 | 306 | 3 | 120 | 432 | 8 | 2 | 13 | 49 | 6 | 1 | 1 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 27 | 329 | 3 | 129 | 465 | 9 | 2 | 14 | 53 | 6 | 1 | 1 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 300 | | | | | | | |
| pX, platoon unblocked | 0.86 | | | | | | 0.86 | 0.86 | | 0.86 | 0.86 | 0.86 |
| vC, conflicting volume | 473 | | | 332 | | | 1113 | 1116 | 331 | 1171 | 1113 | 469 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 390 | | | 332 | | | 1131 | 1134 | 331 | 1198 | 1131 | 385 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 97 | | | 90 | | | 98 | 91 | 93 | 94 | 99 | 100 |
| cM capacity (veh/h) | 1019 | | | 1238 | | | 141 | 154 | 716 | 110 | 155 | 576 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 359 | 602 | 69 | 9 |
| Volume Left | 27 | 129 | 2 | 6 |
| Volume Right | 3 | 9 | 53 | 1 |
| cSH | 1019 | 1238 | 383 | 128 |
| Volume to Capacity | 0.03 | 0.10 | 0.18 | 0.07 |
| Queue Length 95th (ft) | 2 | 9 | 16 | 5 |
| Control Delay (s) | 0.9 | 2.7 | 16.5 | 35.2 |
| Lane LOS | A | A | C | E |
| Approach Delay (s) | 0.9 | 2.7 | 16.5 | 35.2 |
| Approach LOS | | | C | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.3 | | |
| Intersection Capacity Utilization | 61.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



## HCM Signalized Intersection Capacity Analysis
103: Lake Street & Park Presidio Boulevard — Year 2025 Variant PM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 10 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 |
| Total Lost time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | | | 4.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | 1.00 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1728 | 1756 | 1492 | 1668 | 1756 | 1492 | | 5015 | | | 4969 | |
| Flt Permitted | 0.42 | 1.00 | 1.00 | 0.50 | 1.00 | 1.00 | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 760 | 1756 | 1492 | 883 | 1756 | 1492 | | 5015 | | | 4969 | |
| Volume (vph) | 101 | 235 | 25 | 73 | 296 | 142 | 0 | 2174 | 72 | 0 | 2322 | 264 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 104 | 242 | 26 | 75 | 305 | 146 | 0 | 2241 | 74 | 0 | 2394 | 272 |
| RTOR Reduction (vph) | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 4 | 0 | 0 | 17 | 0 |
| Lane Group Flow (vph) | 104 | 242 | 24 | 75 | 305 | 143 | 0 | 2311 | 0 | 0 | 2649 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 1% | 1% | 3% | 1% |
| Turn Type | Perm | | Perm | Perm | | Perm | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | | 47.0 | | | 47.0 | |
| Effective Green, g (s) | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | 28.0 | | 49.0 | | | 49.0 | |
| Actuated g/C Ratio | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | | 0.58 | | | 0.58 | |
| Clearance Time (s) | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | | 6.0 | | | 6.0 | |
| Lane Grp Cap (vph) | 250 | 578 | 491 | 291 | 578 | 491 | | 2891 | | | 2864 | |
| v/s Ratio Prot | | 0.14 | | | c0.17 | | | 0.46 | | | c0.53 | |
| v/s Ratio Perm | 0.14 | | 0.02 | 0.08 | | 0.10 | | | | | | |
| v/c Ratio | 0.42 | 0.42 | 0.05 | 0.26 | 0.53 | 0.29 | | 0.80 | | | 0.93 | |
| Uniform Delay, d1 | 22.1 | 22.2 | 19.4 | 20.9 | 23.1 | 21.1 | | 14.1 | | | 16.3 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.24 | | | 0.63 | |
| Incremental Delay, d2 | 5.0 | 2.2 | 0.2 | 2.1 | 3.4 | 1.5 | | 1.1 | | | 4.9 | |
| Delay (s) | 27.2 | 24.4 | 19.6 | 23.0 | 26.6 | 22.6 | | 18.7 | | | 15.2 | |
| Level of Service | C | C | B | C | C | C | | B | | | B | |
| Approach Delay (s) | | 24.8 | | | 25.0 | | | 18.7 | | | 15.2 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 18.0 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.78 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 81.9% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
104: Lake Street & Funston Avenue

Year 2025 Variant PM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 13 | 288 | 6 | 7 | 489 | 5 | 18 | 1 | 16 | 1 | 1 | 4 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Hourly flow rate (vph) | 15 | 331 | 7 | 8 | 562 | 6 | 21 | 1 | 18 | 1 | 1 | 5 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | 68 | | | | | | | | | | |
| pX, platoon unblocked | | | | 0.89 | | | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | |
| vC, conflicting volume | 568 | | | 338 | | | 951 | 948 | 334 | 964 | 949 | 565 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 568 | | | 260 | | | 945 | 942 | 256 | 960 | 943 | 565 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 90 | 100 | 97 | 99 | 100 | 99 |
| cM capacity (veh/h) | 1009 | | | 1172 | | | 212 | 232 | 704 | 203 | 232 | 528 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 353 | 576 | 40 | 7 |
| Volume Left | 15 | 8 | 21 | 1 |
| Volume Right | 7 | 6 | 18 | 5 |
| cSH | 1009 | 1172 | 313 | 357 |
| Volume to Capacity | 0.01 | 0.01 | 0.13 | 0.02 |
| Queue Length 95th (ft) | 1 | 1 | 11 | 1 |
| Control Delay (s) | 0.5 | 0.2 | 18.2 | 15.3 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.5 | 0.2 | 18.2 | 15.3 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.2 | | |
| Intersection Capacity Utilization | 40.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



HCM Unsignalized Intersection Capacity Analysis
105: California Street & 15th Avenue

Year 2025 Variant PM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 24 | 394 | 7 | 16 | 412 | 19 | 8 | 12 | 30 | 10 | 10 | 6 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 25 | 406 | 7 | 16 | 425 | 20 | 8 | 12 | 31 | 10 | 10 | 6 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 531 | | | | | | | |
| pX, platoon unblocked | 0.87 | | | | | | 0.87 | 0.87 | | 0.87 | 0.87 | 0.87 |
| vC, conflicting volume | 444 | | | 413 | | | 938 | 937 | 410 | 964 | 930 | 435 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 362 | | | 413 | | | 929 | 927 | 410 | 959 | 920 | 351 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 99 | | | 96 | 95 | 95 | 94 | 95 | 99 |
| cM capacity (veh/h) | 1052 | | | 1156 | | | 202 | 227 | 646 | 184 | 229 | 607 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 438 | 461 | 52 | 27 |
| Volume Left | 25 | 16 | 8 | 10 |
| Volume Right | 7 | 20 | 31 | 6 |
| cSH | 1052 | 1156 | 360 | 241 |
| Volume to Capacity | 0.02 | 0.01 | 0.14 | 0.11 |
| Queue Length 95th (ft) | 2 | 1 | 12 | 9 |
| Control Delay (s) | 0.7 | 0.4 | 16.7 | 21.8 |
| Lane LOS | A | A | C | C |
| Approach Delay (s) | 0.7 | 0.4 | 16.7 | 21.8 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.0 | | |
| Intersection Capacity Utilization | 40.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

## HCM Unsignalized Intersection Capacity Analysis
### 106: California Street & 14th Avenue

Year 2025 Variant PM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Volume (veh/h) | 24 | 404 | 6 | 62 | 439 | 34 | 2 | 6 | 30 | 95 | 23 | 6 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 25 | 425 | 6 | 65 | 462 | 36 | 2 | 6 | 32 | 100 | 24 | 6 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | 231 | | | | | | | |
| pX, platoon unblocked | 0.91 | | | | | | 0.91 | 0.91 | | 0.91 | 0.91 | 0.91 |
| vC, conflicting volume | 498 | | | 432 | | | 859 | 1107 | 216 | 908 | 1093 | 249 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 353 | | | 432 | | | 749 | 1022 | 216 | 803 | 1005 | 81 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 94 | | | 99 | 97 | 96 | 55 | 88 | 99 |
| cM capacity (veh/h) | 1110 | | | 1139 | | | 236 | 200 | 795 | 223 | 204 | 885 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 238 | 219 | 296 | 267 | 40 | 131 |
| Volume Left | 25 | 0 | 65 | 0 | 2 | 100 |
| Volume Right | 0 | 6 | 0 | 36 | 32 | 6 |
| cSH | 1110 | 1700 | 1139 | 1700 | 499 | 228 |
| Volume to Capacity | 0.02 | 0.13 | 0.06 | 0.16 | 0.08 | 0.57 |
| Queue Length 95th (ft) | 2 | 0 | 5 | 0 | 7 | 80 |
| Control Delay (s) | 1.1 | 0.0 | 2.3 | 0.0 | 12.8 | 40.1 |
| Lane LOS | A | | A | | B | E |
| Approach Delay (s) | 0.6 | | 1.2 | | 12.8 | 40.1 |
| Approach LOS | | | | | B | E |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 5.6 | | | |
| Intersection Capacity Utilization | 50.6% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |



