

SOUTH ACCESS TO THE GOLDEN GATE BRIDGE

# DOYLE DRIVE

## **ADDENDUM TO THE FINAL TRAFFIC AND TRANSIT OPERATIONS REPORT**

**OCTOBER 2006**

## 7.0 DESIGN YEAR CONDITION OF REFINED PRESIDIO PARKWAY ALTERNATIVE

This chapter describes the forecasted traffic and transit operations for the Refined Presidio Parkway alternative and expands an evaluation of nearby intersections to report the various potential results of traffic from the different alternatives. This chapter is intended as a supplemental chapter to the *Traffic and Transit Operations Report* published in December 2004.

The DEIS/R was circulated for public comment in December 2005 and the comment period closed on March 31, 2006. There were two public hearings during the public comment period to present the proposed alternatives to the public and solicit their comments on the alternatives. In addition, several informal workshops were held to enhance the public's understanding of the alternatives, gather input and review proposed design refinements. The recommendation of a preferred alternative was made based on the refined alternatives.

Additional analysis of area intersections is also included because of many comments received during the review of the Draft EIR/EIS. In particular, a number of neighborhood concerns about traffic intrusion onto local neighborhood streets are examined here.

### 7.1 REFINED PRESIDIO PARKWAY ALTERNATIVE

#### 7.1.1 Refinements to Presidio Parkway Alternative

In response to comments received during the public circulation period and to address traffic circulation, tidal inundation issues, the elimination of the underground parking below Doyle Drive and the provision of additional surface parking to more closely match the existing condition, the following refinements were made to the Presidio Parkway Alternative:

- The Hook Ramp option at the Park Presidio interchange was modified to reuse portions of the existing ramps to reduce impacts to resources while achieving similar improvements to traffic safety.
- In order to simplify construction, a portion of the alignment west of the Battery tunnels was adjusted to accommodate single stage construction of each tunnel structure.
- To reduce disturbance to the existing bluff, the refined alternative proposes to raise the profile of the southbound lanes by up to three meters (ten feet). The change in profile will need to balance the need to reduce impacts to the bluff with the potential for greater noise impacts and visual intrusion. To further retain the cultural relationship between the upper and lower portions of the Presidio, the landscaping over the Main Post tunnels would recreate the bluff north of the tunnels.
- The accommodation of marsh expansion in to the project corridor would subject the proposed facility to coastal events such as storm surge and tsunamis. In order to meet serviceability design criteria, the profile was raised to clear the 100-year tsunami elevation of 3.4 meters NAVD88. To accommodate the revised mainline profile, the profile of Halleck Street would have to be raised by an additional 0.8 meter (2.6 feet) at the north face of building 228, with the crest of Halleck Street at elevation 10 meters (32.8 feet), similar to the previous alternative.
- The revised profile of the mainline facilitated the creation of greater separation between the northbound and southbound roadways over the future marsh expansion area providing an opportunity for increased light penetration to the ground. The additional curvature to the southbound roadway also enhanced the traffic calming impact of the roadway, reducing traffic speeds before reaching city streets.
- By redesigning the Richardson connection as ramps connecting to an urban street, rather than mainline segments, the traffic balance between Richardson Avenue and Marina Boulevard is more closely matched to the existing condition in the refined alternative.
- In conjunction with the realignment of the southbound roadway, the intersection of the off-ramp to Girard Road was moved twenty meters south (66 feet). This moved the connection along Gorgas

Avenue away from the Gorgas Avenue warehouses, thereby preserving the streetscape in front of the buildings.

- The intersection for the northbound on-ramp was also moved twenty meters (66 feet) south. In conjunction with reducing the northbound off-ramp from two lanes to one lane, much of the landscaping area west of the Palace of Fine Arts was preserved.
- In response to the plans by San Francisco Department of Recreation and Parks (SFDRP) for the rehabilitation of the Palace of Fine Arts and surrounding grounds, the refined alternative maintained Palace Drive as a two-way road and incorporates the modifications proposed by SFDRP at north and south ends where Palace Drive connects to Lyon Street. Based on comments from the Lyon Street residents the Refined Presidio Parkway alternative will also maintain Lyon Street as a two-way street with connection to Bay Street.
- To enhance pedestrian safety and accessibility, the proposed design included pedestrian access under Doyle Drive from the Gorgas warehouses to the Palace of Fine Arts and under Girard Road from the Palace of Fine Arts to the Mason Street warehouses.
- The refinements to the alternative also included a parking concept also that maintains a similar parking supply to the existing condition. The main features were:
  - Elimination of underground parking below Doyle Drive;
  - Redesign parking west of Palace Drive and south of Mason Street warehouses as surface parking rather than underground parking;
  - Modify Palace Drive to provide perpendicular parking on both sides of a two-way Palace Drive;
  - Provide surface parking behind the Gorgas warehouses, and;
  - Provide on-street parking along Gorgas Avenue.

The Doyle Drive Subcommittee to the Citizens' Advisory Committee (CAC), the Doyle Drive Executive Committee comprised of lead, cooperating and responsible agencies and the Authority CAC all held meetings in July 2006 to consider recommendations for a preferred alternative and design options. All three groups made identical recommendations for selection of the Presidio Parkway and design options. The recommendations were: Alternative 5, Presidio Parkway, with specific design elements including the modified Hook Ramp Option for the Presidio Parkway Interchange and the Diamond Option for Presidio Access. The groups did not support including the Merchant Road Slip Ramp Option. In addition, the subcommittee voted to support three design refinements; 1) move Girard Intersection south, 2) restrict Lyon Street connection for the Presidio and 3) Reserve additional right-of-way for the connection from Marina Boulevard to Doyle Drive.

### **7.1.2 Preferred Alternative: Refined Presidio Parkway Alternative**

The refined Presidio Parkway Alternative would replace the existing facility with a new six-lane facility and an eastbound auxiliary lane, between the Park Presidio interchange and the new Presidio access at Girard Road. (See Figure 1-5) The new facility would consist of two 3.3-meter (11 foot) lanes and one 3.6-meter (12 foot) outside lane in each direction with 3.0-meter outside shoulders and 1.2-meter inside shoulders. The southbound direction would include a 3.3-meter (11 foot) auxiliary lane from the Park Presidio Interchange to the Girard Road exit ramp. The width of the proposed landscaped median would vary from 5.0 meters (16 feet) to 12.5 meters (41 feet). To minimize impacts to the park, the footprint of the new facility would overlap with a large portion of the existing facility's footprint east of the Park Presidio interchange.

A 450-meter (1,476-foot) long high-viaduct would be constructed between the Park Presidio interchange and the San Francisco National Cemetery. The height of the high-viaduct would vary from twenty to 35 meters (66 to 115 feet) above the ground surface. Shallow cut-and-cover tunnels would extend 240 meters (787 feet) past the cemetery to east of Battery Blaney. The facility would then continue towards the Main Post in an open at-grade roadway with a wide heavily landscaped median. A retaining wall between four to eight meters (13 to 26 feet) high would be constructed along the south side of the facility between the Battery and Main Post tunnels. A landscaped berm would be constructed along the north side of the facility to shield park visitors from the proposed facility.

From Building 106 (Band Barracks) cut-and-cover tunnels up to 310 meters long (984 feet) would extend to east of Halleck Street. The amount of fill over the tunnels is being coordinated with the Trust based on requirements of the Vegetation Management Plan. The expected minimum depth to support native

vegetation is two meters (6 feet). The facility would then rise slightly on a low level causeway 160 meters (525 feet) long over the site of the proposed Tennessee Hollow restoration and then pass over a depressed Girard Road. The low causeway would rise to approximately three meters (10 feet) above the surrounding ground surface at its highest point. East of Girard Road the facility would return to existing grade north of the Gorgas warehouses and connect to Richardson Avenue. The proposed facility would provide a transition zone starting from the Main Post tunnel to reduce vehicle speeds prior to entering city streets. A motor control and switch gear room to operate the tunnel life safety equipment would be integrated with the Main Post tunnels.

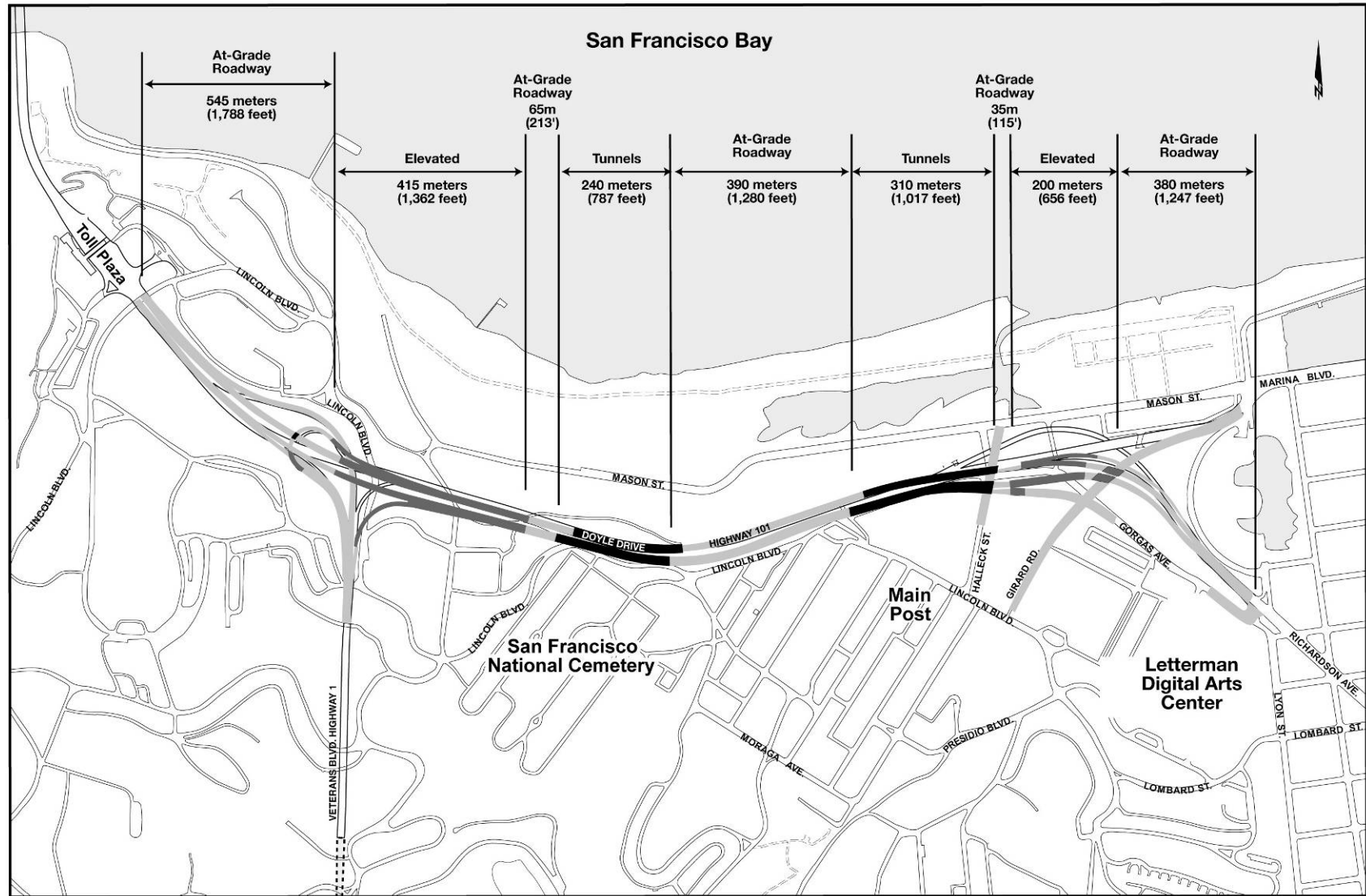
The Park Presidio interchange would be reconfigured due to the realignment of Doyle Drive to the south. The exit ramp from eastbound Doyle Drive to southbound Veterans Boulevard would be replaced with standard exit ramp geometry and widened to two lanes. The loop of the westbound Doyle Drive exit ramp to southbound Veterans Boulevard would be improved to provide standard exit ramp geometry. The northbound Veterans Boulevard connection to westbound Doyle Drive would be realigned to provide standard entrance ramp geometry. The northbound Veterans Boulevard connection to eastbound Doyle Drive would be reconstructed in a similar configuration as the existing directional ramp with improved sight lines, exit and entrance geometry.

The Refined Presidio Parkway Alternative would provide direct access to the Presidio and indirect access to Marina Boulevard in both directions via access ramps from Doyle Drive connecting to an extension of Girard Road. East of the new Letterman garage, Gorgas Avenue is a one-way street with a signalized intersection at Richardson Avenue. North of Richardson Avenue, Lyon Street will remain in its existing configuration that provides access to the two-way to Palace Drive. The surface parking spaces would be reconfigured to maintain the existing parking supply in the area and improve pedestrian access between the Presidio and the Palace of Fine Arts.

Retaining walls would be required at the Park Presidio interchange to accommodate the reconstruction of the ramps. Retaining walls would also be required in the eastern end of the alignment primarily along the extended Girard Road. Fences would be required along the edge of the at-grade portions of the roadway to restrict pedestrian access onto the roadway.

FIGURE 7.1-1

ALTERNATIVE 5: REFINED PRESIDIO PARKWAY



## 7.2 LOCATIONS FOR ADDITIONAL INTERSECTION ANALYSIS

The original report examined impacts to a number of facilities. Specifically, these intersections were evaluated:

- Lyon Street and Marina Boulevard
- US 101 / Richardson Avenue and Francisco Street
- Merchant Road (GGB Viewing Area) and Lincoln Boulevard (East)
- Merchant Road (GGB Viewing Area) and Lincoln Boulevard (West)
- Girard Road and Lincoln Boulevard
- Halleck Street and Mason Street
- US 101/ Richardson Avenue and Gorgas Street
- Marina Boulevard / Girard Road and Gorgas Street/US 101 SB ramp
- Marina Boulevard / Girard Road and US 101 NB ramp
- Broderick Street and Marina Boulevard
- Divisadero Street and Marina Boulevard
- US 101 / Richardson Avenue and Chestnut Street
- US 101 / Richardson Avenue and Lombard Street
- US 101 / Lombard Street and Broderick Street
- Lyon Street and Lombard Street (Lombard Gate)
- Presidio Boulevard and Pacific Avenue
- Park Presidio Boulevard and Lake Street
- US 101 NB ramps and GGB Viewing Area (Merchant Road)

This report examines potential impacts to additional intersections. These intersections are:

- Baker Street and Beach Street
- Baker Street and Francisco Street
- Baker Street and Lombard Street
- Baker Street and Greenwich Street
- Baker Street and Filbert Street
- Broderick Street and Beach Street
- Broderick Street and Francisco Street
- Broderick Street and Chestnut Street
- Broderick Street and Greenwich Street
- Broderick Street and Filbert Street
- Divisadero Street and Francisco Street
- Divisadero Street and Chestnut Street
- Divisadero Street and Lombard Street
- Divisadero Street and Greenwich Street
- Divisadero Street and Filbert Street
- Fillmore Street and Lombard Street
- Scott Street / Cervantes Street and Marina Boulevard
- Buchanan Street/ Marina Boulevard and Beach Street
- Laguna Street and Bay Street
- Van Ness Avenue and Bay Street
- Van Ness Avenue and Lombard Street

## **7.3 INTERSECTION LEVEL OF SERVICE**

In the Design Year, the No-Build Alternative and the Parkway Alternative options have a new signal on Richardson Avenue at Gorgas Avenue/Lyon Street. Timing plans for those new signals were developed in accordance with the existing signal timing progression used for downstream/upstream signals. Fixed signal timing plans for new signals on other roadways were optimized to provide the least amount of intersection delay.

### **7.3.1 Previously Studied Intersections**

The refined version of the Parkway Alternative also has two additional intersections, located where the southbound and northbound ramps link to the connected Marina Boulevard/Girard Road.

The AM Intersection LOS analysis results are shown in Table 7.3-1, with the PM Intersection LOS analysis results summarized in Table 7.3-2. Although LOS describes the overall measure of effectiveness for an intersection, individual approaches may operate at a better or worse LOS.

#### **Findings**

The AM peak hour analysis in Table 7.3-1 shows that intersections generally operate at the same level in all alternatives. The Refined Presidio Parkway alternative would result in small shifts in traffic so that the estimated average level of service at some intersections changed; these changes were generally less than five seconds average delay, and in some cases result in small shifts between Levels of Service A, B and C. The analysis shows that the intersections in the study area would continue to operate with acceptable level of service for all alternatives except the two unsignalized intersections along Marina (Marina at Divisadero and Marina at Broderick). Both of these intersections operate at LOS F during the existing conditions with significant delays; the Refined Presidio Parkway alternative would result in less delay than the No Build or the baseline, even though they continue to operate at Level of Service F.

The PM peak hour analysis in Table 7.3-2 shows that intersections generally operate at the same level in all alternatives. The Refined Presidio Parkway alternative would result in small shifts in traffic so that the estimated average level of service at some intersections changed; these changes were generally less than five seconds average delay, and in some cases result in small shifts between Levels of Service A, B and C. The analysis shows that the intersections in the study area would continue to operate with acceptable level of service for all alternatives except the two unsignalized intersections along Marina (Marina at Divisadero and Marina at Broderick). Both of these intersections operate at LOS F during the existing conditions with significant delays; the Refined Presidio Parkway alternative would result in less delay than the No Build or the baseline, even though they continue to operate at Level of Service F.

With the exception of the Parkway alternatives during the AM and Weekend Peak periods, these intersections would continue to experience significant delays. It should be noted that the delay in most alternatives is less than the delay during the existing conditions and very similar to forecast delay that would occur during the No Build Alternative project condition.

Detailed technical calculations are provided in Appendix S-1.