## HCM Signalized Intersection Capacity Analysis
### 107: California Street & Park Presidio Boulevard

Year 2025 Variant PM Peak Alt 4

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 10 | 15 | 10 | 10 | 15 | 12 | 12 | 12 | 12 | 12 | 12 |
| 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 | 0.95 | | | 0.91 | | | 0.91 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1668 | 3302 | | 1668 | 3216 | | | 4968 | | | 4993 | |
| Flt Permitted | 0.37 | 1.00 | | 0.41 | 1.00 | | | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | 642 | 3302 | | 715 | 3216 | | | 4968 | | | 4993 | |
| Volume (vph) | 66 | 432 | 31 | 153 | 397 | 125 | 0 | 2055 | 204 | 0 | 2282 | 138 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 69 | 455 | 33 | 161 | 418 | 132 | 0 | 2163 | 215 | 0 | 2402 | 145 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 14 | 0 | 0 | 8 | 0 |
| Lane Group Flow (vph) | 69 | 487 | 0 | 161 | 548 | 0 | 0 | 2364 | 0 | 0 | 2539 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 3% | 3% | 3% | 3% | 3% | 3% |
| Turn Type | Perm | | | Perm | | | | | | | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Actuated Green, G (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Effective Green, g (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | | 44.0 | | | 44.0 | |
| Actuated g/C Ratio | 0.39 | 0.39 | | 0.39 | 0.39 | | | 0.52 | | | 0.52 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Lane Grp Cap (vph) | 249 | 1282 | | 278 | 1249 | | | 2572 | | | 2585 | |
| v/s Ratio Prot | | 0.15 | | | 0.17 | | | 0.48 | | | c0.51 | |
| v/s Ratio Perm | 0.11 | | | c0.23 | | | | | | | | |
| v/c Ratio | 0.28 | 0.38 | | 0.58 | 0.44 | | | 0.92 | | | 0.98 | |
| Uniform Delay, d1 | 17.8 | 18.7 | | 20.5 | 19.2 | | | 18.9 | | | 20.1 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 0.36 | |
| Incremental Delay, d2 | 2.7 | 0.9 | | 8.5 | 1.1 | | | 6.7 | | | 8.5 | |
| Delay (s) | 20.6 | 19.5 | | 29.0 | 20.3 | | | 25.6 | | | 15.7 | |
| Level of Service | C | B | | C | C | | | C | | | B | |
| Approach Delay (s) | | 19.6 | | | 22.3 | | | 25.6 | | | 15.7 | |
| Approach LOS | | B | | | C | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.6 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.81 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 78.6% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | 1.00 | 0.88 | | 0.91 | 0.91 | |
| Frt | 1.00 | 0.85 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (prot) | 1787 | 2814 | | 5036 | 5024 | |
| Flt Permitted | 0.95 | 1.00 | | 1.00 | 1.00 | |
| Satd. Flow (perm) | 1787 | 2814 | | 5036 | 5024 | |
| Volume (vph) | 37 | 65 | 0 | 2417 | 2521 | 40 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 39 | 68 | 0 | 2518 | 2626 | 42 |
| RTOR Reduction (vph) | 0 | 8 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 39 | 60 | 0 | 2518 | 2666 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 3% | 3% | 3% | 3% |
| Turn Type | | custom | | | | |
| Protected Phases | 1! | 5 | | 2 | 6! | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 1.8 | 13.8 | | 75.2 | 63.2 | |
| Effective Green, g (s) | 1.8 | 13.8 | | 75.2 | 63.2 | |
| Actuated g/C Ratio | 0.02 | 0.16 | | 0.88 | 0.74 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 38 | 457 | | 4455 | 3735 | |
| v/s Ratio Prot | c0.02 | 0.02 | | c0.50 | c0.53 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 1.03 | 0.13 | | 0.57 | 0.71 | |
| Uniform Delay, d1 | 41.6 | 30.5 | | 1.1 | 6.0 | |
| Progression Factor | 1.00 | 1.00 | | 0.30 | 1.00 | |
| Incremental Delay, d2 | 153.9 | 0.1 | | 0.3 | 1.2 | |
| Delay (s) | 195.5 | 30.6 | | 0.7 | 7.1 | |
| Level of Service | F | C | | A | A | |
| Approach Delay (s) | 90.7 | | | 0.7 | 7.1 | |
| Approach LOS | F | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 5.8 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.69 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

Wilbur Smith Associates

MEMO

Technical Memorandum No. 6, Alternative 1 Trip Generation Variation, was written to describe the effect of changing the trip generation rate for cultural/educational uses in Alternative 1 from the rate assumed in the PTMP EIS to a rate that more closely reflects the educational use anticipated for the PHSH district, and is available in the Presidio Trust library."

# MEMO

**SAN FRANCISCO OFFICE**
**March 1, 2006**

Project Number: 395900

**To:** Amy Marshall, The Presidio Trust

FROM: José I. Farrán, Project Manager
Nate Chanchareon, Senior Transportation Engineer

SUBJECT: The Presidio of San Francisco
Public Health Service Hospital Site Supplemental Environmental Impact Statement
Draft Technical Memorandum No. 7 – Traffic Signal Warrant Analysis

**TRAFFIC SIGNAL WARRANT ANALYSIS**

Traffic signal warrant analysis is one of the criteria used by traffic engineers to determine if an intersection should be signalized. Since the proposed intersection access to the PHSH site does not currently exist, the California Supplement of the 2003 Manual Uniform Traffic Control Device (May 2004) indicates that Table 4C-101 (*Traffic Signal Warrant – Average Traffic Estimate)* on page 4C-8 of the Manual Supplement should be used to evaluate the potential installation of a traffic signal at this location.

Table 1 summarizes the expected daily traffic volume at the proposed intersection location under Alternative 2 (Wings Retained/Trust Revised Alternative) as it is the Trust's preferred alternative. Since only peak hour volumes are available from the traffic analysis for the Final EIS, year 2025 daily traffic volumes on Highway 1 have been calculated using a seven percent peak hour factor, which is based on available daily and peak hour traffic volume data obtained from Caltrans for this location. Daily traffic volumes on the minor approach have been calculated using an eleven percent PM peak hour factor based on trip generation estimates for the PHSH district.



Table 1
Highway 1 – Park Presidio Boulevard
Average Traffic Estimate Traffic Signal Warrant Analysis
Year 2025 Land Use Alternative 2 (Wings Retained/Trust Revised Alternative)

| Roadway Segment | Year 2025 Daily Traffic Volumes | | | Minimum Requirements 1A | 1B | 1A&B |
|---|---|---|---|---|---|---|
| **Highway 1** | **NB** | **SB** | **Total** | **Total Traffic Volume** | | |
| Lake Street to New Intersection | 40,600 | 43,800 | 84,400 | 9,600 | 14,400 | 11,520 |
| New Intersection to MacArthur Tunner | 41,200 | 43,300 | 84,500 | 9,600 | 14,400 | 11,520 |
| **PHSH Access** | **EB** | **WB** | **Total** | **EB Traffic Only** | | |
| New Intersection | 1,100 | 410 | 1,510 | 3,200 | 1,600 | 2,560 |

Wilbur Smith Associates, 2006

As shown in Table 8, the intersection is expected to have approximately 1,100 vehicles per day on the minor street approach in the eastbound direction and between 84,400 to 84,500 vehicles per day on the major street in both directions. Figure 1 presents the worksheet used in the *Traffic Signal Warrant – Average Traffic Estimate* analysis. As Table 1 and Figure 1 indicate, Traffic Signal Warrant 1A (Minimum Vehicular Traffic) and Signal Warrant 1B (Interruption of Continuous Traffic) are not satisfied since the expected traffic volume on the minor street (1,100 vehicles) is about 34 percent of the required minimum volume described in Warrant 1A (3,200 vehicles) and about 69 percent of the required minimum volume (1,600 vehicles) described in Warrant 1B. The expected volume on the minor approach would also not meet the 80% requirement of Warrants 1A and 1B.

Since Year 2025 AM and PM peak hour traffic volumes have also been estimated for Alternative 2 as part of the transportation analyses conducted for the Draft Supplemental EIS for the PHSH site, WSA has also conducted the *Peak Hour Traffic Signal Warrant* (Warrant 3) analysis, using Figure 4C-101 (page 4C-4) of the California Supplement to the 2003 MUTCD (May 2004) and Figure 4C-3 of the 2003 MUTCD.

Figure 2 presents the worksheet and figure used in the *Peak Hour Traffic Signal Warrant* (Warrant 3) analysis. Either Part A or Part B of the worksheet needs to be satisfied in order to satisfy Traffic Signal Warrant 3. This analysis conservatively assumes that all transit ridership to/from the North Bay would be on GGT Route 10. In reality, some passengers may transfer to/from other GGT routes at the Golden Gate Bridge Toll Plaza, in which case the transit load would be distributed across more routes, resulting in a lesser impact. As shown in Figure 2, using the data summarized in Table 2, neither Part A or Part B of Traffic Signal Warrant 3 is not satisfied during either the AM or PM peak hour.

Table 2
Highway 1 – Park Presidio Boulevard
Peak Hour Traffic Signal Warrant Analysis (Warrant 3)
Year 2025 - Land Use Alternative 2 (Wings Retained/Trust Revised Alternative)
Roadway Variant: New Park Presidio Blvd. Access with Inbound Only Traffic at 14th & 15th Ave. Gates

| Roadway Segment | Year 2025 AM Peak Hour Traffic Volumes | | | Year 2025 PM Peak Hour Traffic Volumes | | | Minimum Requirements |
|---|---|---|---|---|---|---|---|
| **Highway 1** | **NB** | **SB** | **Total** | **NB** | **SB** | **Total** | **Total** |
| Lake Street to New Intersection | 2,960 | 2,680 | 5,640 | 2,800 | 3,020 | 5,820 | 1,800 |
| New Intersection to South End of MacArthur Tunnel | 3,000 | 2,650 | 5,650 | 2,840 | 2,990 | 5,830 | 1,800 |
| **PHSH Access** | **EB** | **WB** | **Total** | **EB** | **WB** | **Total** | **Total** |
| New Intersection | 115 | 45 | 160 | 130 | 50 | 180 | 150 |

Wilbur Smith Associates, 2006

In conclusion, the proposed intersection access to the PHSH district would not meet the *Traffic Signal* for planned intersections using estimated daily traffic volumes, nor the *Peak Hour Traffic Signal Warrant* (Warrant 3) for existing intersections during the AM or PM peak hour.



**Figure 1**

**Traffic Signal Warrant Worksheet**
**Average Traffic Estimate Form**
**California Supplement to the 2003 MUTCD (2004)**

**Figure 2**

**Traffic Signal Warrant Worksheet**
**Peak Hour Traffic Signal Warrant (Warrant 3)**
**California Supplement to the 2003**

### *Table 4C-101. Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)*

**(Based on Estimated Average Daily Traffic - See Note)**

| URBAN ✓ RURAL | Minimum Requirements EADT | | | |
|---|---|---|---|---|
| **1A - Minimum Vehicular Traffic**<br>Satisfied ______ Not Satisfied ✓ | Vehicles Per Day on Major Street (Total of Both Approaches) | | Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) | |
| Number of lanes for moving traffic on each approach: Major Street / Minor Street | Urban | Rural | Urban | Rural |
| 1 / 1 | 8,000 | 5,600 | 2,400 | 1,680 |
| 2 or More / 1 | 9,600 | 6,720 | 2,400 | 1,680 |
| 2 or More / 2 or More | 9,600 | 6,720 | 3,200 | 2,240 |
| 1 / 2 or More | 8,000 | 5,600 | 3,200 | 2,240 |
| **1B - Interruption of Continuos Traffic**<br>Satisfied ______ Not Satisfied ✓ | Vehicles Per Day on Major Street (Total of Both Approaches) | | Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) | |
| Number of lanes for moving traffic on each approach: Major Street / Minor Street | Urban | Rural | Urban | Rural |
| 1 / 1 | 12,000 | 8,400 | 1,200 | 850 |
| 2 or More / 1 | 14,400 | 10,080 | 1,200 | 850 |
| 2 or More / 2 or More | 14,400 | 10,080 | 1,600 | 1,120 |
| 1 / 2 or More | 12,000 | 8,400 | 1,600 | 1,120 |
| **1A&B - Combinations**<br>Satisfied ______ Not Satisfied ✓<br>No one warrant satisfied, but following warrants fulfilled 80% or more.......... ____ 1 ____ 2 | 2 Warrants | | 2 Warrants | |

**Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.**

## *Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 2 of 4)*

**WARRANT 3 - Peak Hour** **PART A or PART B SATISFIED** **YES** ☐ **NO** ☑

**PART A** **SATISFIED** **YES** ☐ **NO** ☐

**(All parts 1, 2, and 3 below must be satisfied)**

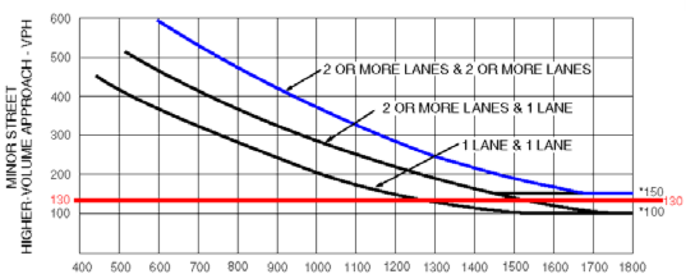
**Part A does not Apply**

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceedds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — Yes ☐ No ☐
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — Yes ☐ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaoches. — Yes ☐ No ☐

**PART B** **SATISFIED** **YES** ☐ **NO** ☑

| APPROACH LANES | One | 2 or More | AM | PM | | | Hour |
|---|---|---|---|---|---|---|---|
| Both Approaches - Major Street | | X | 5650 | 5830 | | | |
| Highest Approaches - Minor Street | | X | 115 | 130 | | | |

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume vehicle minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3 or 4C-4.




*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

# Appendix C

# Environmental Review Summary

# Appendix C.
# Environmental Review Summary

March 2003

# Environmental Review Summary

Plans and projects of a federal entity like the Presidio Trust (Trust) are subject to environmental review under the National Environmental Policy Act (NEPA). In August 2002, the Trust completed the Presidio Trust Management Plan (PTMP), a comprehensive land use plan for Area B of the Presidio. The Trust analyzed the general land use proposals of the PTMP in the accompanying program-level PTMP Final Environmental Impact Statement (Trust 2002c) prepared under the NEPA. Project-level environmental review of proposals within the Public Health Service Hospital (PHSH) district will "tier" from and/or supplement the analysis in the PTMP EIS as needed.[1] The PTMP EIS analyzed alternative land use concepts for the future of the Presidio, including a preference for residential and educational uses within the PHSH district.

This document summarizes the existing environmental review baseline for project proposals within the PHSH district. The Trust (or an environmental review contractor supervised by the Trust) will evaluate proposals against this baseline to determine the scope of additional review required, if any. This environmental review summary is a tool and is not a substitute for the PTMP EIS. It is offered as a way to consider in advance of and during project planning what environmental studies, mitigation requirements, or other information may be warranted in connection with the federal NEPA process. This summary may be used to:

- assist the Trust in determining the extent of NEPA review required;
- assist project proponents in comparing existing plans and prior analysis to the specifics of their proposal; and
- allow the public, reviewing agencies and project proponents to gain a better understanding of Trust requirements.

## PHSH District Concept and EIS Assumptions

### PTMP CONCEPT

The PTMP identifies the PHSH district as a "Residential and Educational Community" where some building demolition and replacement construction could occur (page 93).

[1] The Council on Environmental Quality (CEQ) NEPA Regulations encourage the use of tiered documents to "eliminate repetitive discussions of the same issues" (40 CFR 1502.20) and to "focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe" (40 CFR 1508.28). The PTMP EIS can be viewed at the Presidio Trust Library, 34 Graham Street, San Francisco, California.

Land use preferences are stated for the district on page 94, and expressed in terms of a general mix of uses (educational and residential). The PTMP calls for rehabilitation of the historic portions of the 314,000 square-foot former hospital building for residential use, and states a preference for educational uses within the bulk of remaining square footage in the district. The PTMP anticipates that the non-historic structures within the district, including the modern seven-story wings to the main hospital, could be removed (page 94). Any replacement construction would be secondary to the former hospital as the predominant building in the complex (page 97). New construction, if any, would be compatible in scale, massing, height, color and materials with the historic buildings in the area and would be consistent with the planning guidelines (pages 96 through 99). Maximum heights would be between 30 feet to 45 feet for outbuildings and 70 feet for buildings adjacent to the main hospital (page 97). There would be no net change in square footage within the district (page 94), with maximum possible new construction equal to maximum possible demolition at 130,000 sf. Remnant natural systems within the district would be preserved and enhanced. This includes wetland features and habitat for sensitive plant and wildlife species, such as the San Francisco lessingia (*Lessingia germanorum*), a federally-listed endangered plant, and the locally-scarce California Quail (*Callipepla californica*).

## PTMP EIS ASSUMPTIONS

For the purposes of its analyses, the PTMP EIS assumed that the historic complex of buildings within the PHSH district would be rehabilitated according to the Secretary of Interior's Standards for the Rehabilitation of Historic Properties to accommodate new residential and educational uses (page 28). Non-historic structures, including the hospital wings, would be removed and replaced with new construction that would be used to facilitate the effective rehabilitation and reuse of historic buildings (page 28). Any new construction would occur within the constraints imposed by the PTMP, and would only occur in areas previously developed. Preservation of the integrity of the National Historic Landmark District (NHLD) status would guide what changes would be made (page 32). Open space on the upper plateau (above the building core and surrounding Battery Caulfield) would be enhanced to protect and restore important natural resources, including wetlands and habitat for sensitive plant and wildlife species and cultural resources, such as the old Marine Cemetery.[2] Deconstructed materials would be salvaged and reused to the extent possible. All new construction would be designed to be energy efficient. Other assumptions include the following:

- The large parking lot and the tennis court on the upper plateau would be removed.