**TABLE 7.3-1  
AM PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS BY ALTERNATIVE**

Intersection				Alternative		
No.	North/South	East/West		Base Year	Design Year	
					1 No Build	5 Refined Presidio Parkway
1	Lyon	Marina	Control Delay <sup>1</sup> LOS	Signal 13 B	Signal 10 A	Signal 15 B
2	101 / Richardson	Francisco	Control Delay <sup>1</sup> LOS	Signal 34 C	Signal 35 C	Signal 28 C
3	Merchant (GGB Viewing Area)	Lincoln (east)	Control Delay <sup>1</sup> LOS	2-way <sup>2</sup> 13 B	All-way 18 C	All-way 20 C
4	Merchant	Lincoln (west)	Control Delay <sup>1</sup> LOS	2-way <sup>2</sup> 10 A	Signal 15 B	Signal 14 B
5	Girard	Lincoln	Control Delay <sup>1</sup> LOS	2-way <sup>2</sup> <1 A	2-way <sup>2</sup> 11 B	All-way 17 C
6	Halleck	Mason	Control Delay <sup>1</sup> LOS	All-way 6 A	All-way 7 A	All-way 6 A
7	US 101/ Richardson	Gorgas / Lyon	Control Delay <sup>1</sup> LOS	- - -	Signal 17 B	Signal 13 B
8	Marina / Girard	Gorgas / US 101 SB Ramps	Control Delay <sup>1</sup> LOS	- - -	- - -	Signal 18 B
9	Marina / Girard	US 101 NB Ramps	Control Delay <sup>1</sup> LOS	- - -	- - -	Signal 7 A
10	Broderick	Marina	Control Delay <sup>1</sup> LOS	All-way 59 F	All-way 99 F	All-way 55 F
11	Divisadero	Marina	Control Delay <sup>1</sup> LOS	All-way 79 F	All-way >100 F	All-way 58 F
12	101 / Richardson	Chestnut	Control Delay <sup>1</sup> LOS	Signal 12 B	Signal 14 B	Signal 21 C

Notes

1. Delay is measured in seconds per vehicle
2. For two-way stop controlled intersections, the delay and LOS for the worst movement is given



**TABLE 7.3-1  
AM PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS BY ALTERNATIVE (Continued)**

Intersection				Alternative		
No.	North/South	East/West		Base Year	Design Year	
					1 No Build	5 Refined Presidio Parkway
13 <sup>3</sup>	101 / Richardson	Lombard	Control Delay <sup>1</sup> LOS	Signal 10 B	Signal 9 A	Signal 3 A
14 <sup>3</sup>	101 / Lombard	Broderick	Control Delay <sup>1</sup> LOS	Signal 21 C	Signal 21 C	Signal 13 B
15	Lyon	Lombard Gate	Control Delay <sup>1</sup> LOS	All-way 29 D	Signal 26 C	Signal 19 B
16	Presidio	Pacific	Control Delay <sup>1</sup> LOS	All-way 16 C	Signal 15 B	Signal 13 B
17	Park Presidio	Lake	Control Delay <sup>1</sup> LOS	Signal 17 B	Signal 24 C	Signal 24 C
18 <sup>4</sup>	Merchant (GGB Viewing Area)	NB 101 Ramps	Control Delay <sup>1</sup> LOS	All-way 9 A	All-way 12 B	All-way 24 C
<p>Notes</p> <p>1. Delay is measured in seconds per vehicle</p> <p>3. Intersection #14, Lombard and Broderick, and #13, Lombard and Richardson are coordinated.</p> <p>4. The intersection of Merchant Road and GGB Viewing Area has a free northbound left turn and a free eastbound west turn. The delay has been calculated based on an all-way stop</p>						

Source: DKS Associates, 2006

**TABLE 7.3-2  
PM PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS BY ALTERNATIVE**

Intersection				Alternative		
No.	North/South	East/West		Base Year	Design Year	
					1 No Build	5 Refined Presidio Parkway
1	Lyon	Marina	Control Delay <sup>1</sup> LOS	Signal 18 B	Signal 9 A	Signal 15 B
2	Richardson	Francisco	Control Delay <sup>1</sup> LOS	Signal 10 A	Signal 14 B	Signal 16 B
3	Merchant (GGB Viewing Area)	Lincoln (east)	Control Delay <sup>1</sup> LOS	2-way <sup>2</sup> 12 B	All-way 15 C	All-way 13 B
4	Merchant	Lincoln (west)	Control Delay <sup>1</sup> LOS	2-way <sup>2</sup> 11 B	Signal 17 B	Signal 12 B
5	Girard	Lincoln	Control Delay <sup>1</sup> LOS	2-way <sup>2</sup> <1 A	2-way <sup>2</sup> 13 B	All-way 16 C
6	Halleck	Mason	Control Delay <sup>1</sup> LOS	All-way 6 A	All-way 7 A	All-way 7 A
7	Richardson / 101	Gorgas / Lyon	Control Delay <sup>1</sup> LOS	- - -	Signal 17 B	Signal 16 B
8	Marina / Girard	Gorgas / 101 SB Ramps	Control Delay <sup>1</sup> LOS	- - -	- - -	Signal 15 B
9	Marina / Girard	101 NB Ramps	Control Delay <sup>1</sup> LOS	- - -	- - -	Signal 8 A
10	Broderick	Marina	Control Delay <sup>1</sup> LOS	All-way >100 F	All-way >100 F	All-way 79 F
11	Divisadero	Marina	Control Delay <sup>1</sup> LOS	All-way >100 F	All-way >100 F	All-way 78 F
12	Richardson	Chestnut	Control Delay <sup>1</sup> LOS	Signal 15 B	Signal 17 B	Signal 13 B
Notes						
1. Delay is measured in seconds per vehicle						
2. For two-way stop controlled intersections, the delay and LOS for the worst movement is given						

**TABLE 7.3-2  
PM PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS BY ALTERNATIVE  
(Continued)**

Intersection				Alternative		
No.	North/South	East/West		Base Year	Design Year	
					1 No Build	5 Refined Presidio Parkway
13 <sup>3</sup>	Richardson	Lombard	Control Delay <sup>1</sup> LOS	Signal 5 A	Signal 7 A	Signal 3 A
14 <sup>3</sup>	101 / Lombard	Broderick	Control Delay <sup>1</sup> LOS	Signal 25 C	Signal 22 C	Signal 17 B
15	Lyon	Lombard Gate	Control Delay <sup>1</sup> LOS	All-way 18 C	Signal 20 C	Signal 16 B
16	Presidio	Pacific	Control Delay <sup>1</sup> LOS	All-way 19 C	Signal 16 B	Signal 14 B
17	Park Presidio	Lake	Control Delay <sup>1</sup> LOS	Signal 21 C	Signal 38 D	Signal 35 C
18 <sup>4</sup>	Merchant (GGB Viewing Area)	NB 101 Ramps	Control Delay <sup>1</sup> LOS	All-way 13 B	All-way 11 B	All-way 15 B
Notes 1. Delay is measured in seconds per vehicle 3. Intersection #14, Lombard and Broderick, and #13, Lombard and Richardson are coordinated. 4. The intersection of Merchant Road and GGB Viewing Area has a free northbound left turn and a free eastbound west turn. The delay has been calculated based on an all-way stop Source: DKS Associates, 2006						

**7.3.2 Additionally-Studied Intersections**

Additionally-studied intersections were selected to cover concerns that the base Traffic and Transportation Report did not study these. The additional intersections are listed in Section 7.2.

The analysis for these intersections is based upon travel estimates and forecasts obtained from the San Francisco Countywide Model, which was the same source of the data for the original intersections. It is noted that the travel model was not specifically validated for turning movement volumes. A review of these volumes compared with data made available from the San Francisco Metropolitan Transportation Authority (Department of Parking and Traffic) suggests that they are reasonable approximations of traffic counts.

Many of the additional intersections are all-way stops. The methodology for analyzing all-way stops calculates delay from all vehicles approaching the intersection, some approaches may experience a higher average delay at the approach with the greatest volume. In particular, some residents have noted that there may be additional traffic at certain times during the day as a result of undue delays on Richardson Avenue and Lombard Street. These occurrences were not identified in the base year model to be high enough to

deteriorate the calculated level of service to an unreasonable condition. The future year forecasts are a result of changing travel patterns in the area.

### **Findings**

The AM peak hour analysis of additional intersections is summarized in Table 7.3-3. The analysis shows that most of the additional intersections that were analyzed are projected to perform at Level of Service A or B in all base and future years. Intersections along Divisadero Street are projected to operate at Level of Service C and D in all scenarios. The intersection of Divisadero Street and Lombard Street is shown to have improvement of 9 seconds between the No Build and the Refined Presidio Parkway condition as a result of minor shifts in traffic flows through the Marina District. The intersection of Divisadero Street and Greenwich Street is projected to deteriorate slightly between the No Build and Refined Presidio Parkway conditions by nine seconds, resulting in Level of Service D, which is acceptable.

The PM peak hour analysis of additional intersections is summarized in Table 7.3-4. This analysis also shows that most of the additional intersections that were analyzed are projected to perform at Level of Service A, B or C in both the base and future years. While most show average delays varying by less than five seconds, there are a two locations where changes are noted between the No Build and Refined Presidio Parkway Condition – at Divisadero Street and Lombard Street, and at Van Ness Avenue and Bay Street. The Divisadero Street and Lombard Street is shown to have a deterioration of 10 seconds between the No Build and the Refined Presidio Parkway condition as a result of minor shifts in traffic flows through the Marina District. Bay Street and Van Ness Avenue is projected to improve by 18 seconds between the No Build and Refined Presidio Parkway conditions. The intersection of Bay Street and Laguna Street is projected to operate at Level of Service E in both future year scenarios. Two intersections -- Beach Street and Marina Boulevard, and Bay Street and Van Ness Avenue -- operate at Level of Service E in the base year condition, but are anticipated to improve to Level of Service D or better in all design year alternatives.

Technical details of the assumptions and results are provided in Appendix S-1.

**TABLE 7.3-3  
AM PEAK HOUR LEVEL OF SERVICE RESULTS BY ALTERNATIVE FOR ADDITIONAL  
INTERSECTIONS**

Intersection				Alternative		
No.	North/South	East/West		Base Year	Design Year	
					1 No Build	5 Refined Presidio Parkway
1	Baker	Beach	Control Delay <sup>1</sup> LOS	2-way <sup>2</sup> 7 A	2-way <sup>2</sup> <1 A	2-way <sup>2</sup> 1 A
2	Baker	Francisco	Control Delay LOS	All-way 8 A	All-way 11 B	All-way 7 A
3	Baker	Lombard	Control Delay <sup>1</sup> LOS	All-way 10 A	All-way 9 A	All-way 12 B
4	Baker	Greenwich	Control Delay <sup>1</sup> LOS	All-way 8 A	All-way 8 A	All-way 9 A
5	Baker	Filbert	Control Delay <sup>1</sup> LOS	All-way 8 A	All-way 8 A	All-way 9 A
6	Broderick	Beach	Control Delay <sup>1</sup> LOS	All-way 8 A	All-way 7 A	All-way 7 A
7	Broderick	Francisco	Control Delay <sup>1</sup> LOS	2-way <sup>2</sup> 10 B	2-way <sup>2</sup> 14 B	2-way <sup>2</sup> 9 A
8	Broderick	Chestnut	Control Delay <sup>1</sup> LOS	All-way 9 A	All-way 9 A	All-way 9 A
9	Broderick	Greenwich	Control Delay <sup>1</sup> LOS	All-way 9 A	All-way 9 A	All-way 11 B
10	Broderick	Filbert	Control Delay LOS	All-way 8 A	All-way 8 A	All-way 8 A
11	Divisadero	Francisco	Control Delay <sup>1</sup> LOS	All-way 8 A	All-way 8 A	All-way 7 A
12	Divisadero	Chestnut	Control Delay <sup>1</sup> LOS	All-way 13 B	All-way 15 B	All-way 9 A
<p>Notes</p> <p>1. Delay is measured in seconds per vehicle</p> <p>2. For two-way stop controlled intersections, the delay and LOS for the worst movement is given</p> <p>Source: DKS Associates, 2006</p>						

**TABLE 7.3-3  
AM PEAK HOUR LEVEL OF SERVICE RESULTS BY ALTERNATIVE FOR ADDITIONAL  
INTERSECTIONS (Continued)**

Intersection				Alternative		
No.	North/South	East/West		Base Year	Design Year	
					1 No Build	5 Refined Presidio Parkway
13	Divisadero	Lombard	Control Delay <sup>1</sup> LOS	Signal 42 D	Signal 36 D	Signal 27 C
14	Divisadero	Greenwich	Control Delay <sup>1</sup> LOS	All-way 12 B	All-way 17 C	All-way 26 D
15	Divisadero	Filbert	Control Delay <sup>1</sup> LOS	All-way 14 B	All-way 18 C	All-way 18 C
17	Fillmore	Lombard	Control Delay <sup>1</sup> LOS	Signal 14 B	Signal 14 B	Signal 14 B
18	Scott / Cervantes	Marina	Control Delay <sup>1</sup> LOS	Signal 19 B	Signal 15 B	Signal 13 B
19	Buchanan / Marina	Beach	Control Delay <sup>1</sup> LOS	Signal 9 A	Signal 8 A	Signal 8 A
20	Laguna	Bay	Control Delay <sup>1</sup> LOS	Signal 34 C	Signal 32 C	Signal 33 C
21	Van Ness	Bay	Control Delay <sup>1</sup> LOS	Signal 19 B	Signal 16 B	Signal 15 B
22	Van Ness	Lombard	Control Delay <sup>1</sup> LOS	Signal 19 B	Signal 17 B	Signal 17 B
Notes						
1. Delay is measured in seconds per vehicle						

Source: DKS Associates, 2006

**TABLE 7.3-4  
PM PEAK HOUR LEVEL OF SERVICE RESULTS BY ALTERNATIVE FOR ADDITIONAL  
INTERSECTIONS**

Intersection				Alternative		
No.	North/South	East/West		Base Year	Design Year	
					1 No Build	5 Refined Presidio Parkway
1	Baker	Beach	Control Delay LOS	2-way <sup>2</sup> 9 A	2-way <sup>2</sup> 9 A	2-way <sup>2</sup> <4 A
2	Baker	Francisco	Control Delay LOS	All-way 8 A	All-way 9 A	All-way 9 A
3	Baker	Lombard	Control Delay <sup>1</sup> LOS	All-way 9 A	All-way 8 A	All-way 10 B
4	Baker	Greenwich	Control Delay <sup>1</sup> LOS	All-way 7 A	All-way 7 A	All-way 8 A
5	Baker	Filbert	Control Delay <sup>1</sup> LOS	All-way 7 A	All-way 7 A	All-way 8 A
6	Broderick	Beach	Control Delay <sup>1</sup> LOS	All-way 7 A	All-way 8 A	All-way 7 A
7	Broderick	Francisco	Control Delay <sup>1</sup> LOS	2-way <sup>2</sup> 10 B	2-way <sup>2</sup> 11 B	2-way <sup>2</sup> 14 B
8	Broderick	Chestnut	Control Delay <sup>1</sup> LOS	All-way 10 B	All-way 11 B	All-way 9 A
9	Broderick	Greenwich	Control Delay <sup>1</sup> LOS	All-way 9 A	All-way 9 A	All-way 9 A
10	Broderick	Filbert	Control Delay LOS	All-way 8 A	All-way 9 A	All-way 9 A
11	Divisadero	Francisco	Control Delay <sup>1</sup> LOS	All-way 8 A	All-way 9 A	All-way 9 A
12	Divisadero	Chestnut	Control Delay <sup>1</sup> LOS	All-way 13 B	All-way 18 C	All-way 14 B

Notes

1. Delay is measured in seconds per vehicle
2. For two-way stop controlled intersections, the delay and LOS for the worst movement is given

Source: DKS Associates, 2006

**TABLE 7.3-4  
PM PEAK HOUR LEVEL OF SERVICE RESULTS BY ALTERNATIVE FOR ADDITIONAL  
INTERSECTIONS (Continued)**

Intersection				Alternative		
No.	North/South	East/West		Base Year	Design Year	
					1 No Build	5 Refined Presidio Parkway
13	Divisadero	Lombard	Control Delay <sup>1</sup> LOS	Signal 12 B	Signal 13 B	Signal 23 C
14	Divisadero	Greenwich	Control Delay <sup>1</sup> LOS	All-way 15 B	All-way 16 C	All-way 16 C
15	Divisadero	Filbert	Control Delay <sup>1</sup> LOS	All-way 15 C	All-way 17 C	All-way 16 C
17	Fillmore	Lombard	Control Delay <sup>1</sup> LOS	Signal 14 B	Signal 15 B	Signal 20 C
18	Scott / Cervantes	Marina	Control Delay <sup>1</sup> LOS	Signal 11 B	Signal 12 B	Signal 13 B
19	Buchanan / Marina	Beach	Control Delay <sup>1</sup> LOS	Signal 60 E	Signal 32 C	Signal 31 C
20	Laguna	Bay	Control Delay <sup>1</sup> LOS	Signal 41 D	Signal 58 E	Signal 58 E
21	Van Ness	Bay	Control Delay <sup>1</sup> LOS	Signal 80 E	Signal 35 D	Signal 17 B
22	Van Ness	Lombard	Control Delay <sup>1</sup> LOS	Signal 30 C	Signal 27 C	Signal 30 C
Notes						
1. Delay is measured in seconds per vehicle						

Source: DKS Associates, 2006



## 7.4 SEGMENT LEVEL OF SERVICE

As a result of the Refined Presidio Parkway Alternative, traffic volumes on several mainline segments are projected to shift slightly. Because of these shifts, a reevaluation of the projected segment levels of service has been performed.

A full explanation of the segment level of service methodology is found in Chapter 2 of the Traffic and Transit Operations Report. It is noted that the enumeration of the segments for the Urban Street Segment Level of Service tables are between 5 and 8, corresponding to the order of the segments in the Highway Level of Service tables.

### Findings

The results are shown in Tables 7.4-1 and 7.4-2 for the AM peak hour condition as applied to Highway and Urban Street segment level of service. The tables demonstrate the refined alternative in comparison with the No Build Alternative and the Baseline condition. These results demonstrate that most of the highway segments are now similar between the Refined Presidio Parkway Alternative and the No Build condition. As a result of the minor shifts in traffic volumes, the resulting shifts did not result in the occurrence of new roadway deficiencies of either highway or urban street segments except for the Golden Gate Bridge in the non-peak direction. This shift is a result of variations in the calculations from the San Francisco Countywide Model rather than as a result of the Refined Presidio Parkway alternative.

The PM peak hour condition analysis is summarized in Tables 7.4-3 and 7.4-4 for Highway and Urban Street segments respectively. Again, these results demonstrate that most of the highway segments are now similar between the Refined Presidio Parkway Alternative and the No Build condition. As a result of the minor shifts in traffic volumes, the resulting shifts did not result in the occurrence of new roadway deficiencies of either highway or urban street segments. Notable changes are observed with northbound Richardson Avenue traffic in the Urban Street Segment level of service for the PM condition. This is projected to operate satisfactorily in the base year, but operate at Level of Service E in both the No Build and Refined Presidio Parkway Alternatives by the design year. In addition, the northbound Golden Gate Bridge segment is projected to deteriorate from Level of Service E to Level of Service F, and the southbound Golden Gate Bridge segment is projected to deteriorate from Level of Service C to Level of Service E in both design year alternatives.

**TABLE 7.4-1  
HIGHWAY SEGMENT LEVEL OF SERVICE -- AM PEAK HOUR**

No.	Location	Dir	Criteria	Unit	Base Year	Design Year	
						1 No Build	5 Refined Presidio Parkway
1	US 101 From the Merchant Drive Ramps to Park Presidio Blvd	SB	Peak Hourly Volume	vehicles	6150	6441	6540
			Lanes	lanes	4	4	4
			Flow Rate	pc/h/lane	1537	1610	1635
			Free Flow Speed	miles/hour	50	50	50
			Congested Speed	miles/hour	50	49	49
			Density	v/lane/mile	31	33	33
			LOS		D	D	D
2 <sup>1</sup>	US 101 From Park Presidio Blvd to the Merchant Drive Ramps	NB	Peak Hourly Volume	vehicles	2994	5019	5092
			Lanes	number	3	4	4
			Flow Rate	pc/h/lane	998	1255	1273
			Free Flow Speed	miles/hour	50	50	50
			Congested Speed	miles/hour	n/a	n/a	n/a
			Density	v/lane/mile	20	25	26
			LOS		C	C <sup>1</sup>	C <sup>1</sup>
3	US 101 From Park Presidio to the Marina Blvd Access Ramps	SB	Peak Hourly Volume	vehicles	5203	4981	4886
			Lanes	number	4	4	4
			Flow Rate	pc/h/lane	1301	1245	1221
			Free Flow Speed	miles/hour	50	50	50
			Congested Speed	miles/hour	n/a	n/a	n/a
			Density	v/lane/mile	26	25	24
			LOS		D	C	C
4	US 101 From the Marina Blvd Access Ramps to Park Presidio	NB	Peak Hourly Volume	vehicles	2049	2947	2940
			Lanes	number	3	3	3
			Flow Rate	pc/h/lane	683	982	980
			Free Flow Speed	miles/hour	50	50	50
			Congested Speed	miles/hour	n/a	n/a	n/a
			Density	v/lane/mile	14	20	20
			LOS		B	C	C
5	Richardson From the Marina Blvd Access Ramps to north of Lyon St	SB	Peak Hourly Volume	vehicles	3717	3325	2899
			Lanes	lanes	2	2	3
			Flow Rate	pc/h/lane	1858	1663	966
			Free Flow Speed	miles/hour	50	50	45
			Congested Speed	miles/hour	48	49	n/a
			Density	v/lane/mile	39	34	22
			LOS		E	D	C
6	Richardson from north of Lyon St to the Marina Blvd Access Ramps	NB	Peak Hourly Volume	vehicles	1443	2141	2143
			Lanes	number	2	2	2
			Flow Rate	pc/h/lane	721	1071	1071
			Free Flow Speed	miles/hour	50	50	45
			Congested Speed	miles/hour	n/a	n/a	n/a
			Density	v/lane/mile	14	21	24
			LOS		B	C	C

Source: DKS Associates, 2006

**TABLE 7.4-1  
HIGHWAY SEGMENT LEVEL OF SERVICE -- AM PEAK HOUR (Continued)**

No.	Location	Dir	Criteria	Unit	Base Year	Design Year	
						1 No Build	5 Refined Presidio Parkway
7	Marina Blvd From the Doyle Drive Merge to Lyon St	EB	Peak Hourly Volume	vehicles	1486	1656	n/a <sup>1</sup>
			Lanes	number	2	2	n/a <sup>1</sup>
			Flow Rate	pc/h/lane	743	828	n/a <sup>1</sup>
			Free Flow Speed	miles/hour	35	35	n/a <sup>1</sup>
			Congested Speed	miles/hour	n/a	n/a	n/a <sup>1</sup>
			Density	v/lane/mile	21	24	n/a <sup>1</sup>
			LOS		C	C	n/a <sup>1</sup>
8	Marina Blvd From Lyon St to the Doyle Drive merge	WB	Peak Hourly Volume	vehicles	606	806	n/a <sup>1</sup>
			Lanes	number	2	2	n/a <sup>1</sup>
			Flow Rate	pc/h/lane	303	403	n/a <sup>1</sup>
			Free Flow Speed	miles/hour	35	35	n/a <sup>1</sup>
			Congested Speed	miles/hour	n/a	n/a	n/a <sup>1</sup>
			Density	v/lane/mile	9	12	n/a <sup>1</sup>
			LOS		A	B	n/a <sup>1</sup>
9	Park Presidio From the US 101 Ramps to the Park Presidio Tunnel	SB	Peak Hourly Volume	vehicles	2380	2480	2594
			Lanes	number	2	2	2
			Flow Rate	pc/h/lane	1190	1240	1297
			Free Flow Speed	miles/hour	50	50	50
			Congested Speed	miles/hour	n/a	n/a	n/a
			Density	v/lane/mile	24	25	26
			LOS		C	C	C
10	Park Presidio From the Park Presidio Tunnel to the US 101 Ramps	NB	Peak Hourly Volume	vehicles	2379	3092	3092
			Lanes	number	2	2	2
			Flow Rate	pc/h/lane	1190	1546	1546
			Free Flow Speed	miles/hour	50	50	50
			Congested Speed	miles/hour	n/a	50	50
			Density	v/lane/mile	24	31	32
			LOS		C	D	D
11	US 101 between Park Presidio on and off-ramps	SB	Peak Hourly Volume	vehicles	4217	4345	4261
			Lanes	number	3	3	3
			Flow Rate	pc/h/lane	1406	1448	1420
			Free Flow Speed	miles/hour	50	50	50
			Congested Speed	miles/hour	50	50	50
			Density	v/lane/mile	28	29	28
			LOS		D	D	D
12	US 101 between Park Presidio off and on-ramps	NB	Hour Volume	vehicles	1601	2564	2940
			Lanes	number	3	3	3
			Flow Rate	pc/h/lane	534	855	980
			Free Flow Speed	miles/hour	50	50	50
			Congested Speed	miles/hour	n/a	n/a	n/a
			Density	v/lane/mile	11	17	20
			LOS		A	B	C
Notes							
1. This segment is coded as an Urban Street Segment under the two Parkway alternatives							

Source: DKS Associates, 2006

**TABLE 7.4-1  
HIGHWAY SEGMENT LEVEL OF SERVICE -- AM PEAK HOUR (Continued)**

No.	Location	Dir	Criteria	Unit	Base Year	Design Year	
						1 No Build	5 Refined Presidio Parkway
13	US 101 between Marin County and Merchant Road (Golden Gate Bridge)	SB	Peak Hourly Volume	vehicles	5780	6098	6081
			Lanes	number	4	3	3
			Flow Rate	pc/h/lane	1445	2033	2027
			<i>Free Flow Speed</i>	<i>miles/hour</i>	50	50	50
			<i>Congested Speed</i>	<i>miles/hour</i>	50	46	46
			<i>Density</i>	<i>v/lane/mile</i>	29	44	44
			LOS		D	F <sup>2</sup>	F <sup>2</sup>
14	US 101 between Merchant Road and Marin County (Golden Gate Bridge)	NB	Peak Hourly Volume	vehicles	2862	4990	4985
			Lanes	number	2	3	3
			Flow Rate	pc/h/lane	1431	1663	1662
			<i>Free Flow Speed</i>	<i>miles/hour</i>	50	50	50
			<i>Congested Speed</i>	<i>miles/hour</i>	50	49	49
			<i>Density</i>	<i>v/lane/mile</i>	29	34	34
			LOS		D	D <sup>3</sup>	D <sup>3</sup>
<p>Notes</p> <ol style="list-style-type: none"> <li>If Golden Gate Bridge southbound configuration remains at the current four lanes, this segment would operate at LOS D for all future design year scenarios. However, the analysis also shows that queuing would be significant on Doyle Drive if this configuration is used, and that queuing on the bridge would be minimal in this configuration</li> <li>If Golden Gate Bridge northbound configuration remains at the current two lanes, this segment would operate at LOS F for all future design year scenarios</li> </ol>							

Source: DKS Associates, 2006

**TABLE 7.4-2  
URBAN STREET SEGMENT LEVEL OF SERVICE -- AM PEAK HOUR**

No.	Location	Dir	Criteria	Unit	Base Year	Design Year	
						1 No Build	5 Refined Presidio Parkway
5	Richardson Street from Francisco to north of Lyon Street	SB	Urban Street Classification		III	III	III
			Peak Hourly Volume	vehicles	3717	3094	2986
			Speed	FFS <i>calculated</i>	35 19	35 23	35 24
			LOS		C	C	C
6	Richardson Street from north of Lyon Street to Francisco Street.	NB	Urban Street Classification		III	III	III
			Peak Hourly Volume	vehicles	1443	2259	2158
			Speed	FFS <i>calculated</i>	35 26	35 22	35 21
			LOS		B	C	C
7	Marina Blvd From the Doyle Drive Merge to Lyon St	EB	Urban Street Classification		III	III	IV
			Peak Hourly Volume	vehicles	1486	1656	1300
			Speed	FFS <i>calculated</i>	35 26	35 26	30 26
			LOS		B	B	B
8	Marina Blvd From Lyon St to the Doyle Drive merge	WB	Urban Street Classification		III	III	IV
			Peak Hourly Volume	vehicles	606	806	718
			Speed	FFS <i>calculated</i>	35 27	35 27	30 26
			LOS		B	B	B

Source: DKS Associates, 2006

**TABLE 7.4-3  
HIGHWAY SEGMENT LEVEL OF SERVICE -- PM PEAK HOUR**

No.	Location	Dir	Criteria	Unit	Base Year	Design Year	
						1 No Build	5 Refined Presidio Parkway
1	US 101 From the Merchant Drive Ramps to Park Presidio Blvd	SB	Peak Hourly Volume	vehicles	3120	5074	5602
			Lanes	lanes	3	4	4
			Flow Rate	pc/h/lane	1040	1268	1400
			Free Flow Speed	miles/hour	50	50	50
			Congested Speed	miles/hour	n/a	n/a	50
			Density	v/lane/mile	21	25	28
			LOS		C	C	D
2	US 101 From Park Presidio Blvd to the Merchant Drive Ramps	NB	Peak Hourly Volume	vehicles	5649	6219	6403
			Lanes	number	4	4	4
			Flow Rate	pc/h/lane	1412	1555	1601
			Free Flow Speed	miles/hour	50	50	50
			Congested Speed	miles/hour	50	49	49
			Density	v/lane/mile	28	32	33
			LOS		D	D	D
3	US 101 From Park Presidio to the Marina Blvd Access Ramps	SB	Peak Hourly Volume	vehicles	2608	3590	3715
			Lanes	number	2	4	4
			Flow Rate	pc/h/lane	1304	897	929
			Free Flow Speed	miles/hour	50	50	50
			Congested Speed	miles/hour	n/a	n/a	n/a
			Density	v/lane/mile	26	18	19
			LOS		D	B	C
4	US 101 From the Marina Blvd Access Ramps to Park Presidio	NB	Peak Hourly Volume	vehicles	4619	4806	4746
			Lanes	number	3	3	3
			Flow Rate	pc/h/lane	1540	1602	1582
			Free Flow Speed	miles/hour	50	50	50
			Congested Speed	miles/hour	50	49	49
			Density	v/lane/mile	31	33	32
			LOS		D	D	D
5	Richardson From the Marina Blvd Access Ramps to north of Lyon St	SB	Peak Hourly Volume	vehicles	1734	2543	2157
			Lanes	lanes	2	2	3
			Flow Rate	pc/h/lane	867	1271	719
			Free Flow Speed	miles/hour	50	50	45
			Congested Speed	miles/hour	n/a	n/a	n/a
			Density	v/lane/mile	17	25	16
			LOS		B	C	B
6	Richardson from north of Lyon St to the Marina Blvd Access Ramps	NB	Peak Hourly Volume	vehicles	2802	2931	3074
			Lanes	number	2	2	2
			Flow Rate	pc/h/lane	1401	1466	1537
			Free Flow Speed	miles/hour	50	50	45
			Congested Speed	miles/hour	50	50	45
			Density	v/lane/mile	28	29	35
			LOS		D	D	D

Source: DKS Associates, 2006

**TABLE 7.4-3  
HIGHWAY SEGMENT LEVEL OF SERVICE – PM PEAK HOUR (Continued)**

No.	Location	Dir	Criteria	Unit	Base Year	Design Year	
						1 No Build	5 Refined Presidio Parkway
7	Marina Boulevard From the Doyle Drive Merge to Lyon St	EB	Peak Hourly Volume	vehicles	873	1047	n/a <sup>1</sup>
			Lanes	number	2	2	n/a <sup>1</sup>
			Flow Rate	pc/h/lane	437	523	n/a <sup>1</sup>
			<i>Free Flow Speed</i>	<i>miles/hour</i>	35	35	n/a <sup>1</sup>
			<i>Congested Speed</i>	<i>miles/hour</i>	n/a	n/a	n/a <sup>1</sup>
			<i>Density</i>	<i>v/lane/mile</i>	13	15	n/a <sup>1</sup>
			LOS		B	B	n/a <sup>1</sup>
8	Marina Blvd From Lyon St to the Doyle Drive merge	WB	Peak Hourly Volume	vehicles	1817	1875	n/a <sup>1</sup>
			Lanes	number	2	2	n/a <sup>1</sup>
			Flow Rate	pc/h/lane	909	937	n/a <sup>1</sup>
			<i>Free Flow Speed</i>	<i>miles/hour</i>	35	35	n/a <sup>1</sup>
			<i>Congested Speed</i>	<i>miles/hour</i>	n/a	n/a	n/a <sup>1</sup>
			<i>Density</i>	<i>v/lane/mile</i>	26	27	n/a <sup>1</sup>
			LOS		C	D	n/a <sup>1</sup>
9	Park Presidio From the US 101 Ramps to the Park Presidio Tunnel	SB	Peak Hourly Volume	vehicles	2251	2935	3058
			Lanes	number	2	2	2
			Flow Rate	pc/h/lane	1125	1468	1529
			<i>Free Flow Speed</i>	<i>miles/hour</i>	50	50	50
			<i>Congested Speed</i>	<i>miles/hour</i>	n/a	50	50
			<i>Density</i>	<i>v/lane/mile</i>	23	30	31
			LOS		C	D	D
10	Park Presidio From the Park Presidio Tunnel to the US 101 Ramps	NB	Peak Hourly Volume	vehicles	2768	2864	2828
			Lanes	number	2	2	2
			Flow Rate	pc/h/lane	1384	1432	1414
			<i>Free Flow Speed</i>	<i>miles/hour</i>	50	50	50
			<i>Congested Speed</i>	<i>miles/hour</i>	n/a	50	50
			<i>Density</i>	<i>v/lane/mile</i>	28	29	28
			LOS		D	D	D
11	US 101 between Park Presidio on and off-ramps	SB	Peak Hourly Volume	vehicles	1884	2929	3123
			Lanes	number	3	3	3
			Flow Rate	pc/h/lane	628	976	1041
			<i>Free Flow Speed</i>	<i>miles/hour</i>	50	50	50
			<i>Congested Speed</i>	<i>miles/hour</i>	n/a	n/a	n/a
			<i>Density</i>	<i>v/lane/mile</i>	13	20	21
			LOS		B	C	C
12	US 101 between Park Presidio off and on-ramps	NB	Peak Hourly Volume	vehicles	3605	4016	4746
			Lanes	number	3	3	3
			Flow Rate	pc/h/lane	1202	1339	1582
			<i>Free Flow Speed</i>	<i>miles/hour</i>	50	50	50
			<i>Congested Speed</i>	<i>miles/hour</i>	n/a	n/a	50
			<i>Density</i>	<i>v/lane/mile</i>	24	27	32
			LOS		C	D	D
Notes:							
1. This segment is coded as an Urban Street Segment under the two Parkway alternatives							

Source: DKS Associates, 2006

**TABLE 7.4-3  
HIGHWAY SEGMENT LEVEL OF –SERVICE -- PM PEAK HOUR (Continued)**

No.	Location	Dir	Criteria	Unit	Base Year	Design Year	
						1 No Build	5 Refined Presidio Parkway
13	US 101 between Marin County and Merchant Road (Golden Gate Bridge)	SB	Peak Hourly Volume	vehicles	2987	5275	5736
			Lanes	number	3	3	3
			Flow Rate	pc/h/lane	996	1758	1912
			<i>Free Flow Speed</i>	<i>miles/hour</i>	<i>50</i>	<i>50</i>	<i>50</i>
			<i>Congested Speed</i>	<i>miles/hour</i>	<i>N/A</i>	<i>48</i>	<i>47</i>
			<i>Density</i>	<i>v/lane/mile</i>	<i>20</i>	<i>37</i>	<i>41</i>
			LOS		C	E <sup>2</sup>	E <sup>2</sup>
14	US 101 between Merchant Road and Marin County (Golden Gate Bridge)	NB	Peak Hourly Volume	vehicles	5890	6450	6497
			Lanes	number	3	3	3
			Flow Rate	pc/h/lane	1963	2150	2166
			<i>Free Flow Speed</i>	<i>miles/hour</i>	<i>50</i>	<i>50</i>	<i>50</i>
			<i>Congested Speed</i>	<i>miles/hour</i>	<i>47</i>	<i>45</i>	<i>45</i>
			<i>Density</i>	<i>v/lane/mile</i>	<i>42</i>	<i>47</i>	<i>48</i>
			LOS		E	F <sup>2</sup>	F <sup>2</sup>
Notes:							
2. Golden Gate Bridge segments are projected to operate at a deficient level of service in all scenarios in the design year in both directions.							

Source: DKS Associates, 2006



**TABLE 7.4-4  
URBAN STREET SEGMENT LEVEL OF SERVICE -- PM PEAK HOUR**

No.	Location	Dir	Criteria	Unit	Base Year	Design Year	
						1 No Build	5 Refined Presidio Parkway
5	Richardson Street from Francisco to north of Lyon Street	SB	Urban Street Classification		III	III	III
			Peak Hourly Volume	vehicles	1734	2439	2403
			Speed	FFS <i>calculated</i>	35 26	35 26	35 26
			LOS		B	B	B
6	Richardson Street from north of Lyon Street to Francisco Street.	NB	Urban Street Classification		III	III	III
			Peak Hourly Volume	vehicles	2776	2772	3081
			Speed	FFS <i>calculated</i>	35 14	35 13	35 13
			LOS		D	E	E
7	Marina Blvd From the Doyle Drive Merge to Lyon St	EB	Urban Street Classification		III	III	IV
			Peak Hourly Volume	vehicles	873	1047	1022
			Speed	FFS <i>calculated</i>	35 27	35 27	30 26
			LOS		B	B	B
8	Marina Blvd From Lyon St to the Doyle Drive merge	WB	Urban Street Classification		III	III	IV
			Peak Hourly Volume	vehicles	1817	1875	1367
			Speed	FFS <i>calculated</i>	35 25	35 25	30 27
			LOS		B	B	A

Source: DKS Associates, 2006

**APPENDIX S-1**  
**DETAILED INTERSECTION LEVEL OF SERVICE**  
**CALCULATIONS**

**2030 ALTERNATIVE 5**  
**(Refined Presidio Parkway Alternative) AM**  
**Original Intersections**

Refined Presidio Parkway Alternative  
1: Marina & Lyon

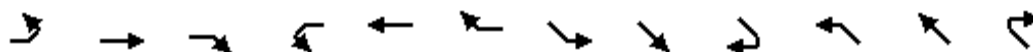
Timing Plan: AM  
HCM Signalized Intersection Capacity Analysis

	→	↘	↙	←	↖	↗	↑	↘	↙	↓	↖	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑		↖		↖	↖		↖
Volume (vph)	0	1286	14	3	709	0	4	0	1	7	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0		4.0
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	1.00		1.00
Frt		1.00		1.00	1.00		1.00		0.85	1.00		0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)		3573		1789	3579		1789		1601	1789		1601
Flt Permitted		1.00		0.11	1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)		3573		203	3579		1789		1601	1789		1601
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1286	14	3	709	0	4	0	1	7	0	5
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	1	0	0	3
Lane Group Flow (vph)	0	1299	0	3	709	0	4	0	0	7	0	2
Turn Type				Perm			custom		custom	custom		custom
Protected Phases		8			8					2		
Permitted Phases		8		8			2		2	2		2
Actuated Green, G (s)		38.0		38.0	38.0		29.0		29.0	29.0		29.0
Effective Green, g (s)		38.0		38.0	38.0		29.0		29.0	29.0		29.0
Actuated g/C Ratio		0.51		0.51	0.51		0.39		0.39	0.39		0.39
Clearance Time (s)		4.0		4.0	4.0		4.0		4.0	4.0		4.0
Lane Grp Cap (vph)		1810		103	1813		692		619	692		619
v/s Ratio Prot		c0.36			0.20					c0.00		
v/s Ratio Perm				0.01			0.00		0.00			0.00
v/c Ratio		0.72		0.03	0.39		0.01		0.00	0.01		0.00
Uniform Delay, d1		14.3		9.3	11.4		14.1		14.1	14.2		14.1
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00		1.00
Incremental Delay, d2		2.5		0.5	0.6		0.0		0.0	0.0		0.0
Delay (s)		16.8		9.8	12.0		14.2		14.1	14.2		14.1
Level of Service		B		A	B		B		B	B		B
Approach Delay (s)		16.8			12.0			14.1				14.2
Approach LOS		B			B			B				B
<b>Intersection Summary</b>												
HCM Average Control Delay			15.1			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			75.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			52.7%			ICU Level of Service				A		
Analysis Period (min)			15									

c Critical Lane Group

Refined Presidio Parkway Alternative  
2: Francisco & 101/Richardson

Timing Plan: AM  
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕↕			↕↕			↑↑↑	↑		↑↑↑	
Volume (vph)	168	0	0	0	0	72	0	2986	0	0	1917	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.95			1.00			0.91			0.91	
Frt		1.00			0.86			1.00			1.00	
Flt Protected		0.95			1.00			1.00			1.00	
Satd. Flow (prot)		3400			1629			5142			5142	
Flt Permitted		0.71			1.00			1.00			1.00	
Satd. Flow (perm)		2541			1629			5142			5142	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	168	0	0	0	0	72	0	2986	0	0	1917	0
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	168	0	0	65	0	0	2986	0	0	1917	0
Turn Type	Perm			Perm					Free			
Protected Phases		4			8			6			2	
Permitted Phases	4			8					Free			
Actuated Green, G (s)		31.0			31.0			51.0			51.0	
Effective Green, g (s)		31.0			31.0			51.0			51.0	
Actuated g/C Ratio		0.34			0.34			0.57			0.57	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Lane Grp Cap (vph)		875			561			2914			2914	
v/s Ratio Prot					0.04			c0.58			0.37	
v/s Ratio Perm		c0.07										
v/c Ratio		0.19			0.12			1.02			0.66	
Uniform Delay, d1		20.7			20.1			19.5			13.5	
Progression Factor		1.00			1.00			1.00			0.38	
Incremental Delay, d2		0.5			0.4			23.3			1.0	
Delay (s)		21.2			20.6			42.8			6.1	
Level of Service		C			C			D			A	
Approach Delay (s)		21.2			20.6			42.8			6.1	
Approach LOS		C			C			D			A	