[2] A significant archeological resource on the upper plateau that dates back to the 1880s.

- Remedial actions would be implemented at identified landfill sites to protect human health and the environment and expedite and enhance the beneficial reuse of the sites.
- New trails would be designed and constructed to improve bicycle and pedestrian circulation and connect the Presidio trail system to nearby outdoor recreational amenities and the existing regional trail network.
- Transportation demand management actions[3] and circulation improvements (such as reopening the 14th Avenue Gate to vehicular access and operating 14th and 15th Avenues as a one-way couplet) would be implemented to reduce traffic impacts on the surrounding neighborhood.
- Views to and from the district would be preserved and enhanced.

# Environmental Resource Topics

The following summarizes environmental issues, topic by topic, as discussed in the PTMP EIS, and concentrates on issues specific to a proposed project within the PHSH district. The summary also provides updated or background information, where available, and identifies mitigation measures as required by the PTMP Record of Decision (ROD) (Trust 2002d) to avoid or minimize environmental impacts.[4]

## HISTORIC ARCHITECTURAL RESOURCES AND THE CULTURAL LANDSCAPE

The potential impacts of development within the Presidio on historic resources, including the NHLD are assessed on pages 199 through 202 of the PTMP EIS. The analysis presents a discussion of proposed changes within the PHSH district including the maximum allowable new construction (130,000 sf) and demolition (130,000 sf). The analysis concludes that demolition of the non-historic front addition and wings to the main hospital and rehabilitation and restoration of the historic front façade, and rehabilitation and reuse of other historic buildings would enhance the integrity of the district and the NHLD. The non-historic wings and front addition's square footage could be replaced with buildings elsewhere within the district. New (replacement) space would be constructed within existing areas of development (e.g., within the building core on the lower plateau or Battery Caulfield on the upper plateau), and would be sited and designed to reinforce historic character-defining features of the district. New construction, if any, would be in conformance with the PTMP Planning Principles and the PHSH Planning

[3] As discussed in the PTMP Appendix D – Transportation Demand Management Program.

[4] Refer to Attachment 1 (Mitigation Monitoring and Enforcement Program) within the Record of Decision (Trust 2002d) for a complete list of all practicable mitigation measures identified in the PTMP EIS for implementation.

District Guidelines, and all physical changes would be subject to consultation pursuant to Section 106 of the National Historic Preservation Act as outlined in the Programmatic Agreement (PA).[5] The Planning Principles require that the Trust protect the historic character and the integrity of the NHLD while allowing changes that will maintain the district's vitality. The Planning District Guidelines provide guidance on spatial organization and land patterns, buildings and structures, open space, vegetation and views, and circulation and access.

The PTMP also suggests that if a suitable tenant for the main hospital building cannot be found, the building's removal and replacement could be considered subject to further analysis. However, the PTMP cautions that every reasonable effort to adapt historic properties to new uses would be made, and new construction and demolition of historic buildings would be minimized as needed to meet policy and plan objectives. The Trust would provide an opportunity for public comment before making any decision to proceed with any proposal involving substantial new construction, and any proposal that could potentially have a significant adverse effect on a historic resource. The Trust will utilize the process for consultation as stipulated in the PA to minimize adverse effects on historic resources and ensure the preservation and protection of the NHLD.

The following mitigation measures derived from the PTMP EIS would limit adverse effects on historic resources and the cultural landscape due to building removal and new construction within the PHSH district:

1. CR-1 *Documentation of Building Addition to be Removed*. Should all or some of the additions to the main hospital be removed, appropriate mitigating measures would be determined in consultation with the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation during the Section 106 consultation process. Section 106 consultation and review of rehabilitation plans for compliance with the Secretary of Interior's Standards for the Rehabilitation of Historic Properties for Rehabilitation and Investment Tax Credit projects may be accomplished within the Part I and Part II Certification process as delineated in 36 CFR Part 67.[6]

2. CR-4 *Demolition and New Construction.* The Trust would engage in a consultation process with historic preservation agencies as stipulated in the PA. The project would conform to the PTMP Planning Principles, PHSH Planning District Guidelines, and the Secretary of the Interior's Standards, in a manner that assures the preservation of the integrity of the NHLD.

[5] See PTMP EIS Appendix D – Final Programmatic Agreement

[6] A requirement for recordation is unlikely because the additions are not considered significant or historic.

3. CR-7 *Compliance with Standards for Building and Cultural Landscape Rehabilitation*. Building rehabilitation would conform to the Guidelines for Rehabilitating Buildings at the Presidio of San Francisco (ARG 1995), and the Secretary of the Interior's Standards for the Rehabilitation of Historic Properties (NPS 1992a). Historic landscape rehabilitation would also conform to the Secretary of the Interior's Guidelines for the Treatment of Cultural Landscapes (NPS 1992b).

## ARCHAEOLOGY

The potential impacts of development within the PHSH district on archaeology are analyzed on pages 215 through 217 of the PTMP EIS. The PTMP acknowledges that the history of the Marine Hospital and Presidio are intertwined both in the development of military reservation lands and in the provision of services to the community. As a civilian facility, the Marine Hospital provided free medical care, both short-term and convalescent, to merchant marines. While none of the buildings remain from the original 1870s complex, the site had been continuously used as a marine hospital for more than 100 years, from its 1875 opening to its closing in 1981 by the United States Public Health Service. Subsurface remains of the cemetery associated with the early history of this facility do exist, and lie largely beneath an extensive paved court and parking area located on the rise near the southwest corner of the upper plateau. Historical research suggests that a substantial cemetery once existed behind the old Marine Hospital. While records could not be found to establish that the burials of the cemetery had been relocated, the Army assumed that a relocation had taken place. In 1990 the Army conducted a test excavation in an area presumed to have been the Marine Hospital cemetery and found the remains of two burials below almost 15 feet of concrete rubble. In 2002, field investigations for environmental remediation of Landfill 8 by the Trust also encountered human remains near the ground surface (URS 2003). Historical research suggests that the remains of approximately 500 to 600 individuals are interred in the cemetery.

The PTMP EIS analysis concludes that building demolition, new construction, infrastructure upgrades, vegetation management, and native plant restoration within the district all have the potential to impact archaeological sites.

Guidelines in the PTMP and measures contained in the PA would help avoid or mitigate potential adverse impacts on sites. These include protecting and commemorating the former Marine Cemetery (PTMP, page 98), and preparing and implementing an Archaeological Management Assessment and Monitoring Program to discover, document and protect predicted sensitive archaeological areas prior to construction (Mitigation Measure CR-9 *Ground Disturbing Activities*).

## GEOLOGY AND SOILS

The impact topic of geology and soils is discussed on page A-5 in Appendix A of the PTMP EIS. Two major active faults lie near the Presidio: the San Andreas (about 9 kilometers west) and the Hayward (about 16 kilometers east). Strong earthquake shaking is highly likely to result from earthquakes on the San Andreas or Hayward faults, or other more distant faults in the San Francisco Bay Area.[7] In addition, soils in the Presidio are mostly excessively drained sands, artificial fill, and other urban land (asphalt, concrete, etc.), all of which are subject to seismic ground shaking hazards to some degree. Future earthquake shaking may be exacerbated and damage intensified within these areas because the soft liquefiable sands may lose strength rapidly.[8]

The PHSH district is not located within a seismic hazard zone (California Geological Survey 1997a).[9] According to a building seismic analysis prepared for the City and County of San Francisco (Fong & Chan Architects 1990), the buildings are generally usable and in good condition, with no indication of serious structural damage to the primary structural systems from recent or past earthquakes, settlements or overloads. Damage to interior finishes and some areas of exterior cladding and deterioration from age or other causes were observed. However, neither the 1932 original hospital nor the 1952 addition meet current safety standards or conform to code requirements for seismic forces, and would require seismic upgrading (Fong & Chan Architects 1990; Architectural Resources Group 1991; Faye Bernstein & Associates 1999).

The PTMP EIS concludes that site-specific development projects would require supplemental review to evaluate geologic and seismic hazards (page A-5). Prior to building rehabilitation or replacement construction, the project development team would be required to employ a geotechnical engineer to investigate the site and recommend measures to ensure public safety given site-specific conditions. Similarly, a structural engineer would be required to provide guidance regarding necessary improvements to existing buildings and foundations. In developing measures to address seismic hazards, the guidelines established by the California Geological Survey (1997b) should be utilized.

[7] The California Geological Survey has calculated the ground motion using probabilistic seismic hazard methods as outlined in the joint Division and U.S. Geological Survey report, Division Open-File Report 96-08. For the Design Basis Earthquake (i.e., 10 percent chance of exceedance in 50 years), ground motion is calculated to be Peak Ground Acceleration (PGA) = 0.67g. A value over 0.65g is considered “violent shaking,” with the potential for “heavy” damage to structures.

[8] An investigation of slope stability at Landfill 10 is underway, and will help to determine the configuration of the parking area west of the main hospital (Trust 2003c).

[9] Defined as an area where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicates a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required (California Geological Survey 1997a).

## BIOLOGICAL RESOURCES

Biological resources within the PHSH district are identified on pages 83 through 119 of the Presidio PTMP EIS and pages 94 through 95 of the PTMP. The upper plateau of the district supports unique and ecologically significant native plant communities that include coast live oak woodland, central dune scrub, and riparian and dune slack wetland vegetation, as well as the San Francisco lessingia, a federally-listed endangered plant. The complex array of vegetation also provides valuable habitat for the largest known California Quail population in San Francisco, as well as other wildlife species. As discussed in the U.S. Fish and Wildlife Service's (USFWS) Draft Recovery Plan, the dune slope immediately behind the main hospital building that currently supports a nonnative, nonhistoric stand of cypress trees serves as a buffer between the built (lower) and generally unbuilt (upper) portions of the district (USFWS 2001; Trust 2002a).

The potential impacts of development within the district are analyzed on pages 220 through 238 of the PTMP EIS, and in the USFWS Biological Opinion (2002). The analyses assumes that no construction activities (such as placement of fill material, mechanized land clearing, land leveling and road construction) would occur beyond existing developed areas and therefore existing natural habitat would not be displaced. However, at Battery Caulfield (above the Nike swale) approximately 2 acres of currently paved and disturbed area is designated for potential reuse. The precise effect of the change in land use would depend on the site-specific changes proposed. Possible secondary effects from use of this site could include potential changes in hydrology of the existing wetland, conversion of adjacent early successional native vegetation to more shrubby vegetation assemblages, and disturbance to wildlife and sensitive plant and wildlife species (page 223).

The PTMP EIS analysis indicates that future uses would be subject to the mitigation measures identified in the EIS and the "minimization measures" included in the Biological Opinion, as well as site-specific planning and environmental review that would take place prior to any substantial construction or demolition. The mitigation measures include the use of buffer areas to protect sensitive species, such as a 50-75 foot dense vegetation buffer to be established from the base of the main hospital building to prevent any potential conflicts between building operations and viable lessingia habitat on the upper plateau (Mitigation Measure NR-5 *Wildlife and Native Plant Communities* and Trust 2002).[10] Additional mitigations call for restrictions on the use of non-native invasive plant species (Mitigation Measure NR-1 *Native Plant Communities*), and implementation of best management practices (Mitigation Measure NR-6 *Best Management Practices*). Furthermore, development within Battery Caulfield would need to be consistent with the Presidio California Quail Habitat Enhancement Action Plan

[10] Additionally, this buffer would reduce the potential for lessingia establishment directly adjacent to the building.

(Trust 2002e), which identifies specific treatments for the open space surrounding the battery, such as planting native plants to create foraging areas, and removing iceplant and other nonnative species.

## WETLANDS, STREAMS AND DRAINAGES

Notable water features within the PHSH district are identified on page 118 of the PTMP EIS and include a dune wetland feature on the upper plateau that supports characteristics of a dune slack wetland (shown in Figure 19 of the PTMP EIS). Its associated vegetation assemblage is the only remnant example of this vegetation type on the northern San Francisco peninsula. The potential effects of development within the PHSH district on this wetland are analyzed on page 242 of the PTMP EIS, and derive from development within Battery Caulfield. The analysis assumes that new (replacement) construction would be limited to developed areas, and concludes that development within Battery Caulfield would likely have a minimal direct impact on the existing wetland due to the site's upland and more distant location.

The PTMP EIS specifies that proposed uses of Battery Caulfield will be designed or otherwise conditioned to minimize changes in the local hydrology (Mitigation Measure NR-11 *Nike Missile Site*). In addition, BMPs and other standard drainage and vegetation protection measures would be required to help ensure the wetland system is not impacted. Management of the wetland would be consistent with the objectives set forth in the native plant community zone of the VMP.

## WATER QUALITY

Water quality issues within the Presidio are discussed on page 121 of the PTMP EIS. The Presidio has implemented and is operating under the Presidio of San Francisco Stormwater Management Plan (SMP) (Dames & Moore 1994), which includes a detailed Storm Water Pollution Prevention Plan that outlines erosion prevention and sedimentation control measures used by the Presidio to avoid contamination of storm drains and surface water resources. The SMP is being updated to reflect changes in storm water routing as well as new Phase II stormwater permitting requirements. Water quality is also addressed for Lobos Creek and Mountain Lake, which are adjacent to the PHSH district.

Most of the runoff from impervious areas within the district is collected and discharged to the city's storm drain system, which conveys storm drainage out of the watershed. As noted on pages 245 and 246 of the PTMP EIS, demolition and new construction could result in indirect downstream impacts due to erosion, sedimentation, and discharges of other pollutants.

Federal and state National Pollutant Discharge Elimination System (NPDES) permit requirements would address nonpoint source storm water pollution issues and other potential water quality impacts.  All work within the district would be performed in accordance with the SMP. As required by Mitigation Measure UT-7 *Stormwater Reduction*, proposals within the district would implement designs or measures to limit or eliminate impervious surfaces in order to reduce stormwater runoff volumes and improve water quality.  The measure encourages that on-site vegetation and landscaping would be used as a filtration and retention system to the extent feasible.

Finally, the Presidio's domestic water supply permit for the water treatment plant prohibits the use of reclaimed wastewater use within the district to avoid degradation of water quality in Lobos Creek (California Department of Health Services 1997).

## VISUAL RESOURCES

Visual resources within the PHSH district are discussed on page 122 of the PTMP EIS. The district is considered an important historic and contemporary vista point that provides visitors with views of the cityscape to the south, Lobos Creek to the west, and Mountain Lake to the east.  The PTMP (pages 95 through 97) also notes that the "dominant" hospital building and a number of smaller buildings that face the city "present a strong image, with prominent massing and classical detailing."

The potential impacts on visual resources due to new construction within the PHSH district are analyzed on page 249 of the PTMP EIS.  The analysis concludes that replacement construction would be necessarily designed and limited such that the association, feeling, and setting of the remaining elements of the visual and cultural landscape would not be severed or impaired.

New construction would conform with the PTMP Planning Principles and PHSH District Guidelines to help ensure that it would be sensitive to the prevailing architectural treatment, scale, and orientation of existing structures, and designed to reinforce the historic setting.  The guidelines for the PHSH district address overall spatial organization and land patterns, buildings and structures, open space, vegetation, views, and circulation and access and include the following:

- Maintain the historic patterns of development, primarily on the lower plateau.  The formal placement of buildings around open space and the definition of open space and streets through plantings should be retained. Infill construction should respect historic spatial relationships, scale and orientation of buildings (Spatial Organization and Land Patterns, page 96);
- Maintain the historic character of the complex.  In concert with historic building rehabilitation, cluster additions and/or replacement construction onto compact sites,

close to existing buildings, to reinforce the campus-like setting (Buildings and Structures, page 97);

- Ensure that any replacement construction is secondary to the former hospital as the predominant building in the complex (Buildings and Structures, page 97);
- Maximum heights should be between 30 feet to 45 feet for outbuildings and 70 feet for buildings adjacent to the main hospital (Buildings and Structures, page 97); and
- Preserve and enhance view corridors and panoramic viewsheds both from and to the district. Significant views include Mountain Lake from Wyman Terrace and Lobos Creek Valley from the western edge of the district, as well as sweeping views of the city and ocean from the upper plateau (Open Space/Vegetation/Views, page 99).

Further guidance is provided in the PHSH Draft Planning and Design Guidelines (Trust 2003b).

## AIR QUALITY

The air quality impacts of development within the PHSH district are analyzed on pages 252 through 260 in the PTMP EIS pursuant to Bay Area Air Quality Management District guidelines (BAAQMD 1999). The analysis concludes that: 1) demolition and construction activities would create fugitive dust particulate matter that could cause adverse effects on local air quality; 2) projected motor vehicle use would not cause violations of ambient air quality standards for carbon monoxide at congested intersections such as the 14th Avenue/Lake Street intersection; and 3) housing and employment growth could induce emissions from transportation and energy demand that would be inconsistent with the assumptions in the 2000 Clean Air Plan (CAP).

Feasible BAAQMD-recommended control measures for fugitive dust particulate matter (PM10) would be required to limit adverse effects on air quality during demolition and construction activities. The Presidio Trust Transportation Demand Management Program, which consists of activities conducted by the Trust and by the park's tenants, would implement relevant transportation control measures of the CAP to reduce the number and length of vehicle trips, and thus minimize air emissions and maintain consistency with the CAP.[11] Finally, should any building demolition activities occur, an environmentally effective approach (such as deconstruction) would be required to reduce PM10 emissions.[12]

[11] As required by Mitigation Measure NR-21 *Transportation Control Measures*.
[12] As required by Mitigation Measure NR-22 *Deconstruction/Demolition Techniques*.