Intersection Summary

HCM Average Control Delay	28.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
4: Merchant & Lincoln

Timing Plan: AM  
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	2	249	81	531	128	35
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		1.00	1.00	1.00	
Frt	0.87		1.00	1.00	0.97	
Flt Protected	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1631		1789	1883	1829	
Flt Permitted	1.00		0.65	1.00	1.00	
Satd. Flow (perm)	1631		1231	1883	1829	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	249	81	531	128	35
RTOR Reduction (vph)	144	0	0	0	18	0
Lane Group Flow (vph)	107	0	81	531	145	0
Turn Type			Perm			
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	23.5		24.0	24.0	24.0	
Effective Green, g (s)	23.5		24.0	24.0	24.0	
Actuated g/C Ratio	0.42		0.43	0.43	0.43	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	691		532	814	791	
v/s Ratio Prot	c0.07			c0.28	0.08	
v/s Ratio Perm			0.07			
v/c Ratio	0.16		0.15	0.65	0.18	
Uniform Delay, d1	9.9		9.6	12.5	9.7	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.5		0.6	4.0	0.5	
Delay (s)	10.4		10.2	16.5	10.2	
Level of Service	B		B	B	B	
Approach Delay (s)	10.4			15.7	10.2	
Approach LOS	B			B	B	

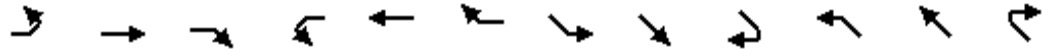
Intersection Summary

HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
8: Gorgas/Lyon & 101/Richardson

Timing Plan: AM  
HCM Signalized Intersection Capacity Analysis

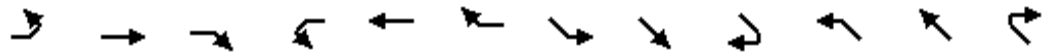


Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑	↗					↑↑↑			↑↑↑	
Volume (vph)	0	0	87	0	0	0	0	2899	0	0	2143	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0					4.0			4.0	
Lane Util. Factor			1.00					0.91			0.91	
Frt			0.85					1.00			1.00	
Flt Protected			1.00					1.00			1.00	
Satd. Flow (prot)			1601					5142			5136	
Flt Permitted			1.00					1.00			1.00	
Satd. Flow (perm)			1601					5142			5136	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	87	0	0	0	0	2899	0	0	2143	15
RTOR Reduction (vph)	0	0	1	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	86	0	0	0	0	2899	0	0	2157	0
Turn Type			Perm									
Protected Phases		4						6			2	
Permitted Phases			4									
Actuated Green, G (s)			23.0					59.0			59.0	
Effective Green, g (s)			23.0					59.0			59.0	
Actuated g/C Ratio			0.26					0.66			0.66	
Clearance Time (s)			4.0					4.0			4.0	
Lane Grp Cap (vph)			409					3371			3367	
v/s Ratio Prot								c0.56			0.42	
v/s Ratio Perm			c0.05									
v/c Ratio			0.21					0.86			0.64	
Uniform Delay, d1			26.3					12.2			9.2	
Progression Factor			1.00					1.00			1.00	
Incremental Delay, d2			1.2					3.1			0.9	
Delay (s)			27.5					15.4			10.2	
Level of Service			C					B			B	
Approach Delay (s)		27.5			0.0			15.4			10.2	
Approach LOS		C			A			B			B	
<b>Intersection Summary</b>												
HCM Average Control Delay			13.4					HCM Level of Service			B	
HCM Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			90.0					Sum of lost time (s)			8.0	
Intersection Capacity Utilization			68.1%					ICU Level of Service			C	
Analysis Period (min)			15									

c Critical Lane Group

Refined Presidio Parkway Alternative  
 9: Marina/Girard & Gorgas/101 SB Ramp

Timing Plan: AM  
 HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↻			↻		↻↻	↻			↻	
Volume (vph)	0	215	53	141	8	0	1278	211	498	3	0	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor		1.00			1.00		0.97	1.00			1.00	
Frt		0.97			1.00		1.00	0.89			0.88	
Flt Protected		1.00			0.95		0.95	1.00			1.00	
Satd. Flow (prot)		1833			1798		3471	1685			1643	
Flt Permitted		1.00			0.38		0.73	1.00			0.97	
Satd. Flow (perm)		1833			716		2676	1685			1603	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	215	53	141	8	0	1278	211	498	3	0	35
RTOR Reduction (vph)	0	10	0	0	0	0	0	95	0	0	12	0
Lane Group Flow (vph)	0	258	0	0	149	0	1278	615	0	0	26	0
Turn Type				Perm			Perm				Perm	
Protected Phases		4			8			6				2
Permitted Phases		4		8			6			2		
Actuated Green, G (s)		23.5			23.5		58.5	58.5			58.5	
Effective Green, g (s)		23.5			23.5		58.5	58.5			58.5	
Actuated g/C Ratio		0.26			0.26		0.65	0.65			0.65	
Clearance Time (s)		4.0			4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)		479			187		1739	1095			1042	
v/s Ratio Prot		0.14						0.36				
v/s Ratio Perm					c0.21		c0.48				0.02	
v/c Ratio		0.54			0.80		0.73	0.56			0.02	
Uniform Delay, d1		28.6			31.0		10.6	8.7			5.6	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		4.3			28.7		2.8	2.1			0.0	
Delay (s)		32.9			59.7		13.4	10.8			5.6	
Level of Service		C			E		B	B			A	
Approach Delay (s)		32.9			59.7			12.4			5.6	
Approach LOS		C			E			B			A	

Intersection Summary

HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Refined Presidio Parkway Alternative  
 11: Marina/Girard & 101 NB Ramp

Timing Plan: AM  
 HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER
Lane Configurations	↘	↗↗			↖	↖	↘		↖	↘	
Volume (vph)	228	1300	0	0	46	672	103	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0				
Lane Util. Factor	1.00	0.95			1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00				
Flt Protected	0.95	1.00			1.00	1.00	0.95				
Satd. Flow (prot)	1789	3579			1883	1601	1789				
Flt Permitted	0.73	1.00			1.00	1.00	0.95				
Satd. Flow (perm)	1369	3579			1883	1601	1789				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	228	1300	0	0	46	672	103	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	228	1300	0	0	46	672	103	0	0	0	0
Turn Type	Perm					Free	custom		custom		
Protected Phases		4			8					6	
Permitted Phases	4					Free	2		2		
Actuated Green, G (s)	59.0	59.0			59.0	90.0	23.0				
Effective Green, g (s)	59.0	59.0			59.0	90.0	23.0				
Actuated g/C Ratio	0.66	0.66			0.66	1.00	0.26				
Clearance Time (s)	4.0	4.0			4.0		4.0				
Lane Grp Cap (vph)	897	2346			1234	1601	457				
v/s Ratio Prot		c0.36			0.02						
v/s Ratio Perm	0.17					c0.42	0.06				
v/c Ratio	0.25	0.55			0.04	0.42	0.23				
Uniform Delay, d1	6.4	8.4			5.5	0.0	26.5				
Progression Factor	1.00	1.00			1.00	1.00	1.00				
Incremental Delay, d2	0.7	0.9			0.1	0.8	1.1				
Delay (s)	7.1	9.3			5.5	0.8	27.6				
Level of Service	A	A			A	A	C				
Approach Delay (s)		9.0			1.1			27.6		0.0	
Approach LOS		A			A			C		A	

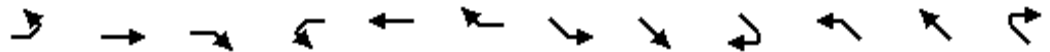
Intersection Summary

HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
14: Chestnut & 101/Richardson

Timing Plan: AM  
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↑↑↑			↑↑↑	
Volume (vph)	0	194	0	0	16	154	0	2557	429	0	1764	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.91			0.91	
Frt		1.00			0.88			0.98			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		1883			1653			5031			5134	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		1883			1653			5031			5134	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	194	0	0	16	154	0	2557	429	0	1764	19
RTOR Reduction (vph)	0	0	0	0	10	0	0	26	0	0	1	0
Lane Group Flow (vph)	0	194	0	0	160	0	0	2960	0	0	1782	0
Turn Type	Perm			Perm								
Protected Phases		4			8			6			2	
Permitted Phases	4			8				6				
Actuated Green, G (s)		31.0			31.0			51.0			51.0	
Effective Green, g (s)		31.0			31.0			51.0			51.0	
Actuated g/C Ratio		0.34			0.34			0.57			0.57	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Lane Grp Cap (vph)		649			569			2851			2909	
v/s Ratio Prot		c0.10			0.10			c0.59			0.35	
v/s Ratio Perm												
v/c Ratio		0.30			0.28			1.04			0.61	
Uniform Delay, d1		21.6			21.4			19.5			12.9	
Progression Factor		1.00			1.00			0.36			1.00	
Incremental Delay, d2		1.2			1.2			18.6			0.9	
Delay (s)		22.7			22.6			25.7			13.8	
Level of Service		C			C			C			B	
Approach Delay (s)		22.7			22.6			25.7			13.8	
Approach LOS		C			C			C			B	

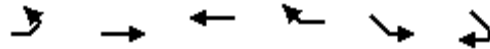
Intersection Summary

HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
15: Lombard & 101/Richardson

Timing Plan: AM  
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑	↑	↑↑↑↑	↑↑↑↑	
Volume (vph)	0	117	185	1743	2529	0
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	1.00	0.76	0.94	
Frt		1.00	1.00	0.85	1.00	
Flt Protected		1.00	1.00	1.00	0.95	
Satd. Flow (prot)		1883	1883	3650	5046	
Flt Permitted		1.00	1.00	1.00	0.95	
Satd. Flow (perm)		1883	1883	3650	5046	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	117	185	1743	2529	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	117	185	1743	2529	0
Turn Type	custom					
Protected Phases			8			2
Permitted Phases	4		8		2	
Actuated Green, G (s)	25.0		25.0	90.0	57.0	
Effective Green, g (s)	25.0		25.0	90.0	57.0	
Actuated g/C Ratio	0.28		0.28	1.00	0.63	
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	523		523	3650	3196	
v/s Ratio Prot			0.10			c0.50
v/s Ratio Perm	0.06		c0.48			
v/c Ratio	0.22		0.35	0.48	0.79	
Uniform Delay, d1	25.0		26.0	0.0	12.1	
Progression Factor	0.68		1.00	1.00	0.20	
Incremental Delay, d2	1.0		1.9	0.4	0.2	
Delay (s)	18.1		27.9	0.4	2.6	
Level of Service	B		C	A	A	
Approach Delay (s)	18.1		3.1			2.6
Approach LOS	B		A			A

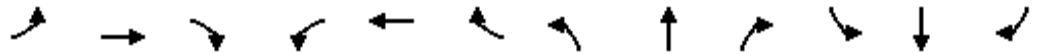
**Intersection Summary**

HCM Average Control Delay	3.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
16: 101/Lombard & Broderick

Timing Plan: AM  
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑			↕			↕	
Volume (vph)	0	2306	407	0	1750	6	217	2	0	13	1	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.91			0.91			1.00			1.00	
Frt		0.98			1.00			1.00			0.93	
Flt Protected		1.00			1.00			0.95			0.98	
Satd. Flow (prot)		5026			5139			1795			1708	
Flt Permitted		1.00			1.00			0.71			0.88	
Satd. Flow (perm)		5026			5139			1328			1532	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2306	407	0	1750	6	217	2	0	13	1	17
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	2686	0	0	1756	0	0	219	0	0	18	0
Turn Type							Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		59.0			59.0			23.5			23.5	
Effective Green, g (s)		59.0			59.0			23.5			23.5	
Actuated g/C Ratio		0.65			0.65			0.26			0.26	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Lane Grp Cap (vph)		3277			3350			345			398	
v/s Ratio Prot		c0.53			0.34							
v/s Ratio Perm								c0.16			0.01	
v/c Ratio		0.82			0.52			0.63			0.05	
Uniform Delay, d1		11.8			8.3			29.7			25.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.4			0.6			8.6			0.2	
Delay (s)		14.2			8.9			38.3			25.3	
Level of Service		B			A			D			C	
Approach Delay (s)		14.2			8.9			38.3			25.3	
Approach LOS		B			A			D			C	

Intersection Summary

HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
17: Lombard Gate & Lyon

Timing Plan: AM  
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	354	77	0	0	231	2	0	0	0	0	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0						4.0	
Lane Util. Factor	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			1.00						0.86	
Flt Protected	0.95	1.00			1.00						1.00	
Satd. Flow (prot)	1789	1883			1881						1629	
Flt Permitted	0.57	1.00			1.00						1.00	
Satd. Flow (perm)	1081	1883			1881						1629	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	354	77	0	0	231	2	0	0	0	0	0	16
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	9	0
Lane Group Flow (vph)	354	77	0	0	232	0	0	0	0	0	7	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	44.0	44.0			44.0						38.0	
Effective Green, g (s)	44.0	44.0			44.0						38.0	
Actuated g/C Ratio	0.49	0.49			0.49						0.42	
Clearance Time (s)	4.0	4.0			4.0						4.0	
Lane Grp Cap (vph)	528	921			920						688	
v/s Ratio Prot		0.04			0.12						c0.00	
v/s Ratio Perm	c0.33											
v/c Ratio	0.67	0.08			0.25						0.01	
Uniform Delay, d1	17.5	12.3			13.4						15.1	
Progression Factor	1.00	1.00			1.00						1.00	
Incremental Delay, d2	6.6	0.2			0.6						0.0	
Delay (s)	24.1	12.4			14.0						15.1	
Level of Service	C	B			B						B	
Approach Delay (s)		22.0			14.0			0.0			15.1	
Approach LOS		C			B			A			B	

Intersection Summary

HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
18: Pacific & Presidio

Timing Plan: AM  
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	38	7	0	0	11	7	0	561	3	6	590	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.95			1.00			0.99	
Flt Protected		0.96			1.00			1.00			1.00	
Satd. Flow (prot)		1807			1785			1882			1863	
Flt Permitted		0.82			1.00			1.00			1.00	
Satd. Flow (perm)		1546			1785			1882			1857	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	7	0	0	11	7	0	561	3	6	590	49
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	45	0	0	13	0	0	564	0	0	642	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		28.0			28.0			54.0			54.0	
Effective Green, g (s)		28.0			28.0			54.0			54.0	
Actuated g/C Ratio		0.31			0.31			0.60			0.60	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Lane Grp Cap (vph)		481			555			1129			1114	
v/s Ratio Prot					0.01			0.30				
v/s Ratio Perm		c0.03									c0.35	
v/c Ratio		0.09			0.02			0.50			0.58	
Uniform Delay, d1		22.0			21.5			10.3			11.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			0.1			1.6			2.2	
Delay (s)		22.4			21.6			11.9			13.2	
Level of Service		C			C			B			B	
Approach Delay (s)		22.4			21.6			11.9			13.2	
Approach LOS		C			C			B			B	

Intersection Summary

HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
19: Lake & Park Presidio/1

Timing Plan: AM  
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	468	43	8	0	5	361	0	2263	1	0	2248	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00			1.00	1.00		0.91			0.91	
Frt	1.00	0.98			1.00	0.85		1.00			0.98	
Flt Protected	0.95	1.00			1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1789	1839			1883	1601		5141			5039	
Flt Permitted	0.75	1.00			1.00	1.00		1.00			1.00	
Satd. Flow (perm)	1421	1839			1883	1601		5141			5039	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	468	43	8	0	5	361	0	2263	1	0	2248	345
RTOR Reduction (vph)	0	3	0	0	0	3	0	0	0	0	23	0
Lane Group Flow (vph)	468	48	0	0	5	358	0	2264	0	0	2570	0
Turn Type	Perm			Perm		Perm						
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	30.0	30.0			30.0	30.0		52.0			52.0	
Effective Green, g (s)	30.0	30.0			30.0	30.0		52.0			52.0	
Actuated g/C Ratio	0.33	0.33			0.33	0.33		0.58			0.58	
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0			4.0	
Lane Grp Cap (vph)	474	613			628	534		2970			2911	
v/s Ratio Prot		0.03			0.00			0.44			c0.51	
v/s Ratio Perm	c0.33					0.22						
v/c Ratio	0.99	0.08			0.01	0.67		0.76			0.88	
Uniform Delay, d1	29.8	20.5			20.1	25.7		14.3			16.4	
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	
Incremental Delay, d2	38.3	0.2			0.0	6.5		1.9			4.3	
Delay (s)	68.1	20.8			20.1	32.3		16.2			20.7	
Level of Service	E	C			C	C		B			C	
Approach Delay (s)		63.5			32.1			16.2			20.7	
Approach LOS		E			C			B			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			23.5				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.92									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			102.0%				ICU Level of Service			G		
Analysis Period (min)			15									

c Critical Lane Group

Refined Presidio Parkway Alternative  
3: Lincoln & GGB Viewing Area

Timing Plan: AM  
HCM Unsignalized Intersection Capacity Analysis

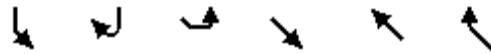


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↷	↶	↶	↶
Sign Control		Stop	Stop		Stop	
Volume (vph)	516	5	11	55	39	101
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	516	5	11	55	39	101
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total (vph)	516	5	11	55	140	
Volume Left (vph)	516	0	0	0	39	
Volume Right (vph)	0	0	0	55	101	
Hadj (s)	0.53	0.03	0.03	-0.67	-0.34	
Departure Headway (s)	5.5	5.0	5.4	4.7	5.1	
Degree Utilization, x	0.79	0.01	0.02	0.07	0.20	
Capacity (veh/h)	644	705	625	719	644	
Control Delay (s)	24.5	6.8	7.3	6.9	9.3	
Approach Delay (s)	24.3		7.0		9.3	
Approach LOS	C		A		A	
Intersection Summary						
Delay			19.9			
HCM Level of Service			C			
Intersection Capacity Utilization			50.3%		ICU Level of Service	A
Analysis Period (min)			15			



Refined Presidio Parkway Alternative  
5: Girard & Lincoln

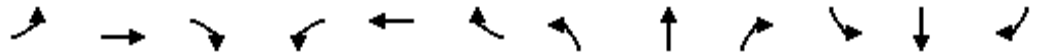
Timing Plan: AM  
HCM Unsignalized Intersection Capacity Analysis



Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	466	42	43	62	134	225
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	466	42	43	62	134	225
Direction, Lane #	SB 1	SE 1	SE 2	NW 1	NW 2	
Volume Total (vph)	508	64	41	89	270	
Volume Left (vph)	466	43	0	0	0	
Volume Right (vph)	42	0	0	0	225	
Hadj (s)	0.17	0.37	0.03	0.03	-0.55	
Departure Headway (s)	5.3	7.0	6.6	6.2	5.6	
Degree Utilization, x	0.75	0.12	0.08	0.15	0.42	
Capacity (veh/h)	664	473	496	544	605	
Control Delay (s)	22.1	9.7	8.9	9.2	11.5	
Approach Delay (s)	22.1	9.4		10.9		
Approach LOS	C	A		B		
Intersection Summary						
Delay			16.6			
HCM Level of Service			C			
Intersection Capacity Utilization			52.7%		ICU Level of Service	A
Analysis Period (min)			15			