## NOISE

The noise impacts of development within the PHSH district are analyzed on pages 260 through 262 in the PTMP EIS using compatibility standards established by the City of San Francisco and the Federal Highway Administration. To assess effects in the City of San Francisco near the 15$^{th}$ Avenue Gate, peak hour noise levels were estimated for the gate. The analysis concluded that while traffic volumes near the gate would increase noise above background levels, the increase would not be substantial (i.e., would not exceed applicable noise abatement criteria) and would not warrant mitigation. Demolition and construction activities would create short-term impacts on the noise environment.  This noise could at times be distinctive and disruptive to park users and other people within close proximity of the activity.  However, a suitable buffer distance (i.e., greater than 250 feet) exists between most proposed construction activities within the PHSH district and residences within the City of San Francisco.

Mitigation Measure NR-23 *General Construction/Demolition Noise* requires that during construction, contractors and other equipment operators would be need to comply with the San Francisco Noise Ordinance (San Francisco Municipal Code, Section 2907b), which requires that each piece of powered equipment, other than impact tools, emit noise levels of not more than 80 A-weighted decibels (dBA) at 100 feet.

## LAND USE

The impact of new uses within the PHSH district on the Presidio and surrounding neighborhoods is analyzed on pages 274 through 276 of the PTMP EIS.  The analysis acknowledged that the reoccupation of the district as a residential and educational community would represent a “major change” in historic land use adjacent to the neighborhood, and a change in current activity levels in this area, since the hospital site has been relatively unused and vacant since 1981.  However, the district would remain at the same level of development, and there would be no substantial conflicts with adjacent land uses.

Any additional noise and traffic in the vicinity due to the proposed changes in land use would be mitigated through measures identified in other relevant sections of the EIS.

## SOCIOECONOMIC ISSUES/HOUSING SUPPLY

The impacts on housing supply from development at the Presidio were analyzed on pages 282 through 288 of the PTMP EIS.  The analysis determined that employment at the Presidio would generate demand for roughly 3,000 new households in the region, of which approximately half would live in the Presidio.  The PTMP EIS analysis also assumes that 200,000 square feet in the district would be in residential use, with the bulk of remaining square footage in educational use (Table 39). The PTMP (page 45) allows for an increase in the PHSH district (historically a mixed-use area that included houses and dormitories) of the number of residential accommodations, converting the 314,000 square-foot hospital to residential use, and possibly, senior housing if feasible. Planned housing retention, removal, and replacement for the PHSH district is presented in Figure 2.4 of the PTMP and below:

- Existing Dwelling/Dorm Units: 11/86 (Total 97)
- Units to be Removed or Converted to Non-Residential Use: 0-90
- New Units within Existing Buildings: 80-200
- New Units within New Construction: 0-40
- Maximum Number of New Residences: 200-210

The PTMP acknowledges that the number of planned units is given as a range that reflects general goals, and that achieving these goals would depend on site-specific assessments of building configuration and financial feasibility, as well as progress toward meeting other planning objectives (such as preserving historic buildings or providing a reliable long-term source of revenue available to the Trust). This acknowledgement is reinforced by the following text correction in the PTMP Record of Decision (August 2002) incorporated by reference and added as a footnote to Table 39 of the PTMP EIS:

> *The Final Plan Alternative states as a preference residential use of the PHSH building, which is approximately 314,000 square feet including both historic and non-historic portions. (Non-historic portions may be removed and replaced elsewhere on the site.) Residential use of the building is the Trust's preference, despite the assumption in the Final EIS analysis that only 200,000 square feet would be in residential use, with the bulk of remaining square footage in educational use. Because educational use represents a more intense use, in terms of the number of persons on site, the number of peak period automobile trips, and other considerations, the assumptions inherent in the Final EIS analysis are considered more conservative (i.e. they would generate more impacts and less revenue) than the preference stated in the Plan, and thus did not warrant modification between the Draft EIS and the Final EIS. Nothing in the Final EIS analysis should be construed as negating the Trust's preference for residential use of the PHSH building, and the potential educational use of auxiliary structures in the PHSH complex.*

It is anticipated that project development teams will assess the configuration and feasibility of a project that meets the Trust's goals for the district. If a project proposal includes more units than are assumed in the PTMP or the PTMP EIS, the potential environmental effects of this change would need to be assessed, including effects on housing available to Presidio-based employees and the Trust's progress towards a jobs/housing balance (Mitigation Measure CO-2 *Jobs/Housing Balance Monitoring*).

## SCHOOLS

The potential impacts of development within the PHSH district on public schools were analyzed on pages 288 through 292 of the PTMP EIS. The effect on schools was calculated by comparing the number of school children generated (derived from the number of residential units proposed within the district) to existing capacity within the San Francisco Unified School District. The analysis determined that minor changes in enrollment due to changes in overall Presidio occupancy would not have a significant impact because the school district could adequately provide the needed services, and continue to receive compensation through the Federal Impact Aid program. No applicable measures have been identified.

## VISITOR EXPERIENCE

The potential impacts from expanded residential and educational uses at the PHSH district on the experience of park visitors[13] are analyzed on pages 292 through 296 of the PTMP EIS. The analysis assumes that a residential and educational community at the district would contribute to the vitality of the larger Presidio community, and determined that visitors would benefit from public access to portions of rehabilitated historic buildings, interpretive displays, enhanced open space (including restoration of remnant natural areas), and commemoration of the former Marine Cemetery. The Trust would facilitate educational opportunities for visitors, and support interpretive programs, events, and outreach provided by the NPT, tenants and others. The analysis concludes that these enhancements would result in beneficial impacts on visitor interpretation and education, and no project-specific mitigation measures would be necessary.

## RECREATION

The impacts on recreational improvements within the PHSH district are within the scope of and adequately analyzed on pages 296 through 298 of the PTMP EIS. The analysis assumed that improvements such as new trails, including the Juan Bautista de Anza National Historic Trail, the West Pacific Mountain Lake Corridor, and the Lobos Creek Valley Trail Corridor would be designed and constructed to improve bicycle and pedestrian circulation and connect the Presidio trail system to the existing regional network in accordance with the draft Presidio Trails and Bikeways Master Plan (NPS and

[13] Impacts on visitor experience include visitor orientation, interpretation, public access, park tenants, and events and cultural programs.

Trust 2002).[14] Upon completion and approval of the Presidio Trails and Bikeways Master Plan, the Trust would implement priorities for trails to enhance connections between the district and other key features of the Presidio (Mitigation Measure CO-11 *Trail Maintenance and Enhancement*).

## PUBLIC SAFETY

The potential impacts due to the increased demand for law enforcement, fire protection and emergency response services resulting from an increase in resident and employee population in the Presidio is evaluated on pages 298 through 301 of the PTMP EIS. Law enforcement services at the Presidio are provided by the U.S. Park Police (USPP) San Francisco Field Office (SFFO), and fire protection and emergency medical services are provided by the NPS' Presidio Fire Department. Pursuant to an Interagency Agreement, the Trust reimburses the USPP and the NPS for the costs of providing law enforcement and fire prevention and suppression services. The analysis concludes that development within the PHSH district as a residential and educational community (including senior housing) would potentially raise the number of calls for police service, fire protection, and emergency response.

The PTMP EIS assumes that the public safety service providers would review a specific proposal against public safety service standards following tenant selection within the district and identify any appropriate increases in staff, equipment, and facilities to maintain adequate services. Costs to provide services would be reimbursed through Service District Charges.[15]

## ROADWAY NETWORK

The potential impacts of development within the PHSH district on future traffic conditions on Presidio and city roadways were analyzed on pages 302 through 327 of the PTMP EIS. Two city streets through the residential Lake Street neighborhood in the city's Richmond District, 14th and 15th Avenues, provide the main opportunities for vehicular access. The 14th Avenue vehicular access is currently closed. Access to the district from other parts of the Presidio would continue along Battery Caulfield Road, and through traffic would be discouraged.

[14] In addition, the PTMP and the PTMP EIS assumed that the tennis court would be removed to expand natural habitat and enhance the cultural landscape, relocated and made available to the public at a nearby site.

[15] The Presidio is exempt from state and local property taxes. Presidio Trust tenancies are subject to a service district charge to pay for Presidio-provided services, such as fire protection, police protection, road maintenance, street lighting, off-site landscape maintenance, stormwater drainage, and emergency medical response. This charge is subject to periodic adjustment.