Refined Presidio Parkway Alternative  
6: Old Mason & Halleck

Timing Plan: AM  
HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗			↖	↗		↖	↗
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	2	0	8	0	0	0	0	30	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	2	0	8	0	0	0	0	30	0	0	0
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	2	0	8	0	0	30	0	0				
Volume Left (vph)	0	0	8	0	0	0	0	0				
Volume Right (vph)	0	0	0	0	0	30	0	0				
Hadj (s)	0.03	0.00	0.53	0.00	0.00	-0.67	0.00	0.00				
Departure Headway (s)	4.6	4.6	5.1	4.6	4.5	3.9	4.5	4.5				
Degree Utilization, x	0.00	0.00	0.01	0.00	0.00	0.03	0.00	0.00				
Capacity (veh/h)	771	790	688	791	800	927	797	797				
Control Delay (s)	6.4	6.4	7.0	6.4	6.3	5.8	6.3	6.3				
Approach Delay (s)	6.4		7.0		5.8		0.0					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			6.1									
HCM Level of Service			A									
Intersection Capacity Utilization			13.3%	ICU Level of Service	A							
Analysis Period (min)			15									

Refined Presidio Parkway Alternative  
 12: Marina & Broderick

Timing Plan: AM  
 HCM Unsignalized Intersection Capacity Analysis



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑↑
Sign Control	Stop			Stop	Stop	
Volume (vph)	1190	0	0	707	1	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1190	0	0	707	1	0
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total (vph)	793	397	236	471	1	
Volume Left (vph)	0	0	0	0	1	
Volume Right (vph)	0	0	0	0	0	
Hadj (s)	0.03	0.03	0.03	0.03	0.23	
Departure Headway (s)	5.3	5.3	5.7	5.7	7.0	
Degree Utilization, x	1.16	0.58	0.37	0.74	0.00	
Capacity (veh/h)	676	659	616	619	495	
Control Delay (s)	107.8	14.1	10.8	22.2	10.0	
Approach Delay (s)	76.6		18.4		10.0	
Approach LOS	F		C		A	
Intersection Summary						
Delay			54.9			
HCM Level of Service			F			
Intersection Capacity Utilization			42.9%		ICU Level of Service	A
Analysis Period (min)			15			

Refined Presidio Parkway Alternative  
 13: Marina & Divisadero

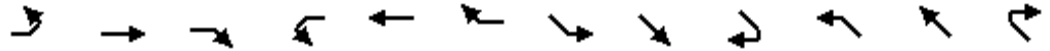
Timing Plan: AM  
 HCM Unsignalized Intersection Capacity Analysis



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Sign Control	Stop			Stop	Stop	
Volume (vph)	1192	3	0	709	13	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1192	3	0	709	13	2
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total (vph)	795	400	236	473	15	
Volume Left (vph)	0	0	0	0	13	
Volume Right (vph)	0	3	0	0	2	
Hadj (s)	0.03	0.03	0.03	0.03	0.13	
Departure Headway (s)	5.4	5.3	5.8	5.8	6.9	
Degree Utilization, x	1.18	0.59	0.38	0.76	0.03	
Capacity (veh/h)	665	659	609	612	503	
Control Delay (s)	115.3	14.7	11.0	23.2	10.1	
Approach Delay (s)	81.6		19.1		10.1	
Approach LOS	F		C		B	
Intersection Summary						
Delay			58.0			
HCM Level of Service			F			
Intersection Capacity Utilization			43.0%		ICU Level of Service	A
Analysis Period (min)			15			

Refined Presidio Parkway Alternative  
 84: Merchant Road & GGB Viewing Area

Timing Plan: AM  
 HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕	↗		↕			↕		↗	↖	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	128	0	114	0	0	0	0	26	1	562	9	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	128	0	114	0	0	0	0	26	1	562	9	0
Direction, Lane #	EB 1	EB 2	WB 1	SE 1	NW 1	NW 2						
Volume Total (vph)	128	114	0	27	562	9						
Volume Left (vph)	128	0	0	0	562	0						
Volume Right (vph)	0	114	0	1	0	0						
Hadj (s)	0.23	-0.57	0.00	0.01	0.53	0.03						
Departure Headway (s)	5.8	3.2	5.8	5.2	5.5	5.0						
Degree Utilization, x	0.21	0.10	0.00	0.04	0.85	0.01						
Capacity (veh/h)	584	1121	590	656	651	711						
Control Delay (s)	10.2	6.6	8.8	8.4	30.7	6.8						
Approach Delay (s)	8.5		0.0	8.4	30.3							
Approach LOS	A		A	A	D							
Intersection Summary												
Delay			23.3									
HCM Level of Service			C									
Intersection Capacity Utilization			51.6%	ICU Level of Service	A							
Analysis Period (min)			15									

**2030 ALTERNATIVE 5**  
**(Refined Presidio Parkway Alternative) PM**  
**Original Intersections**

Refined Presidio Parkway Alternative  
1: Marina & Lyon

Timing Plan: PM  
HCM Signalized Intersection Capacity Analysis

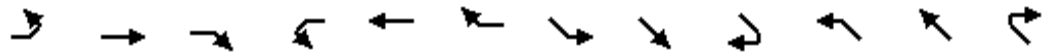


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑		↖		↖	↖		↖
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0		4.0	4.0		4.0
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	1.00		1.00
Frt		1.00		1.00	1.00		1.00		0.85	1.00		0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)		3575		1789	3579		1789		1601	1789		1601
Flt Permitted		1.00		0.18	1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)		3575		346	3579		1789		1601	1789		1601
Volume (vph)	0	1015	7	2	1210	0	13	0	5	23	0	144
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1015	7	2	1210	0	13	0	5	23	0	144
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	3	0	0	20
Lane Group Flow (vph)	0	1021	0	2	1210	0	13	0	2	23	0	124
Turn Type				Perm			custom		custom	custom		custom
Protected Phases		8			8					2		
Permitted Phases		8		8			2		2	2		2
Actuated Green, G (s)		28.0		28.0	28.0		24.0		24.0	24.0		24.0
Effective Green, g (s)		28.0		28.0	28.0		24.0		24.0	24.0		24.0
Actuated g/C Ratio		0.47		0.47	0.47		0.40		0.40	0.40		0.40
Clearance Time (s)		4.0		4.0	4.0		4.0		4.0	4.0		4.0
Lane Grp Cap (vph)		1668		161	1670		716		640	716		640
v/s Ratio Prot		0.29			c0.34					0.01		
v/s Ratio Perm				0.01			0.01		0.00			c0.08
v/c Ratio		0.61		0.01	0.72		0.02		0.00	0.03		0.19
Uniform Delay, d1		11.9		8.6	12.9		10.9		10.8	10.9		11.7
Progression Factor		1.00		1.00	1.00		1.00		1.00	1.00		1.00
Incremental Delay, d2		1.7		0.1	2.8		0.0		0.0	0.1		0.7
Delay (s)		13.6		8.7	15.7		10.9		10.8	11.0		12.4
Level of Service		B		A	B		B		B	B		B
Approach Delay (s)		13.6			15.7			10.9				12.2
Approach LOS		B			B			B				B
<b>Intersection Summary</b>												
HCM Average Control Delay			14.5			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			60.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			55.7%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Refined Presidio Parkway Alternative  
2: Francisco & 101/Richardson

Timing Plan: PM  
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕↕			↕↕			↑↑↑	↗		↑↑↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.95			1.00			0.91			0.91	
Frt		1.00			0.86			1.00			1.00	
Flt Protected		0.95			1.00			1.00			1.00	
Satd. Flow (prot)		3400			1629			5142			5142	
Flt Permitted		0.28			1.00			1.00			1.00	
Satd. Flow (perm)		1008			1629			5142			5142	
Volume (vph)	38	0	0	0	0	422	0	2403	0	0	2620	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	0	0	0	0	422	0	2403	0	0	2620	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	38	0	0	421	0	0	2403	0	0	2620	0
Turn Type	Perm		Perm				Free					
Protected Phases	4		8				6					
Permitted Phases	4		8				Free					
Actuated Green, G (s)	31.0		31.0				51.0					
Effective Green, g (s)	31.0		31.0				51.0					
Actuated g/C Ratio	0.34		0.34				0.57					
Clearance Time (s)	4.0		4.0				4.0					
Lane Grp Cap (vph)	347		561				2914					
v/s Ratio Prot			c0.26				0.47					
v/s Ratio Perm	0.04											
v/c Ratio	0.11		0.75				0.82					
Uniform Delay, d1	20.1		26.1				15.9					
Progression Factor	1.00		1.00				1.00					
Incremental Delay, d2	0.6		8.9				2.8					
Delay (s)	20.7		35.0				18.7					
Level of Service	C		C				B					
Approach Delay (s)	20.7		35.0				18.7					
Approach LOS	C		C				B					

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Refined Presidio Parkway Alternative  
4: Merchant & Lincoln

Timing Plan: PM  
HCM Signalized Intersection Capacity Analysis



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		1.00	1.00	1.00	
Frt	0.87		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1631		1789	1883	1841	
Flt Permitted	1.00		0.67	1.00	1.00	
Satd. Flow (perm)	1631		1260	1883	1841	
Volume (vph)	4	482	70	433	115	23
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	482	70	433	115	23
RTOR Reduction (vph)	278	0	0	0	13	0
Lane Group Flow (vph)	208	0	70	433	125	0
Turn Type			Perm			
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	23.5		24.0	24.0	24.0	
Effective Green, g (s)	23.5		24.0	24.0	24.0	
Actuated g/C Ratio	0.42		0.43	0.43	0.43	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	691		545	814	796	
v/s Ratio Prot	c0.13			c0.23	0.07	
v/s Ratio Perm			0.06			
v/c Ratio	0.30		0.13	0.53	0.16	
Uniform Delay, d1	10.6		9.5	11.6	9.6	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.1		0.5	2.5	0.4	
Delay (s)	11.7		10.0	14.1	10.0	
Level of Service	B		A	B	B	
Approach Delay (s)	11.7			13.5	10.0	
Approach LOS	B			B	B	

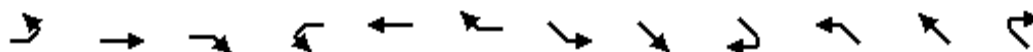
**Intersection Summary**

HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
8: Gorgas/Lyon & 101/Richardson

Timing Plan: PM  
HCM Signalized Intersection Capacity Analysis

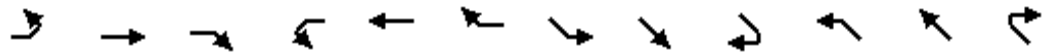


Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑	↗					↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0					4.0			4.0	
Lane Util. Factor			1.00					0.91			0.91	
Frt			0.85					1.00			1.00	
Flt Protected			1.00					1.00			1.00	
Satd. Flow (prot)			1601					5142			5140	
Flt Permitted			1.00					1.00			1.00	
Satd. Flow (perm)			1601					5142			5140	
Volume (vph)	0	0	246	0	0	0	0	2157	0	0	3074	6
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	246	0	0	0	0	2157	0	0	3074	6
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	237	0	0	0	0	2157	0	0	3080	0
Turn Type			Perm									
Protected Phases		4						6			2	
Permitted Phases			4									
Actuated Green, G (s)			23.0					59.0			59.0	
Effective Green, g (s)			23.0					59.0			59.0	
Actuated g/C Ratio			0.26					0.66			0.66	
Clearance Time (s)			4.0					4.0			4.0	
Lane Grp Cap (vph)			409					3371			3370	
v/s Ratio Prot								0.42			c0.60	
v/s Ratio Perm			c0.15									
v/c Ratio			0.58					0.64			0.91	
Uniform Delay, d1			29.3					9.2			13.3	
Progression Factor			1.00					1.00			1.00	
Incremental Delay, d2			5.9					0.9			5.0	
Delay (s)			35.2					10.1			18.3	
Level of Service			D					B			B	
Approach Delay (s)		35.2			0.0			10.1			18.3	
Approach LOS		D			A			B			B	
<b>Intersection Summary</b>												
HCM Average Control Delay			15.9					HCM Level of Service			B	
HCM Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			90.0					Sum of lost time (s)		8.0		
Intersection Capacity Utilization			69.5%					ICU Level of Service		C		
Analysis Period (min)			15									

c Critical Lane Group

Refined Presidio Parkway Alternative  
 9: Marina/Girard & Gorgas/101 SB Ramp

Timing Plan: PM  
 HCM Signalized Intersection Capacity Analysis























Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↻			↻		↻↻	↻			↻↻	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor		1.00			1.00		0.97	1.00			1.00	
Frt		0.99			1.00		1.00	0.88			0.87	
Flt Protected		1.00			0.96		0.95	1.00			1.00	
Satd. Flow (prot)		1869			1806		3471	1656			1638	
Flt Permitted		1.00			0.39		0.69	1.00			0.98	
Satd. Flow (perm)		1869			726		2506	1656			1604	
Volume (vph)	0	289	18	97	16	0	1006	107	446	8	0	147
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	289	18	97	16	0	1006	107	446	8	0	147
RTOR Reduction (vph)	0	2	0	0	0	0	0	156	0	0	51	0
Lane Group Flow (vph)	0	305	0	0	113	0	1006	397	0	0	104	0
Turn Type				Perm			Perm				Perm	
Protected Phases		4			8			6				2
Permitted Phases		4		8			6			2		
Actuated Green, G (s)		23.5			23.5		58.5	58.5			58.5	
Effective Green, g (s)		23.5			23.5		58.5	58.5			58.5	
Actuated g/C Ratio		0.26			0.26		0.65	0.65			0.65	
Clearance Time (s)		4.0			4.0		4.0	4.0			4.0	
Lane Grp Cap (vph)		488			190		1629	1076			1043	
v/s Ratio Prot		c0.16						0.24				
v/s Ratio Perm					0.16		c0.40				0.06	
v/c Ratio		0.62			0.59		0.62	0.37			0.10	
Uniform Delay, d1		29.4			29.1		9.2	7.3			5.9	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		5.9			13.0		1.8	1.0			0.2	
Delay (s)		35.3			42.1		11.0	8.2			6.1	
Level of Service		D			D		B	A			A	
Approach Delay (s)		35.3			42.1			10.0			6.1	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
 11: Marina/Girard & 101 NB Ramp

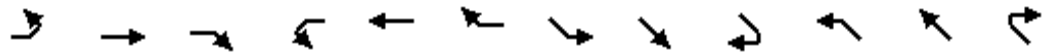
Timing Plan: PM  
 HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	
Lane Configurations		 										
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0					
Lane Util. Factor	1.00	0.95			1.00	1.00	1.00					
Frt	1.00	1.00			1.00	0.85	1.00					
Flt Protected	0.95	1.00			1.00	1.00	0.95					
Satd. Flow (prot)	1789	3579			1883	1601	1789					
Flt Permitted	0.74	1.00			1.00	1.00	0.95					
Satd. Flow (perm)	1401	3579			1883	1601	1789					
Volume (vph)	419	1022	0	0	21	1346	93	0	0	0	0	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	419	1022	0	0	21	1346	93	0	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	419	1022	0	0	21	1346	93	0	0	0	0	
Turn Type	Perm			Free custom			custom	Prot				
Protected Phases	4			8				6				
Permitted Phases	4			Free			2	2				
Actuated Green, G (s)	59.0	59.0			59.0	90.0	23.0					
Effective Green, g (s)	59.0	59.0			59.0	90.0	23.0					
Actuated g/C Ratio	0.66	0.66			0.66	1.00	0.26					
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0					
Lane Grp Cap (vph)	918	2346			1234	1601	457					
v/s Ratio Prot		0.29			0.01							
v/s Ratio Perm	0.30				c0.84	0.05						
v/c Ratio	0.46	0.44			0.02	0.84	0.20					
Uniform Delay, d1	7.6	7.5			5.4	0.0	26.3					
Progression Factor	1.00	1.00			1.00	1.00	1.00					
Incremental Delay, d2	1.6	0.6			0.0	5.5	1.0					
Delay (s)	9.3	8.1			5.4	5.5	27.3					
Level of Service	A	A			A	A	C					
Approach Delay (s)		8.4			5.5		27.3		0.0			
Approach LOS		A			A		C		A			
<b>Intersection Summary</b>												
HCM Average Control Delay		7.6			HCM Level of Service		A					
HCM Volume to Capacity ratio		0.84										
Actuated Cycle Length (s)		90.0			Sum of lost time (s)		0.0					
Intersection Capacity Utilization		41.7%			ICU Level of Service		A					
Analysis Period (min)		15										

c Critical Lane Group

Refined Presidio Parkway Alternative  
14: Chestnut & 101/Richardson

Timing Plan: PM  
HCM Signalized Intersection Capacity Analysis

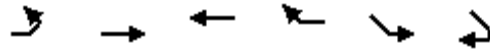


Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕			↕			↑↑↑			↑↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.91			0.91	
Frt		1.00			0.88			0.98			1.00	
Flt Protected		0.99			1.00			1.00			1.00	
Satd. Flow (prot)		1868			1661			5064			5138	
Flt Permitted		0.93			1.00			1.00			1.00	
Satd. Flow (perm)		1743			1661			5064			5138	
Volume (vph)	15	75	0	0	49	337	0	2161	242	0	2285	12
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	15	75	0	0	49	337	0	2161	242	0	2285	12
RTOR Reduction (vph)	0	0	0	0	3	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	90	0	0	383	0	0	2388	0	0	2297	0
Turn Type	Perm		Perm									
Protected Phases		4			8			6			2	
Permitted Phases	4			8				6				
Actuated Green, G (s)		31.0			31.0			51.0			51.0	
Effective Green, g (s)		31.0			31.0			51.0			51.0	
Actuated g/C Ratio		0.34			0.34			0.57			0.57	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Lane Grp Cap (vph)		600			572			2870			2912	
v/s Ratio Prot					c0.23			c0.47			0.45	
v/s Ratio Perm		0.05										
v/c Ratio		0.15			0.67			0.83			0.79	
Uniform Delay, d1		20.4			25.1			16.0			15.3	
Progression Factor		1.00			1.00			0.28			1.00	
Incremental Delay, d2		0.5			6.1			1.6			1.8	
Delay (s)		20.9			31.3			6.1			17.1	
Level of Service		C			C			A			B	
Approach Delay (s)		20.9			31.3			6.1			17.1	
Approach LOS		C			C			A			B	

Intersection Summary

HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SEL	SER
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	1.00	0.76	0.94	
Frt		1.00	1.00	0.85	1.00	
Flt Protected		1.00	1.00	1.00	0.95	
Satd. Flow (prot)		1883	1883	3650	5046	
Flt Permitted		1.00	1.00	1.00	0.95	
Satd. Flow (perm)		1883	1883	3650	5046	
Volume (vph)	0	126	217	2258	2126	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	126	217	2258	2126	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	126	217	2258	2126	0
Turn Type			Prot			
Protected Phases			8		2	
Permitted Phases		4		8 2		
Actuated Green, G (s)		25.0	25.0	90.0	57.0	
Effective Green, g (s)		25.0	25.0	90.0	57.0	
Actuated g/C Ratio		0.28	0.28	1.00	0.63	
Clearance Time (s)		4.0	4.0		4.0	
Lane Grp Cap (vph)		523	523	3650	3196	
v/s Ratio Prot			0.12		c0.42	
v/s Ratio Perm		0.07		c0.62		
v/c Ratio		0.24	0.41	0.62	0.67	
Uniform Delay, d1		25.2	26.5	0.0	10.5	
Progression Factor		0.49	1.00	1.00	0.16	
Incremental Delay, d2		1.1	2.4	0.8	0.6	
Delay (s)		13.5	28.9	0.8	2.2	
Level of Service		B	C	A	A	
Approach Delay (s)		13.5	3.3		2.2	
Approach LOS		B	A		A	













**Intersection Summary**

HCM Average Control Delay	3.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
16: 101/Lombard & Broderick