The PTMP and PTMP EIS assume that the 14th Avenue Gate (currently closed to vehicular access) would be reopened, and 14th and 15th Avenues would be operated as a one-way couplet, with 14th Avenue accommodating inbound traffic and the 15th Avenue Gate accommodating outbound traffic.[16] The PTMP and PTMP EIS analyze the effect of the one-way couplet operation, which minimizes traffic impacts from new uses and improves circulation and access for the district. The Trust has taken the PTMP one-way couplet concept a step further by reviewing alternative means of providing access to the district, including a no action alternative (Trust 2003a). These alternatives have been reviewed by the San Francisco Department of Parking and Traffic, since changes would primarily be required on city property.

Prior to the PTMP, three other alternatives were explored that accessed the district directly from Park Presidio Boulevard (Wilbur Smith Associates 1999). These alternatives were rejected by the Trust and Caltrans due to environmental considerations and impacts to Park Presidio Boulevard. During their review of the alternatives, Caltrans found it “difficult to see any justification for disrupting the travel of current Park Presidio Boulevard users in order to accommodate the relatively small amount of traffic generated by the proposed development, especially with existing ingress and egress that is likely to be functionally adequate to meet the traffic needs of the development” (Caltrans 1999).

The Trust currently believes, based on the analysis in the PTMP and the current draft study above, that a vehicular access plan to the district that is compatible with the district can be developed without having direct access from Park Presidio Boulevard. In addition to the one-way couplet concept, key components of the plan would be to select uses for the district that minimize traffic, further reduce traffic through aggressive transportation demand management programs (as described in Appendix D of the PTMP and required under Mitigation Measure TR-22 *TDM Program Monitoring*), and develop an internal road system that prohibits or strongly discourages through traffic (see page 99, PTMP Guidelines for Circulation and Access).

## CONSTRUCTION TRAFFIC

The short-term impact of construction traffic on the roadway network due to demolition and construction activities within the PHSH district and elsewhere within the Presidio is discussed on page 321 of the PTMP EIS. Construction vehicles would include trucks hauling construction debris and delivering construction materials and supplies, as well as construction worker vehicles. The volume of construction vehicles accessing the district would vary, depending on the specific construction activity and the schedules of the various building elements of individual projects. Construction-related traffic could create

[16] Mitigation Measure TR-11 *14th Avenue/Lake Street Intersection Improvements* requires that when needed (i.e., prior to the intersection operations deteriorating to LOS E or F), the 15th Avenue Gate should be designated for outbound traffic, and the 14th Avenue Gate opened for inbound traffic.

some conflicts with local and regional traffic, especially from the larger construction vehicles.  However, because construction vehicle trips traveling to and from the district would be dispersed, the vehicle trips on other regional roadways would not be substantial and would generally fall within the normal fluctuations of traffic.

As required by Mitigation Measure TR-26 *Construction Traffic Management Plan*, a traffic management plan would be developed prior to construction to provide specific routes and other measures to minimize potential traffic impacts.

## PARKING

There are three principal parking lots within the PHSH district, located to the north, east and west of the hospital.  The parking lot north of the building (currently in use by the Trust for temporary storage of landscape materials and designated for removal under the PTMP) has a capacity of 233 spaces.  The parking lot on the eastern portion of the site has 37 spaces, and the parking lot on the western portion of the site (on Landfill 10) has approximately 200 spaces.  In addition, there are 69 on-street parking spaces, for an estimated total of 539 spaces (Wilbur Smith Associates 1999).  The PTMP (page 51) allows for parking areas to be redesigned or relocated to simplify access or to reduce visual impacts.  The PTMP EIS (page 314) assumes that the number of parking spaces within the district and elsewhere within the Presidio would provide an amount five percent greater than projected average demand. Constraining supply and charging for parking would seek to limit automobile use, and would require careful planning to avoid spillover effects in the adjacent neighborhoods.

As required by Mitigation Measure TR-22 *TDM Program Monitoring* the Trust would implement a TDM Program within the district to reduce automobile usage by all tenants, occupants and visitors (see Appendix D of the PTMP for a full description).  The Trust would monitor implementation and effectiveness of the TDM program on an ongoing basis. If the TDM performance standards as described are not being reached, the Trust would implement more aggressive TDM strategies or intensify components of the existing TDM Program, such as requiring tenant participation in more TDM program elements, and more frequent and/or extensive shuttle service.

## WATER SUPPLY AND DEMAND

The potential impacts of development within the PHSH district on water demand were analyzed on pages 328 through 333 of the PTMP EIS. The Trust operates a facility that treats water from Lobos Creek to provide potable water to the park.  Supplemental water is purchased from the City and County of San Francisco as needed. The proposed use of the district for 400,000 square feet for cultural/educational and residential purposes (Table 39, page 271) is taken into account in the Presidio's water demand calculations (see Appendix H of the PTMP EIS). In addition, should the main hospital building be used primarily for residential use (i.e., greater than 200,000 square feet as indicated in Table 39), water demand estimates for the district should be considered conservative, as cultural/educational and lodging uses would consume more water than residential.[17] With a new use, the PTMP EIS assumes the district would become a model of responsible water use and a demonstration site for water conservation programs.

Mitigation Measure UT-1 *Demand Management Best Management Practices* would require that Best Management Practices be implemented to encourage water conservation, including the following:

- Installing low-flush toilets, low flow showerheads, and other water-saving devices in all buildings;
- Integrating non-invasive, drought-tolerant, low-maintenance landscaping into the development areas to the extent possible to promote efficient and effective water application;
- Retrofitting landscaped areas with low-flow irrigation devices; and
- Informing tenants and residents of water conservation practices.

## WASTEWATER TREATMENT AND DISPOSAL

The potential impacts of development on the wastewater treatment and disposal system were analyzed on pages 332 through 335 of the PTMP EIS. Wastewater was projected by applying a 90 percent factor to the domestic water use estimates (discussed directly above), and compared to current levels to determine impacts on the City's sanitary sewer system, which treats wastewater from the Presidio. The PTMP EIS determined that, at full occupancy including the new use at the PHSH district, the Presidio would generate less wastewater than the 1990 levels. In addition, wastewater generated from the district would be routed to the City's Oceanside Water Pollution Control Plant, which has a greater capacity to absorb wet weather flows than the City's Southeast Water Pollution Control Plant. Mitigation Measure UT-4 *Reduction of Onsite Wastewater Generation* acknowledges that water conservation practices required by Mitigation Measure UT-1 (discussed above) to minimize water usage within the district would reduce wastewater generation and flows to the City's system.

[17] Lodging and Cultural/Educational uses would demand 0.27 and 0.18 gallons per square foot per day, respectively, while residential use would demand 0.13 gallons per square foot per day (page H-1, PTMP EIS Appendix H).

## STORM DRAINAGE

The impact due to stormwater runoff within the PHSH district was assessed on pages 335 through 341 in the PTMP EIS. The assessment estimated the amount of net new construction (i.e. new construction less demolition) in the district to determine changes in permeable surfaces and thus stormwater runoff. Stormwater presently flows via the Caltrans storm line that runs along the north side of Lobos Creek and connects to the Richmond Transport Tunnel, which is part of the City's combined sewer system. The district does not experience flooding problems. The analysis determined that no additional demands or impacts on this system are anticipated because the maximum permitted buildings (up to 400,000 square feet) would not increase over existing built space and would be limited to already developed areas.

The following mitigation measure in the PTMP EIS (page 341) would require that infrastructure improvements be installed prior to new construction to minimize stormwater runoff and comply with existing water quality standards, regulatory requirements and the Trust's stormwater quality control (pollution prevention) program:

> UT-7 *Stormwater Reduction.* As part of planning for future projects under the PTMP, the Trust would implement designs or measures to limit or eliminate impervious surfaces in order to reduce stormwater runoff volumes and improve water quality. The Trust would practice natural stormwater reduction by using on-site vegetation and landscaping as a filtration and retention system to the extent feasible. Grass, sand, and other porous surfaces, particularly when placed around non-porous surfaces such as asphalt, could significantly limit stormwater runoff. Projects would be reviewed to determine if stormwater flows could be limited through reduction of impervious surfaces and addition of porous surfaces.

## SOLID WASTE

The impacts of demolition, construction, and rehabilitation activities at the PHSH district on the regional waste stream are analyzed on pages 341 through 344 of the PTMP EIS. These activities, including demolition of the nonhistoric hospital wings, would result in the disposal of up to 12,600 tons of debris, constituting .001 percent of the regional solid waste stream in 1999 (see Table 1 in PTMP EIS Appendix I). The PTMP EIS assumes that solid waste would be reduced through efficient resource use, recycling and reuse, and by diverting organic material from waste and purchasing products composed of recycled materials. Recycled asphalt and concrete would be used for paving where practical. Recycling bins would be available at all activity sites, and tenants would be encouraged to set aside indoor recycling areas.

Mitigation Measure UT-8 *Waste Diversion* would require implementing other cost-effective, environmentally protective alternatives to disposal of demolition debris including the following:

- Selection of contractors who understand the processes involved and are able to maximize reuse and recycling of construction and demolition materials;
- Clearing salvageable items from structures prior to demolition activities, including such items as piping, flooring, doors, windows, bathroom fixtures and kitchen fixtures, hospital equipment, heaters, and lumber;
- Removing and encapsulating contamination before demolition to minimize commingling of the wastes and to maximize reuse of the uncontaminated materials;
- Bringing down buildings piece by piece to recover the maximum amount of reusable materials; and
- Size-reducing (especially concrete) and presorting and segregating materials after demolition to increase salvage value of the recovered materials, and to decrease tipping fees for different materials in the debris; and
- Recycling materials on-site to lower both hauling and disposal costs.

## ENERGY CONSUMPTION AND DISTRIBUTION

The PHSH district is served directly by PG&E from a 4160 circuit that ties into the Trust's PHSH switch room in the main hospital building. From the switch room, power is delivered to all of the outlying buildings.

The potential impacts of development within the PHSH district on electrical use were analyzed on pages 344 through 347. The square footage for proposed land uses within the district (provided in Table 39 on page 271) was used to project the electrical use and demand. Based on the projections in Table 3 of PTMP EIS Appendix J, up to 3.64 million kilowatt-hours of electricity would be consumed at the district annually. Should the main hospital building be used primarily for residential use (i.e., greater than 200,000 square feet as indicated in Table 39), electrical use projections for the district should be considered conservative, as residential use consume approximately half the energy (per kWh/sf) than the other specified uses (lodging and cultural/educational). The PTMP EIS assumes that the project development team would work directly with the Trust (or PG&E)[18] to upgrade the electrical system serving the district for safety and efficiency, including repair and rehabilitation of old cables, and where possible, undergrounding of overhead lines.

[18] While the Trust operates and maintains the electrical distribution system at the Presidio, it is a bundled service customer of PG&E. Therefore, the development team may choose service directly from PG&E.

As required by Mitigation Measure UT-11 *Energy Conservation*, the following practices would be employed within the district to assist the Trust in meeting the goals of Executive Order 13123 and to minimize the environmental impacts of energy consumption:

- Meeting or surpassing the energy conservation requirements of California Title 24 energy code during building rehabilitation where these requirements do not conflict with historic preservation objectives;
- Carrying out cost-effective energy conservation retrofits of buildings and utility infrastructure;
- Educating tenants and visitors about energy conservation;
- Developing energy conservation and efficient energy generation demonstration projects in individual buildings;
- Participating in energy efficient appliance and computer purchasing programs; and
- Installing energy management systems in all non-residential buildings both to monitor energy use and to enable remote troubleshooting and building controls.

## NATURAL GAS SUPPLY

PG&E owns and maintains the gas infrastructure on the Presidio. Currently, Building 1801 does not have any gas service and it is currently disconnected from the central boiler system. The remaining buildings within the complex are served from a centrally fired, low pressure steam system operating out of Building 1802.

The natural gas demand of Presidio-wide development is estimated on pages 347 through 350 of the PTMP EIS. The natural gas use projections in Table 56 of the PTMP EIS take into account proposed uses (by square foot) within the PHSH district as a factor for estimating future demand, which was then compared to peak demand to determine if adequate infrastructure exists to meet projected demand.[19] The PTMP EIS assumes that development within the district would adopt the principles of sustainable design and technology, and conservation measures would be practiced to minimize natural gas usage. The analysis concluded that the existing natural gas distribution infrastructure has adequate capacity to meet proposed demand. However, upgrades to the infrastructure to and within the district are likely necessary.

[19]Should the main hospital building be used primarily for residential use (i.e., greater than 200,000 square feet as indicated in Table 39), natural gas consumption within the district would be less than projected, as residential use would consume less natural gas (therms/sf) than the other specified uses (lodging and cultural/educational).

Implementation of Mitigation Measure UT-11 *Energy Conservation* would also reduce natural gas usage.

### CUMULATIVE IMPACTS

The cumulative impacts of PHSH district and other development in the Presidio are analyzed within the PTMP EIS.[20] Table 62, which provides the context for the discussion, enumerated past, present and reasonably foreseeable actions, including projects by other agencies (NPS, USFWS and the City and County of San Francisco Planning Department), that were specifically considered in the analysis (in addition to background growth). The identified actions were chosen based on their proximity to the Presidio, their potential influence on the same resources that could be affected by implementation of the PTMP (i.e., whether the effects of these actions would be similar to those of the project), and the likelihood of their occurrence. The actions were identified by consulting with various agencies within a project impact zone (which varied for each resource) and investigating their actions in the planning, budgeting, or execution phase. In some cases, cumulative effects were also compared to appropriate national, state, regional, or community goals to determine whether the total effect would be significant. In all but one resource area, the analysis in the PTMP EIS determined that cumulative impacts would not be significant and that the resources of concern would not be degraded to unacceptable levels. Cumulative air quality issues were found to be potentially significant because of contributions to regional growth (i.e., not because of localized air quality impacts). Development within the PHSH district would contribute to the referenced cumulative impacts. No mitigation measures for cumulative impacts have been previously identified.

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[20]Cumulative impacts result when the impacts arising from an action are added to those of other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions occurring over time (40 CFR Section 1508.7 as cited on page 363 of the PTMP EIS).

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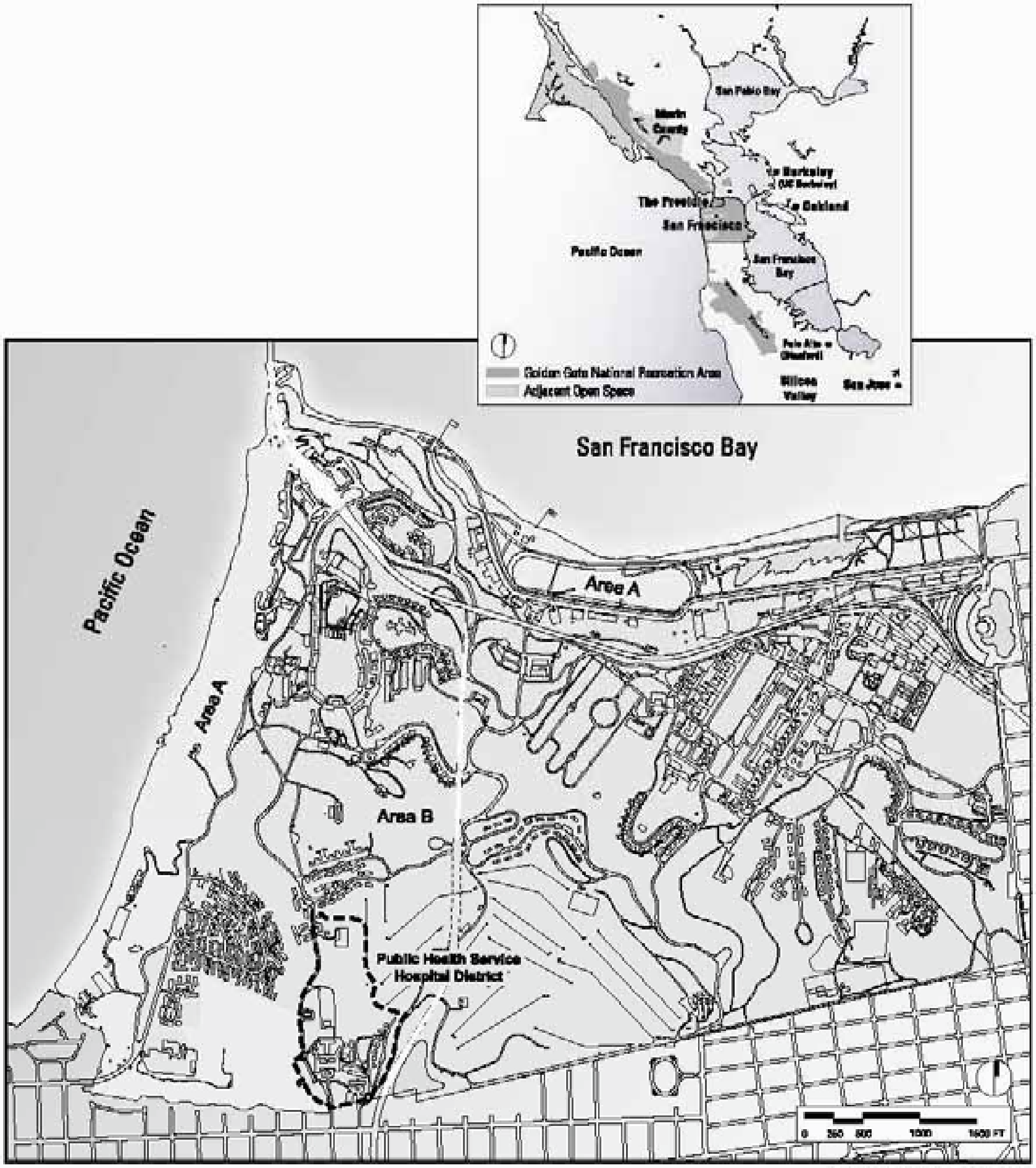


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