Timing Plan: PM  
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑			↑↓				↑↓
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.91			0.91			1.00			1.00	
Frt		0.98			1.00			1.00			0.93	
Flt Protected		1.00			1.00			0.95			0.98	
Satd. Flow (prot)		5050			5140			1794			1717	
Flt Permitted		1.00			1.00			0.71			0.91	
Satd. Flow (perm)		5050			5140			1332			1586	
Volume (vph)	0	2039	277	0	2221	6	358	3	0	10	3	15
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2039	277	0	2221	6	358	3	0	10	3	15
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	2297	0	0	2227	0	0	361	0	0	21	0
Turn Type							Perm			Perm		
Protected Phases		2			6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)		59.0			59.0			23.5			23.5	
Effective Green, g (s)		59.0			59.0			23.5			23.5	
Actuated g/C Ratio		0.65			0.65			0.26			0.26	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Lane Grp Cap (vph)		3292			3351			346			412	
v/s Ratio Prot		c0.45			0.43							
v/s Ratio Perm								c0.27			0.01	
v/c Ratio		0.70			0.66			1.04			0.05	
Uniform Delay, d1		10.1			9.7			33.5			25.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			1.1			60.1			0.2	
Delay (s)		11.3			10.7			93.6			25.4	
Level of Service		B			B			F			C	
Approach Delay (s)		11.3			10.7			93.6			25.4	
Approach LOS		B			B			F			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			17.2				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			90.5				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			78.9%				ICU Level of Service			D		
Analysis Period (min)			15									
c	Critical Lane Group											

Refined Presidio Parkway Alternative  
17: Lombard Gate & Lyon

Timing Plan: PM  
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0						4.0	
Lane Util. Factor	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			1.00						0.86	
Flt Protected	0.95	1.00			1.00						1.00	
Satd. Flow (prot)	1789	1883			1882						1629	
Flt Permitted	0.45	1.00			1.00						1.00	
Satd. Flow (perm)	855	1883			1882						1629	
Volume (vph)	116	155	0	0	357	2	0	0	0	0	0	16
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	116	155	0	0	357	2	0	0	0	0	0	16
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	116	155	0	0	359	0	0	0	0	0	7	0
Turn Type	Perm			Perm			Perm				Perm	
Protected Phases		4			8			2				6
Permitted Phases	4			8			2				6	
Actuated Green, G (s)	44.0	44.0			44.0						38.0	
Effective Green, g (s)	44.0	44.0			44.0						38.0	
Actuated g/C Ratio	0.49	0.49			0.49						0.42	
Clearance Time (s)	4.0	4.0			4.0						4.0	
Lane Grp Cap (vph)	418	921			920						688	
v/s Ratio Prot		0.08			c0.19						c0.00	
v/s Ratio Perm	0.14											
v/c Ratio	0.28	0.17			0.39						0.01	
Uniform Delay, d1	13.6	12.8			14.5						15.1	
Progression Factor	1.00	1.00			1.12						1.00	
Incremental Delay, d2	1.6	0.4			1.2						0.0	
Delay (s)	15.2	13.2			17.4						15.1	
Level of Service	B	B			B						B	
Approach Delay (s)		14.1			17.4			0.0			15.1	
Approach LOS		B			B			A			B	
<b>Intersection Summary</b>												
HCM Average Control Delay			16.0			HCM Level of Service					B	
HCM Volume to Capacity ratio			0.21									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			40.4%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.99			1.00			0.99	
Flt Protected		0.96			1.00			1.00			1.00	
Satd. Flow (prot)		1811			1863			1883			1860	
Flt Permitted		0.80			1.00			1.00			0.99	
Satd. Flow (perm)		1501			1861			1883			1839	
Volume (vph)	29	7	0	2	112	9	0	562	2	13	562	53
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	29	7	0	2	112	9	0	562	2	13	562	53
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	36	0	0	120	0	0	564	0	0	624	0
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases	4		8		8		2		2		6	
Permitted Phases	4		8		8		2		2		6	
Actuated Green, G (s)	28.0		28.0		28.0		54.0		54.0		54.0	
Effective Green, g (s)	28.0		28.0		28.0		54.0		54.0		54.0	
Actuated g/C Ratio	0.31		0.31		0.31		0.60		0.60		0.60	
Clearance Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Lane Grp Cap (vph)	467		579		579		1130		1130		1103	
v/s Ratio Prot							0.30		0.30		0.30	
v/s Ratio Perm	0.02		c0.06		c0.06						c0.34	
v/c Ratio	0.08		0.21		0.21		0.50		0.50		0.57	
Uniform Delay, d1	21.9		22.8		22.8		10.3		10.3		10.9	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.3		0.8		0.8		1.6		1.6		2.1	
Delay (s)	22.2		23.6		23.6		11.9		11.9		13.0	
Level of Service	C		C		C		B		B		B	
Approach Delay (s)	22.2		23.6		23.6		11.9		11.9		13.0	
Approach LOS	C		C		C		B		B		B	






















**Intersection Summary**

HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
19: Lake & Park Presidio/1

Timing Plan: PM  
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		0.91			0.91	
Frt	1.00	0.94		1.00	1.00	0.85		1.00			0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1789	1779		1789	1883	1601		5141			4994	
Flt Permitted	0.73	1.00		0.75	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	1373	1779		1403	1883	1601		5141			4994	
Volume (vph)	232	12	7	1	43	417	0	2101	1	0	2472	586
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	232	12	7	1	43	417	0	2101	1	0	2472	586
RTOR Reduction (vph)	0	2	0	0	0	5	0	0	0	0	44	0
Lane Group Flow (vph)	232	17	0	1	43	412	0	2102	0	0	3014	0
Turn Type	Perm			Perm			Perm					
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	30.0	30.0		30.0	30.0	30.0		52.0			52.0	
Effective Green, g (s)	30.0	30.0		30.0	30.0	30.0		52.0			52.0	
Actuated g/C Ratio	0.33	0.33		0.33	0.33	0.33		0.58			0.58	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0			4.0	
Lane Grp Cap (vph)	458	593		468	628	534		2970			2885	
v/s Ratio Prot		0.01			0.02			0.41			c0.60	
v/s Ratio Perm	0.17			0.00		c0.26						
v/c Ratio	0.51	0.03		0.00	0.07	0.77		0.71			1.04	
Uniform Delay, d1	24.1	20.2		20.0	20.5	26.9		13.6			19.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	4.0	0.1		0.0	0.2	10.4		1.5			29.9	
Delay (s)	28.0	20.3		20.0	20.7	37.3		15.0			48.9	
Level of Service	C	C		C	C	D		B			D	
Approach Delay (s)		27.4			35.7			15.0			48.9	
Approach LOS		C			D			B			D	
<b>Intersection Summary</b>												
HCM Average Control Delay			34.8				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			89.3%				ICU Level of Service			E		
Analysis Period (min)			15									

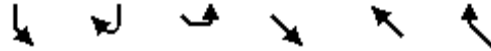
c Critical Lane Group

Refined Presidio Parkway Alternative  
 3: Lincoln & GGB Viewing Area

Timing Plan: PM  
 HCM Unsignalized Intersection Capacity Analysis























Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖	↗	↖	↗
Sign Control		Stop	Stop		Stop	
Volume (vph)	404	6	22	41	35	104
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	404	6	22	41	35	104
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total (vph)	404	6	22	41	139	
Volume Left (vph)	404	0	0	0	35	
Volume Right (vph)	0	0	0	41	104	
Hadj (s)	0.53	0.03	0.03	-0.67	-0.36	
Departure Headway (s)	5.5	5.0	5.3	4.6	4.8	
Degree Utilization, x	0.61	0.01	0.03	0.05	0.18	
Capacity (veh/h)	643	707	644	743	695	
Control Delay (s)	15.5	6.8	7.3	6.6	8.8	
Approach Delay (s)	15.4		6.9		8.8	
Approach LOS	C		A		A	
Intersection Summary						
Delay			13.0			
HCM Level of Service			B			
Intersection Capacity Utilization			44.1%		ICU Level of Service	A
Analysis Period (min)			15			



Movement	SBL	SBR	SEL	SET	NWT	NWR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	382	89	28	96	225	279
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	382	89	28	96	225	279
Direction, Lane #	SB 1	SE 1	SE 2	NW 1	NW 2	
Volume Total (vph)	471	60	64	150	354	
Volume Left (vph)	382	28	0	0	0	
Volume Right (vph)	89	0	0	0	279	
Hadj (s)	0.08	0.27	0.03	0.03	-0.52	
Departure Headway (s)	5.5	7.0	6.8	6.2	5.7	
Degree Utilization, x	0.72	0.12	0.12	0.26	0.56	
Capacity (veh/h)	633	472	488	554	615	
Control Delay (s)	21.5	9.7	9.5	10.2	14.3	
Approach Delay (s)	21.5	9.6		13.1		
Approach LOS	C	A		B		
Intersection Summary						
Delay			16.3			
HCM Level of Service			C			
Intersection Capacity Utilization			55.3%		ICU Level of Service	B
Analysis Period (min)			15			

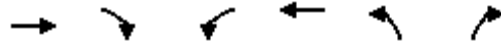
Refined Presidio Parkway Alternative  
6: Old Mason & Halleck

Timing Plan: PM  
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	5	0	29	0	0	0	0	22	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	5	0	29	0	0	0	0	22	0	0	0
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	5	0	29	0	0	22	0	0				
Volume Left (vph)	0	0	29	0	0	0	0	0				
Volume Right (vph)	0	0	0	0	0	22	0	0				
Hadj (s)	0.03	0.00	0.53	0.00	0.00	-0.67	0.00	0.00				
Departure Headway (s)	4.6	4.6	5.1	4.6	4.6	3.9	4.6	4.6				
Degree Utilization, x	0.01	0.00	0.04	0.00	0.00	0.02	0.00	0.00				
Capacity (veh/h)	772	791	692	794	786	896	783	783				
Control Delay (s)	6.4	6.4	7.1	6.4	6.4	5.8	6.4	6.4				
Approach Delay (s)	6.4		7.1		5.8		0.0					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			6.5									
HCM Level of Service			A									
Intersection Capacity Utilization			13.3%		ICU Level of Service				A			
Analysis Period (min)			15									



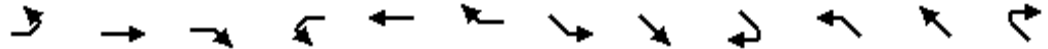
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Sign Control	Stop			Stop	Stop	
Volume (vph)	995	0	0	1194	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	995	0	0	1194	0	0
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total (vph)	663	332	398	796	0	
Volume Left (vph)	0	0	0	0	0	
Volume Right (vph)	0	0	0	0	0	
Hadj (s)	0.03	0.03	0.03	0.03	0.00	
Departure Headway (s)	5.7	5.7	5.6	5.6	6.9	
Degree Utilization, x	1.06	0.53	0.62	1.24	0.00	
Capacity (veh/h)	621	616	629	649	525	
Control Delay (s)	74.1	13.8	16.2	140.6	9.9	
Approach Delay (s)	54.0		99.1		0.0	
Approach LOS	F		F		A	
Intersection Summary						
Delay			78.6			
HCM Level of Service			F			
Intersection Capacity Utilization			36.3%		ICU Level of Service	A
Analysis Period (min)			15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Sign Control	Stop			Stop	Stop	
Volume (vph)	964	41	0	1200	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	964	41	0	1200	1	1
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total (vph)	643	362	400	800	2	
Volume Left (vph)	0	0	0	0	1	
Volume Right (vph)	0	41	0	0	1	
Hadj (s)	0.03	-0.05	0.03	0.03	-0.17	
Departure Headway (s)	5.8	5.7	5.7	5.7	6.8	
Degree Utilization, x	1.03	0.57	0.63	1.26	0.00	
Capacity (veh/h)	618	623	622	642	523	
Control Delay (s)	65.4	14.7	16.7	148.5	9.8	
Approach Delay (s)	47.2		104.6		9.8	
Approach LOS	E		F		A	
Intersection Summary						
Delay			78.3			
HCM Level of Service			F			
Intersection Capacity Utilization			43.2%		ICU Level of Service	A
Analysis Period (min)			15			

Refined Presidio Parkway Alternative  
 84: Merchant Road & GGB Viewing Area

Timing Plan: PM  
 HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↕	↗		↕			↕		↗	↖	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	228	0	111	0	0	0	0	28	2	431	14	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	228	0	111	0	0	0	0	28	2	431	14	0

Direction, Lane #	EB 1	EB 2	WB 1	SE 1	NW 1	NW 2
Volume Total (vph)	228	111	0	30	431	14
Volume Left (vph)	228	0	0	0	431	0
Volume Right (vph)	0	111	0	2	0	0
Hadj (s)	0.23	-0.57	0.00	-0.01	0.53	0.03
Departure Headway (s)	5.5	3.2	5.7	5.4	5.8	5.3
Degree Utilization, x	0.35	0.10	0.00	0.04	0.69	0.02
Capacity (veh/h)	615	1121	577	624	609	667
Control Delay (s)	11.4	6.5	8.7	8.6	19.3	7.2
Approach Delay (s)	9.8		0.0	8.6	19.0	
Approach LOS	A		A	A	C	













Intersection Summary	
Delay	14.8
HCM Level of Service	B
Intersection Capacity Utilization	49.8%
ICU Level of Service	A
Analysis Period (min)	15

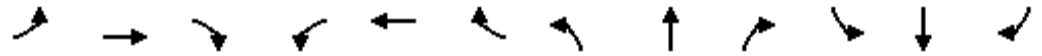


**BASE YEAR**

**AM**

**Additional Intersections**

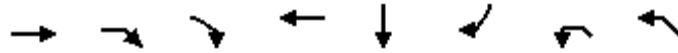
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑		↑	↑		↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.91			0.91		1.00	1.00		1.00	1.00	
Frt		0.98			1.00		1.00	0.97		1.00	0.89	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		5044			5140		1789	1834		1789	1679	
Flt Permitted		1.00			1.00		0.49	1.00		0.71	1.00	
Satd. Flow (perm)		5044			5140		914	1834		1334	1679	
Volume (vph)	0	1715	249	0	814	2	371	62	13	119	60	158
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1715	249	0	814	2	371	62	13	119	60	158
RTOR Reduction (vph)	0	21	0	0	0	0	0	8	0	0	106	0
Lane Group Flow (vph)	0	1943	0	0	816	0	371	67	0	119	112	0
Turn Type							Perm			Perm		
Protected Phases		2			6			4			8	
Permitted Phases							4				8	
Actuated Green, G (s)		58.5			58.5		23.0	23.0		23.0	23.0	
Effective Green, g (s)		58.5			58.5		23.5	23.5		23.5	23.5	
Actuated g/C Ratio		0.65			0.65		0.26	0.26		0.26	0.26	
Clearance Time (s)		4.0			4.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		3279			3341		239	479		348	438	
v/s Ratio Prot		c0.39			0.16			0.04			0.07	
v/s Ratio Perm							c0.41			0.09		
v/c Ratio		0.59			0.24		1.55	0.14		0.34	0.26	
Uniform Delay, d1		9.0			6.6		33.2	25.5		27.0	26.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8			0.2		268.2	0.6		2.7	1.4	
Delay (s)		9.8			6.7		301.4	26.1		29.6	27.7	
Level of Service		A			A		F	C		C	C	
Approach Delay (s)		9.8			6.7			255.1			28.4	
Approach LOS		A			A			F			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			41.5				HCM Level of Service			D		
HCM Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			90.0				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												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕↕			↕↕↕		↕	↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor		0.91			0.91		1.00	1.00			1.00	
Fr <sub>t</sub>		0.98			1.00		1.00	0.98			1.00	
Fl <sub>t</sub> Protected		1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)		5030			5123		1789	1854			1858	
Fl <sub>t</sub> Permitted		1.00			1.00		0.50	1.00			0.87	
Satd. Flow (perm)		5030			5123		942	1854			1639	
Volume (vph)	0	1557	263	0	716	18	82	144	17	75	196	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1557	263	0	716	18	82	144	17	75	196	0
RTOR Reduction (vph)	0	26	0	0	3	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1794	0	0	731	0	82	156	0	0	271	0
Turn Type	Perm		Perm		Perm		Perm		Perm			
Protected Phases	2		6		6		8		8			4
Permitted Phases	2		6		6		8		8			4
Actuated Green, G (s)	54.0		54.0		54.0		27.0		27.0		27.0	
Effective Green, g (s)	54.0		54.0		54.0		28.0		28.0		28.0	
Actuated g/C Ratio	0.60		0.60		0.60		0.31		0.31		0.31	
Clearance Time (s)	4.0		4.0		4.0		5.0		5.0		5.0	
Lane Grp Cap (vph)	3018		3074		3074		293		577		510	
v/s Ratio Prot	c0.36		0.14		0.14		0.08		0.08			
v/s Ratio Perm							0.09		0.09		c0.17	
v/c Ratio	0.59		0.24		0.24		0.28		0.27		0.53	
Uniform Delay, d <sub>1</sub>	11.2		8.4		8.4		23.4		23.3		25.6	
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	
Incremental Delay, d <sub>2</sub>	0.9		0.2		0.2		2.4		1.2		3.9	
Delay (s)	12.1		8.6		8.6		25.8		24.5		29.5	
Level of Service	B		A		A		C		C		C	
Approach Delay (s)	12.1		8.6		8.6		24.9		24.9		29.5	
Approach LOS	B		A		A		C		C		C	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		





















c Critical Lane Group



Movement	EBT	EBR	EBR2	WBT	SBT	SBR	NWL2	NWL
Lane Configurations	↔			↔	←	→		↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0				4.0
Lane Util. Factor	0.95			0.95				0.97
Frt	0.97			1.00				1.00
Flt Protected	1.00			1.00				0.95
Satd. Flow (prot)	3469			3579				3471
Flt Permitted	1.00			1.00				0.95
Satd. Flow (perm)	3469			3579				3471
Volume (vph)	1103	279	4	219	0	0	7	373
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1103	279	4	219	0	0	7	373
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1386	0	0	219	0	0	0	380
Turn Type					Perm	Perm		
Protected Phases	6			6	4			8
Permitted Phases						4	8	
Actuated Green, G (s)	45.0			45.0				10.0
Effective Green, g (s)	45.0			45.0				9.5
Actuated g/C Ratio	0.60			0.60				0.13
Clearance Time (s)	4.0			4.0				3.5
Lane Grp Cap (vph)	2081			2147				440
v/s Ratio Prot	c0.40			0.06				
v/s Ratio Perm								0.11
v/c Ratio	0.67			0.10				0.86
Uniform Delay, d1	10.0			6.4				32.1
Progression Factor	1.00			1.00				1.00
Incremental Delay, d2	1.7			0.1				19.6
Delay (s)	11.7			6.5				51.7
Level of Service	B			A				D
Approach Delay (s)	11.7			6.5	0.0			51.7
Approach LOS	B			A	A			D

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0	4.0		4.0						4.0	4.0	
Lane Util. Factor		0.95	1.00		0.95								
Frt		1.00	0.85		1.00								
Flt Protected		1.00	1.00		1.00								
Satd. Flow (prot)		3579	1601		3579								
Flt Permitted		1.00	1.00		1.00								
Satd. Flow (perm)		3579	1601		3579								
Volume (vph)	0	787	411	0	223	0	0	0	0	0	0	0	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	0	787	411	0	223	0	0	0	0	0	0	0	
RTOR Reduction (vph)	0	0	212	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	787	199	0	223	0	0	0	0	0	0	0	
Turn Type	Perm	custom			custom		Perm			Perm			
Protected Phases		2	6					4			4		
Permitted Phases	2				2	2	4				4		
Actuated Green, G (s)		60.0	44.0		60.0								
Effective Green, g (s)		59.5	43.5		59.5								
Actuated g/C Ratio		0.66	0.48		0.66								
Clearance Time (s)		3.5	3.5		3.5								
Lane Grp Cap (vph)		2366	774		2366								
v/s Ratio Prot		c0.22	0.12										
v/s Ratio Perm					0.06								
v/c Ratio		0.33	0.26		0.09								
Uniform Delay, d1		6.6	13.7		5.5								
Progression Factor		1.00	1.00		1.00								
Incremental Delay, d2		0.4	0.8		0.1								
Delay (s)		7.0	14.5		5.6								
Level of Service		A	B		A								
Approach Delay (s)		9.6			5.6			0.0			0.0		
Approach LOS		A			A			A			A		
<b>Intersection Summary</b>													
HCM Average Control Delay			9.0									HCM Level of Service	A
HCM Volume to Capacity ratio			0.33										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	30.5
Intersection Capacity Utilization			28.8%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖↗	↕			↖↗	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lane Util. Factor		1.00	0.88		1.00		0.94	1.00			0.95	1.00
Frt		1.00	0.85		1.00		1.00	1.00			1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1883	2818		1883		5046	1883			3579	1601
Flt Permitted		1.00	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)		1883	2818		1883		5046	1883			3579	1601
Volume (vph)	0	435	975	0	14	0	392	207	0	0	181	3
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	435	975	0	14	0	392	207	0	0	181	3
RTOR Reduction (vph)	0	0	344	0	0	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	435	631	0	14	0	392	207	0	0	181	1
Turn Type	Perm		pt+ov	Perm			Prot			Perm		Perm
Protected Phases		4	4 5		8		5	2			6	
Permitted Phases	4			8						6		6
Actuated Green, G (s)		39.5	54.5		39.5		11.5	42.5			27.5	27.5
Effective Green, g (s)		40.0	55.0		40.0		11.0	42.0			27.0	27.0
Actuated g/C Ratio		0.44	0.61		0.44		0.12	0.47			0.30	0.30
Clearance Time (s)		4.5			4.5		3.5	3.5			3.5	3.5
Lane Grp Cap (vph)		837	1722		837		617	879			1074	480
v/s Ratio Prot		c0.23	0.22		0.01		c0.08	c0.11			0.05	
v/s Ratio Perm												0.00
v/c Ratio		0.52	0.37		0.02		0.64	0.24			0.17	0.00
Uniform Delay, d1		18.1	8.8		14.0		37.6	14.4			23.2	22.1
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		2.3	0.6		0.0		4.9	0.6			0.3	0.0
Delay (s)		20.4	9.4		14.0		42.5	15.0			23.6	22.1
Level of Service		C	A		B		D	B			C	C
Approach Delay (s)		12.8			14.0			33.0			23.5	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

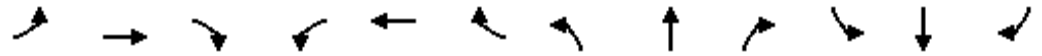
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕↕			↕↕	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	4.0
Lane Util. Factor		0.95			0.95			0.91			0.95	1.00
Frt		1.00			1.00			1.00			1.00	0.85
Flt Protected		1.00			1.00			1.00			1.00	1.00
Satd. Flow (prot)		3574			3579			5128			3579	1601
Flt Permitted		1.00			1.00			0.94			1.00	1.00
Satd. Flow (perm)		3574			3579			4820			3579	1601
Volume (vph)	0	1408	11	0	338	0	1	744	13	0	169	363
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1408	11	0	338	0	1	744	13	0	169	363
RTOR Reduction (vph)	0	1	0	0	0	0	0	2	0	0	0	282
Lane Group Flow (vph)	0	1418	0	0	338	0	0	756	0	0	169	81
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)		61.0			61.0			19.0			19.0	19.0
Effective Green, g (s)		62.0			62.0			20.0			20.0	20.0
Actuated g/C Ratio		0.69			0.69			0.22			0.22	0.22
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Lane Grp Cap (vph)		2462			2466			1071			795	356
v/s Ratio Prot		c0.40			0.09						0.05	
v/s Ratio Perm								c0.16				0.05
v/c Ratio		0.58			0.14			0.71			0.21	0.23
Uniform Delay, d1		7.2			4.8			32.3			28.6	28.7
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		1.0			0.1			3.9			0.6	1.5
Delay (s)		8.2			4.9			36.2			29.2	30.1
Level of Service		A			A			D			C	C
Approach Delay (s)		8.2			4.9			36.2			29.8	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔↔			↑	↔↔		↔		↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		0.91			1.00	0.88		1.00		0.95	0.95	
Fr <sub>t</sub>		0.95			1.00	0.85		0.96		1.00	0.99	
Fl <sub>t</sub> Protected		1.00			1.00	1.00		0.97		0.95	0.97	
Satd. Flow (prot)		4888			1883	2818		1749		1700	1728	
Fl <sub>t</sub> Permitted		1.00			1.00	1.00		0.63		0.95	0.97	
Satd. Flow (perm)		4888			1883	2818		1143		1700	1728	
Volume (vph)	0	599	293	0	297	211	33	0	13	736	199	27
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	599	293	0	297	211	33	0	13	736	199	27
RTOR Reduction (vph)	0	99	0	0	0	59	0	11	0	0	3	0
Lane Group Flow (vph)	0	793	0	0	297	152	0	35	0	473	486	0
Turn Type	Perm				pt+ov		Perm			Split		
Protected Phases	4				4	4 2			6	2	2	
Permitted Phases	4						6					
Actuated Green, G (s)	17.0				17.0	65.5			17.5	45.0	45.0	
Effective Green, g (s)	16.5				16.5	65.0			17.0	44.5	44.5	
Actuated g/C Ratio	0.18				0.18	0.72			0.19	0.49	0.49	
Clearance Time (s)	3.5				3.5				3.5	3.5	3.5	
Lane Grp Cap (vph)	896				345	2035			216	841	854	
v/s Ratio Prot	c0.16				0.16	0.05				0.28	c0.28	
v/s Ratio Perm									c0.03			
v/c Ratio	0.89				0.86	0.07			0.16	0.56	0.57	
Uniform Delay, d <sub>1</sub>	35.8				35.6	3.7			30.6	15.9	16.0	
Progression Factor	1.00				1.00	1.00			1.00	1.00	1.00	
Incremental Delay, d <sub>2</sub>	12.5				23.5	0.1			1.6	2.7	2.8	
Delay (s)	48.3				59.1	3.7			32.2	18.6	18.8	
Level of Service	D				E	A			C	B	B	
Approach Delay (s)	48.3				36.1				32.2		18.7	
Approach LOS	D				D				C		B	

Intersection Summary			
HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

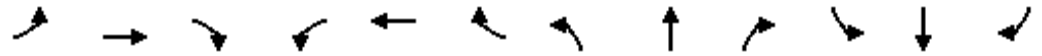




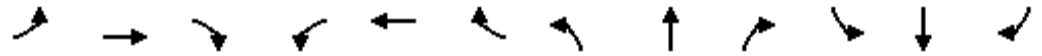
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶		↷			↷
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	0	0	85	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	85	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	170	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	170	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			95	
cM capacity (veh/h)	777	1085			1623	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	0	85
Volume Left	0	0	85
Volume Right	0	0	0
cSH	1700	1700	1623
Volume to Capacity	0.00	0.00	0.05
Queue Length 95th (m)	0.0	0.0	1.3
Control Delay (s)	0.0	0.0	7.3
Lane LOS	A		A
Approach Delay (s)	0.0	0.0	7.3
Approach LOS	A		

Intersection Summary			
Average Delay		7.3	
Intersection Capacity Utilization		8.0%	ICU Level of Service A
Analysis Period (min)		15	



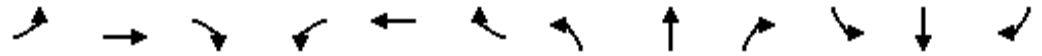
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	322	0	2	96	0	0	8	4	0	60	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	2	322	0	2	96	0	0	8	4	0	60	3
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	324	98	12	63								
Volume Left (vph)	2	2	0	0								
Volume Right (vph)	0	0	4	3								
Hadj (s)	0.04	0.04	-0.17	0.01								
Departure Headway (s)	4.2	4.5	4.8	4.9								
Degree Utilization, x	0.38	0.12	0.02	0.09								
Capacity (veh/h)	834	771	682	675								
Control Delay (s)	9.8	8.1	7.8	8.3								
Approach Delay (s)	9.8	8.1	7.8	8.3								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			9.2									
HCM Level of Service			A									
Intersection Capacity Utilization			27.9%	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		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	124	3	1	3	13	0	4	0	10	43	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1	124	3	1	3	13	0	4	0	10	43	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	82	67	43	132	67	4	43			4		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	82	67	43	132	67	4	43			4		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	85	100	100	100	99	100			99		
cM capacity (veh/h)	888	819	1027	737	819	1080	1566			1618		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	128	17	4	53
Volume Left	1	1	0	10
Volume Right	3	13	0	0
cSH	823	996	1566	1618
Volume to Capacity	0.16	0.02	0.00	0.01
Queue Length 95th (m)	4.2	0.4	0.0	0.1
Control Delay (s)	10.2	8.7	0.0	1.4
Lane LOS	B	A		A
Approach Delay (s)	10.2	8.7	0.0	1.4
Approach LOS	B	A		

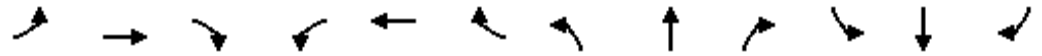
Intersection Summary			
Average Delay		7.5	
Intersection Capacity Utilization	23.1%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	25	24	0	0	14	0	7	0	0	111	0	17
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	25	24	0	0	14	0	7	0	0	111	0	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	49	14	7	128
Volume Left (vph)	25	0	7	111
Volume Right (vph)	0	0	0	17
Hadj (s)	0.14	0.03	0.23	0.13
Departure Headway (s)	4.4	4.3	4.4	4.2
Degree Utilization, x	0.06	0.02	0.01	0.15
Capacity (veh/h)	799	807	790	846
Control Delay (s)	7.6	7.4	7.4	7.9
Approach Delay (s)	7.6	7.4	7.4	7.9
Approach LOS	A	A	A	A

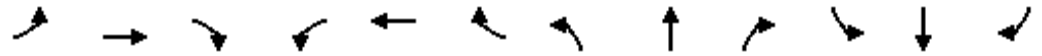
Intersection Summary			
Delay		7.8	
HCM Level of Service		A	
Intersection Capacity Utilization	22.6%		ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	136	10	0	281	3	0	0	0	1	192	33
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	136	10	0	281	3	0	0	0	1	192	33

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	146	284	0	226
Volume Left (vph)	0	0	0	1
Volume Right (vph)	10	3	0	33
Hadj (s)	-0.01	0.03	0.00	-0.05
Departure Headway (s)	4.8	4.7	5.3	4.9
Degree Utilization, x	0.20	0.37	0.00	0.31
Capacity (veh/h)	694	728	609	685
Control Delay (s)	9.0	10.5	8.3	10.0
Approach Delay (s)	9.0	10.5	0.0	10.0
Approach LOS	A	B	A	B

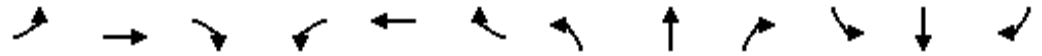
Intersection Summary			
Delay		10.0	
HCM Level of Service		A	
Intersection Capacity Utilization	33.8%		ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	0	0	33	0	153	172	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	0	0	33	0	153	172	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	0	33	325
Volume Left (vph)	0	0	0	153
Volume Right (vph)	0	0	0	0
Hadj (s)	0.00	0.00	0.03	0.13
Departure Headway (s)	4.7	4.7	4.2	4.1
Degree Utilization, x	0.00	0.00	0.04	0.37
Capacity (veh/h)	717	717	827	882
Control Delay (s)	7.7	7.7	7.4	9.4
Approach Delay (s)	0.0	0.0	7.4	9.4
Approach LOS	A	A	A	A

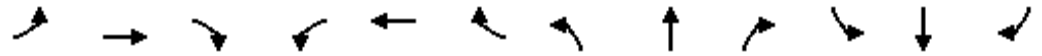
Intersection Summary			
Delay		9.2	
HCM Level of Service		A	
Intersection Capacity Utilization	27.5%		ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	325	0	168	98	7	0	52	12	109	165	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	325	0	168	98	7	0	52	12	109	165	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	325	273	64	274
Volume Left (vph)	0	168	0	109
Volume Right (vph)	0	7	12	0
Hadj (s)	0.03	0.14	-0.08	0.11
Departure Headway (s)	5.4	5.6	6.1	5.8
Degree Utilization, x	0.49	0.43	0.11	0.44
Capacity (veh/h)	626	602	494	575
Control Delay (s)	13.5	12.7	9.8	13.3
Approach Delay (s)	13.5	12.7	9.8	13.3
Approach LOS	B	B	A	B

Intersection Summary			
Delay		13.0	
HCM Level of Service		B	
Intersection Capacity Utilization	63.4%		ICU Level of Service B
Analysis Period (min)		15	

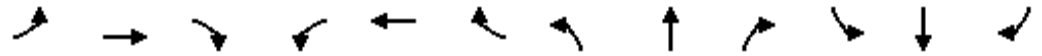


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	16	127	2	10	0	23	28	8	0	149	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	16	127	2	10	0	23	28	8	0	149	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	143	12	59	150
Volume Left (vph)	0	2	23	0
Volume Right (vph)	127	0	8	1
Hadj (s)	-0.50	0.07	0.03	0.03
Departure Headway (s)	3.9	4.6	4.4	4.3
Degree Utilization, x	0.15	0.02	0.07	0.18
Capacity (veh/h)	879	730	774	793
Control Delay (s)	7.6	7.7	7.8	8.3
Approach Delay (s)	7.6	7.7	7.8	8.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay		7.9	
HCM Level of Service		A	
Intersection Capacity Utilization	29.9%		ICU Level of Service A
Analysis Period (min)		15	





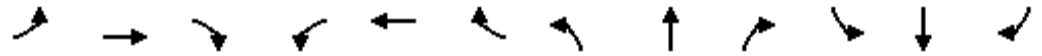
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	6	120	2	0	0	0	444	0	0	308	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	6	120	2	0	0	0	444	0	0	308	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	126	2	444	308								
Volume Left (vph)	0	2	0	0								
Volume Right (vph)	120	0	0	0								
Hadj (s)	-0.54	0.23	0.03	0.03								
Departure Headway (s)	5.1	6.2	4.7	4.8								
Degree Utilization, x	0.18	0.00	0.57	0.41								
Capacity (veh/h)	622	489	755	721								
Control Delay (s)	9.2	9.2	13.8	11.1								
Approach Delay (s)	9.2	9.2	13.8	11.1								
Approach LOS	A	A	B	B								
Intersection Summary												
Delay			12.2									
HCM Level of Service			B									
Intersection Capacity Utilization			37.8%	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)	3	8	64	2	0	0	6	440	2	43	411	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	8	64	2	0	0	6	440	2	43	411	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	75	2	448	457
Volume Left (vph)	3	2	6	43
Volume Right (vph)	64	0	2	3
Hadj (s)	-0.47	0.23	0.03	0.05
Departure Headway (s)	5.5	6.4	4.7	4.7
Degree Utilization, x	0.11	0.00	0.58	0.59
Capacity (veh/h)	568	467	753	751
Control Delay (s)	9.2	9.4	14.0	14.3
Approach Delay (s)	9.2	9.4	14.0	14.3
Approach LOS	A	A	B	B

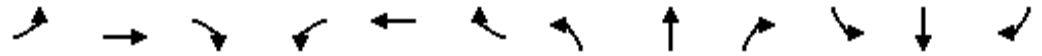
Intersection Summary			
Delay		13.8	
HCM Level of Service		B	
Intersection Capacity Utilization	59.2%		ICU Level of Service B
Analysis Period (min)		15	



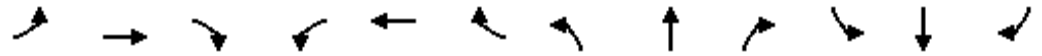
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	0	0	0	0	0	201	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	0	0	0	0	0	201	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	0	0	201
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.00	0.00	0.00	0.03
Departure Headway (s)	4.3	4.3	4.1	3.9
Degree Utilization, x	0.00	0.00	0.00	0.22
Capacity (veh/h)	801	801	881	911
Control Delay (s)	7.3	7.3	7.1	8.0
Approach Delay (s)	0.0	0.0	0.0	8.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay		8.0	
HCM Level of Service		A	
Intersection Capacity Utilization	13.9%		ICU Level of Service A
Analysis Period (min)		15	



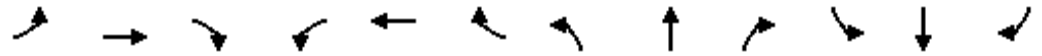
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	51	2	0	0	0	0	21	1	0	163	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	51	2	0	0	0	0	21	1	0	163	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	53	0	22	163								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	2	0	1	0								
Hadj (s)	0.01	0.00	0.01	0.03								
Departure Headway (s)	4.3	4.4	4.2	4.1								
Degree Utilization, x	0.06	0.00	0.03	0.18								
Capacity (veh/h)	798	796	832	868								
Control Delay (s)	7.6	7.4	7.3	8.0								
Approach Delay (s)	7.6	0.0	7.3	8.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.8									
HCM Level of Service			A									
Intersection Capacity Utilization			18.6%	ICU Level of Service	A							
Analysis Period (min)			15									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	0	0	0	0	60	141	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	0	0	0	0	60	141	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	0	0	201
Volume Left (vph)	0	0	0	60
Volume Right (vph)	0	0	0	0
Hadj (s)	0.00	0.00	0.00	0.09
Departure Headway (s)	4.3	4.3	4.1	4.0
Degree Utilization, x	0.00	0.00	0.00	0.22
Capacity (veh/h)	800	800	880	897
Control Delay (s)	7.3	7.3	7.1	8.1
Approach Delay (s)	0.0	0.0	0.0	8.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay		8.1	
HCM Level of Service		A	
Intersection Capacity Utilization	14.1%		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)	0	85	0	0	0	6	0	31	0	33	25	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	85	0	0	0	6	0	31	0	33	25	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	85	6	31	58
Volume Left (vph)	0	0	0	33
Volume Right (vph)	0	6	0	0
Hadj (s)	0.03	-0.57	0.03	0.15
Departure Headway (s)	4.1	3.6	4.2	4.3
Degree Utilization, x	0.10	0.01	0.04	0.07
Capacity (veh/h)	848	961	828	820
Control Delay (s)	7.6	6.6	7.3	7.6
Approach Delay (s)	7.6	6.6	7.3	7.6
Approach LOS	A	A	A	A

Intersection Summary			
Delay		7.5	
HCM Level of Service		A	
Intersection Capacity Utilization	20.9%		ICU Level of Service A
Analysis Period (min)		15	

**BASE YEAR**

**PM**

**Additional Intersections**



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑		↖	↗		↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.91			0.91		1.00	1.00		1.00	1.00	
Frt		0.96			1.00		1.00	0.97		1.00	0.97	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4921			5129		1789	1828		1789	1822	
Flt Permitted		1.00			1.00		0.71	1.00		0.59	1.00	
Satd. Flow (perm)		4921			5129		1335	1828		1111	1822	
Volume (vph)	0	1082	434	0	1814	30	256	127	31	28	58	16
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1082	434	0	1814	30	256	127	31	28	58	16
RTOR Reduction (vph)	0	81	0	0	2	0	0	10	0	0	11	0
Lane Group Flow (vph)	0	1436	0	0	1842	0	256	148	0	28	63	0
Turn Type							Perm			Perm		
Protected Phases		2			6			4			8	
Permitted Phases							4				8	
Actuated Green, G (s)		58.5			58.5		23.0	23.0		23.0	23.0	
Effective Green, g (s)		58.5			58.5		23.5	23.5		23.5	23.5	
Actuated g/C Ratio		0.65			0.65		0.26	0.26		0.26	0.26	
Clearance Time (s)		4.0			4.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		3199			3334		349	477		290	476	
v/s Ratio Prot		0.29			c0.36			0.08			0.03	
v/s Ratio Perm							c0.19			0.03		
v/c Ratio		0.45			0.55		0.73	0.31		0.10	0.13	
Uniform Delay, d1		7.8			8.6		30.4	26.7		25.2	25.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			0.7		12.8	1.7		0.7	0.6	
Delay (s)		8.2			9.3		43.2	28.4		25.9	26.0	
Level of Service		A			A		D	C		C	C	
Approach Delay (s)		8.2			9.3			37.6			26.0	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



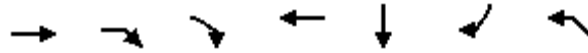


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔↔			↔↔↔		↔	↔			↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.91			0.91			1.00			1.00	
Frt		0.98			0.99			0.99			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		5019			5102			1868			1880	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		5019			5102			1868			1880	
Volume (vph)	0	894	169	0	1876	101	0	277	16	0	279	4
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	894	169	0	1876	101	0	277	16	0	279	4
RTOR Reduction (vph)	0	31	0	0	6	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	1032	0	0	1971	0	0	291	0	0	282	0
Turn Type		Perm		Perm		Perm		Perm		Perm		
Protected Phases		2		6		6		4		8		
Permitted Phases		2		6		4		8				
Actuated Green, G (s)		54.0		54.0		27.0		27.0		27.0		
Effective Green, g (s)		54.0		54.0		28.0		28.0		28.0		
Actuated g/C Ratio		0.60		0.60		0.31		0.31		0.31		
Clearance Time (s)		4.0		4.0		5.0		5.0		5.0		
Lane Grp Cap (vph)		3011		3061		581		585				
v/s Ratio Prot		0.21		0.39		0.16		0.15				
v/s Ratio Perm												
v/c Ratio		0.34		0.64		0.50		0.48				
Uniform Delay, d1		9.1		11.7		25.3		25.1				
Progression Factor		1.00		1.00		1.00		1.00				
Incremental Delay, d2		0.3		1.1		3.1		2.8				
Delay (s)		9.4		12.8		28.4		28.0				
Level of Service		A		B		C		C				
Approach Delay (s)		9.4		12.8		28.4		28.0				
Approach LOS		A		B		C		C				

**Intersection Summary**

HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		





















c Critical Lane Group



Movement	EBT	EBR	EBR2	WBT	SBT	SBR	NWL
Lane Configurations	↔			↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0			4.0
Lane Util. Factor	0.95			0.95			0.97
Frt	0.95			1.00			1.00
Flt Protected	1.00			1.00			0.95
Satd. Flow (prot)	3400			3579			3471
Flt Permitted	1.00			1.00			0.95
Satd. Flow (perm)	3400			3579			3471
Volume (vph)	600	286	13	1506	0	0	8
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	600	286	13	1506	0	0	8
RTOR Reduction (vph)	1	0	0	0	0	0	0
Lane Group Flow (vph)	898	0	0	1506	0	0	8
Turn Type					Perm		
Protected Phases	6			6	4		8
Permitted Phases						4	
Actuated Green, G (s)	45.0			45.0			10.0
Effective Green, g (s)	45.0			45.0			9.5
Actuated g/C Ratio	0.60			0.60			0.13
Clearance Time (s)	4.0			4.0			3.5
Lane Grp Cap (vph)	2040			2147			440
v/s Ratio Prot	0.26			c0.42			c0.00
v/s Ratio Perm							
v/c Ratio	0.44			0.70			0.02
Uniform Delay, d1	8.2			10.4			28.7
Progression Factor	1.00			1.00			1.00
Incremental Delay, d2	0.7			1.9			0.1
Delay (s)	8.8			12.3			28.7
Level of Service	A			B			C
Approach Delay (s)	8.8			12.3	0.0		28.7
Approach LOS	A			B	A		C

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.0				
Lane Util. Factor		0.95	1.00		0.95			1.00				
Frt		1.00	0.85		1.00			1.00				
Flt Protected		1.00	1.00		1.00			0.95				
Satd. Flow (prot)		3579	1601		3579			1789				
Flt Permitted		1.00	1.00		1.00			0.76				
Satd. Flow (perm)		3579	1601		3579			1426				
Volume (vph)	0	600	4	0	841	0	488	0	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	600	4	0	841	0	488	0	0	0	0	0
RTOR Reduction (vph)	0	0	2	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	600	2	0	841	0	0	488	0	0	0	0
Turn Type	Perm	custom			custom		Perm		Perm			
Protected Phases		2	6					4			4	
Permitted Phases	2				2	2	4			4		
Actuated Green, G (s)		60.0	44.0		60.0			23.0				
Effective Green, g (s)		59.5	43.5		59.5			22.5				
Actuated g/C Ratio		0.66	0.48		0.66			0.25				
Clearance Time (s)		3.5	3.5		3.5			3.5				
Lane Grp Cap (vph)		2366	774		2366			357				
v/s Ratio Prot		0.17	0.00									
v/s Ratio Perm					c0.24			c0.34				
v/c Ratio		0.25	0.00		0.36			1.37				
Uniform Delay, d1		6.2	12.0		6.8			33.8				
Progression Factor		1.00	1.00		1.00			1.00				
Incremental Delay, d2		0.3	0.0		0.4			182.2				
Delay (s)		6.5	12.0		7.2			215.9				
Level of Service		A	B		A			F				
Approach Delay (s)		6.5			7.2			215.9			0.0	
Approach LOS		A			A			F			A	
<b>Intersection Summary</b>												
HCM Average Control Delay		59.7			HCM Level of Service			E				
HCM Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		90.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		57.0%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗↘		↕		↗↘	↕			↕↗	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lane Util. Factor		1.00	0.88		1.00		0.94	1.00			0.95	1.00
Frt		1.00	0.85		1.00		1.00	1.00			1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1883	2818		1883		5046	1883			3579	1601
Flt Permitted		1.00	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)		1883	2818		1883		5046	1883			3579	1601
Volume (vph)	0	195	746	0	159	0	1198	173	0	0	639	24
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	195	746	0	159	0	1198	173	0	0	639	24
RTOR Reduction (vph)	0	0	522	0	0	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	195	224	0	159	0	1198	173	0	0	639	7
Turn Type	Perm		Perm	Perm			Prot			Perm		Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8						6		6
Actuated Green, G (s)		26.5	26.5		26.5		25.0	55.5			26.5	26.5
Effective Green, g (s)		27.0	27.0		27.0		25.0	55.0			26.0	26.0
Actuated g/C Ratio		0.30	0.30		0.30		0.28	0.61			0.29	0.29
Clearance Time (s)		4.5	4.5		4.5		4.0	3.5			3.5	3.5
Lane Grp Cap (vph)		565	845		565		1402	1151			1034	463
v/s Ratio Prot		c0.10			0.08		c0.24	0.09			c0.18	
v/s Ratio Perm			0.08									0.00
v/c Ratio		0.35	0.26		0.28		0.85	0.15			0.62	0.01
Uniform Delay, d1		24.6	24.0		24.1		30.8	7.5			27.7	22.9
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		1.7	0.8		1.2		6.8	0.3			2.8	0.1
Delay (s)		26.3	24.7		25.3		37.6	7.8			30.5	22.9
Level of Service		C	C		C		D	A			C	C
Approach Delay (s)		25.0			25.3			33.8			30.2	
Approach LOS		C			C			C			C	

Intersection Summary		
HCM Average Control Delay	30.0	HCM Level of Service C
HCM Volume to Capacity ratio	0.60	
Actuated Cycle Length (s)	90.0	Sum of lost time (s) 12.0
Intersection Capacity Utilization	62.1%	ICU Level of Service B
Analysis Period (min)	15	

c Critical Lane Group



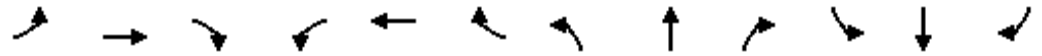
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕↕			↕↕	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	4.0
Lane Util. Factor		0.95			0.95			0.91			0.95	1.00
Frt		1.00			1.00			0.96			1.00	0.85
Flt Protected		0.99			1.00			1.00			1.00	1.00
Satd. Flow (prot)		3523			3579			4960			3579	1601
Flt Permitted		0.50			1.00			1.00			1.00	1.00
Satd. Flow (perm)		1774			3579			4960			3579	1601
Volume (vph)	285	904	33	0	1420	0	0	278	86	0	872	722
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	285	904	33	0	1420	0	0	278	86	0	872	722
RTOR Reduction (vph)	0	2	0	0	0	0	0	62	0	0	0	42
Lane Group Flow (vph)	0	1220	0	0	1420	0	0	302	0	0	872	680
Turn Type	Perm			Perm				Perm			Perm	
Protected Phases		4			4			2			2	
Permitted Phases	4						2			2		2
Actuated Green, G (s)		57.0			57.0			23.0			23.0	23.0
Effective Green, g (s)		58.0			58.0			24.0			24.0	24.0
Actuated g/C Ratio		0.64			0.64			0.27			0.27	0.27
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Lane Grp Cap (vph)		1143			2306			1323			954	427
v/s Ratio Prot					0.40			0.06			0.24	
v/s Ratio Perm		c0.69										c0.42
v/c Ratio		1.83dl			0.62			0.23			0.91	1.59
Uniform Delay, d1		16.0			9.4			25.8			32.0	33.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		46.5			1.2			0.4			14.6	277.7
Delay (s)		62.5			10.7			26.2			46.6	310.7
Level of Service		E			B			C			D	F
Approach Delay (s)		62.5			10.7			26.2			166.2	
Approach LOS		E			B			C			F	

**Intersection Summary**

HCM Average Control Delay	79.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	107.7%	ICU Level of Service	G
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑	↑↑		↑		↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		0.91			1.00	0.88		1.00		0.95	0.95	
Frt		0.99			1.00	0.85		1.00		1.00	1.00	
Flt Protected		1.00			1.00	1.00		0.95		0.95	0.97	
Satd. Flow (prot)		5085			1883	2818		1789		1700	1733	
Flt Permitted		1.00			1.00	1.00		0.95		0.95	0.97	
Satd. Flow (perm)		5085			1883	2818		1789		1700	1733	
Volume (vph)	0	365	29	0	677	1338	266	0	9	581	155	10
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	365	29	0	677	1338	266	0	9	581	155	10
RTOR Reduction (vph)	0	10	0	0	0	372	0	2	0	0	1	0
Lane Group Flow (vph)	0	384	0	0	677	966	0	273	0	365	380	0
Turn Type						pt+ov	Split			Split		
Protected Phases		4			4	4 2	6	6		2	2	
Permitted Phases												
Actuated Green, G (s)		28.0			28.0	65.5		17.5		34.0	34.0	
Effective Green, g (s)		27.5			27.5	65.0		17.0		33.5	33.5	
Actuated g/C Ratio		0.31			0.31	0.72		0.19		0.37	0.37	
Clearance Time (s)		3.5			3.5			3.5		3.5	3.5	
Lane Grp Cap (vph)		1554			575	2035		338		633	645	
v/s Ratio Prot		0.08			c0.36	0.34		c0.15		0.21	c0.22	
v/s Ratio Perm												
v/c Ratio		0.25			1.18	0.47		0.81		0.58	0.59	
Uniform Delay, d1		23.5			31.2	5.3		34.9		22.6	22.7	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.4			96.9	0.8		18.5		3.8	3.9	
Delay (s)		23.9			128.2	6.1		53.5		26.4	26.6	
Level of Service		C			F	A		D		C	C	
Approach Delay (s)		23.9			47.1			53.5			26.5	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶		↷			↷
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	3	0	6	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	0	6	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	6	6			6	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	6	6			6	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1015	1077			1615	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	3	6	0			
Volume Left	3	0	0			
Volume Right	0	0	0			
cSH	1015	1700	1700			
Volume to Capacity	0.00	0.00	0.00			
Queue Length 95th (m)	0.1	0.0	0.0			
Control Delay (s)	8.6	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.6	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay		2.9				
Intersection Capacity Utilization		13.3%		ICU Level of Service		A
Analysis Period (min)		15				

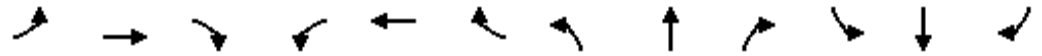


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	187	0	18	339	0	0	46	8	0	34	23
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	2	187	0	18	339	0	0	46	8	0	34	23

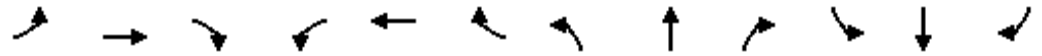
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	189	357	54	57
Volume Left (vph)	2	18	0	0
Volume Right (vph)	0	0	8	23
Hadj (s)	0.04	0.04	-0.05	-0.21
Departure Headway (s)	4.6	4.5	5.2	5.0
Degree Utilization, x	0.24	0.44	0.08	0.08
Capacity (veh/h)	747	781	619	634
Control Delay (s)	9.1	10.9	8.6	8.5
Approach Delay (s)	9.1	10.9	8.6	8.5
Approach LOS	A	B	A	A

Intersection Summary			
Delay		10.0	
HCM Level of Service		B	
Intersection Capacity Utilization	39.1%		ICU Level of Service A
Analysis Period (min)		15	





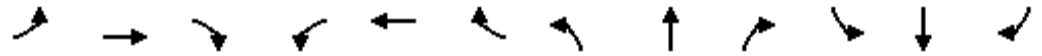
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	10	0	1	113	0	2	23	0	0	34	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	10	0	1	113	0	2	23	0	0	34	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	118	61	34	66	61	23	34			23		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	118	61	34	66	61	23	34			23		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	100	100	86	100	100			100		
cM capacity (veh/h)	768	829	1039	918	829	1054	1578			1592		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	10	114	25	34								
Volume Left	0	1	2	0								
Volume Right	0	0	0	0								
cSH	829	830	1578	1592								
Volume to Capacity	0.01	0.14	0.00	0.00								
Queue Length 95th (m)	0.3	3.6	0.0	0.0								
Control Delay (s)	9.4	10.0	0.6	0.0								
Lane LOS	A	B	A									
Approach Delay (s)	9.4	10.0	0.6	0.0								
Approach LOS	A	B										
<b>Intersection Summary</b>												
Average Delay			6.8									
Intersection Capacity Utilization			16.7%		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)	30	21	0	0	133	0	6	0	18	0	0	13
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	30	21	0	0	133	0	6	0	18	0	0	13

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	51	133	24	13
Volume Left (vph)	30	0	6	0
Volume Right (vph)	0	0	18	13
Hadj (s)	0.15	0.03	-0.37	-0.57
Departure Headway (s)	4.3	4.1	3.9	3.8
Degree Utilization, x	0.06	0.15	0.03	0.01
Capacity (veh/h)	829	873	862	907
Control Delay (s)	7.5	7.8	7.1	6.8
Approach Delay (s)	7.5	7.8	7.1	6.8
Approach LOS	A	A	A	A

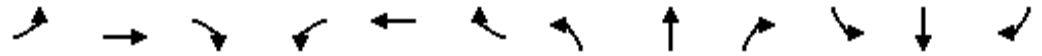
Intersection Summary			
Delay		7.6	
HCM Level of Service		A	
Intersection Capacity Utilization	27.3%		ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	187	0	0	204	0	13	0	0	0	0	112
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	187	0	0	204	0	13	0	0	0	0	112

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	187	204	13	112
Volume Left (vph)	0	0	13	0
Volume Right (vph)	0	0	0	112
Hadj (s)	0.03	0.03	0.23	-0.57
Departure Headway (s)	4.4	4.4	5.2	4.2
Degree Utilization, x	0.23	0.25	0.02	0.13
Capacity (veh/h)	781	778	631	773
Control Delay (s)	8.8	8.9	8.3	7.9
Approach Delay (s)	8.8	8.9	8.3	7.9
Approach LOS	A	A	A	A

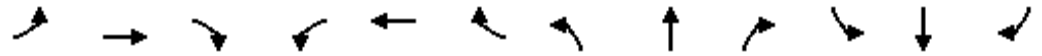
Intersection Summary			
Delay		8.6	
HCM Level of Service		A	
Intersection Capacity Utilization	24.8%		ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	94	0	260	3	0	166	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	94	0	260	3	0	166	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	94	263	166
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	94	3	0
Hadj (s)	0.00	-0.57	0.03	0.03
Departure Headway (s)	5.0	4.3	4.3	4.4
Degree Utilization, x	0.00	0.11	0.32	0.20
Capacity (veh/h)	657	760	808	779
Control Delay (s)	8.0	7.8	9.3	8.6
Approach Delay (s)	0.0	7.8	9.3	8.6
Approach LOS	A	A	A	A

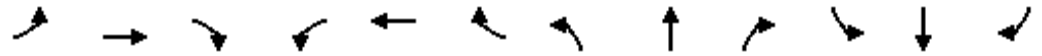
Intersection Summary			
Delay		8.8	
HCM Level of Service		A	
Intersection Capacity Utilization	26.4%		ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	194	0	28	357	80	0	92	65	22	74	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	194	0	28	357	80	0	92	65	22	74	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	194	465	157	96
Volume Left (vph)	0	28	0	22
Volume Right (vph)	0	80	65	0
Hadj (s)	0.03	-0.06	-0.21	0.08
Departure Headway (s)	5.3	4.9	5.6	6.0
Degree Utilization, x	0.29	0.63	0.24	0.16
Capacity (veh/h)	623	712	570	523
Control Delay (s)	10.5	15.9	10.3	10.1
Approach Delay (s)	10.5	15.9	10.3	10.1
Approach LOS	B	C	B	B

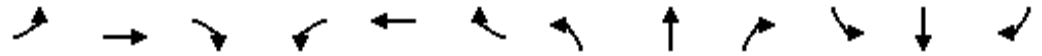
Intersection Summary			
Delay		13.2	
HCM Level of Service		B	
Intersection Capacity Utilization	62.7%		ICU Level of Service B
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	19	32	12	76	0	107	59	7	0	52	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	19	32	12	76	0	107	59	7	0	52	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	51	88	173	52
Volume Left (vph)	0	12	107	0
Volume Right (vph)	32	0	7	0
Hadj (s)	-0.34	0.06	0.13	0.03
Departure Headway (s)	4.2	4.5	4.4	4.5
Degree Utilization, x	0.06	0.11	0.21	0.06
Capacity (veh/h)	808	744	787	765
Control Delay (s)	7.5	8.1	8.6	7.8
Approach Delay (s)	7.5	8.1	8.6	7.8
Approach LOS	A	A	A	A

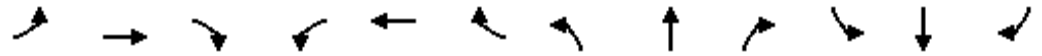
Intersection Summary			
Delay		8.2	
HCM Level of Service		A	
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	3	0	0	9	1	17	92	394	0	0	491	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	0	0	9	1	17	92	394	0	0	491	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	3	27	486	491
Volume Left (vph)	3	9	92	0
Volume Right (vph)	0	17	0	0
Hadj (s)	0.23	-0.28	0.07	0.03
Departure Headway (s)	6.4	5.8	4.6	4.5
Degree Utilization, x	0.01	0.04	0.62	0.62
Capacity (veh/h)	469	529	772	777
Control Delay (s)	9.4	9.0	14.7	14.7
Approach Delay (s)	9.4	9.0	14.7	14.7
Approach LOS	A	A	B	B

Intersection Summary			
Delay		14.5	
HCM Level of Service		B	
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)		15	

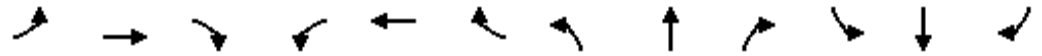


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	7	2	13	6	6	9	25	471	7	0	497	4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	7	2	13	6	6	9	25	471	7	0	497	4

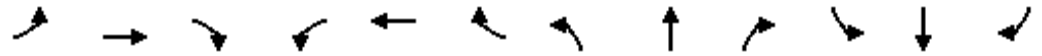
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	22	21	503	501
Volume Left (vph)	7	6	25	0
Volume Right (vph)	13	9	7	4
Hadj (s)	-0.26	-0.17	0.04	0.03
Departure Headway (s)	5.9	6.0	4.6	4.6
Degree Utilization, x	0.04	0.04	0.64	0.64
Capacity (veh/h)	519	514	767	765
Control Delay (s)	9.1	9.2	15.6	15.5
Approach Delay (s)	9.1	9.2	15.6	15.5
Approach LOS	A	A	C	C

Intersection Summary			
Delay		15.3	
HCM Level of Service		C	
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)	0	0	0	0	0	0	0	13	0	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	0	0	13	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	0	13	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.03	0.00								
Departure Headway (s)	3.9	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.01	0.00								
Capacity (veh/h)	910	910	912	915								
Control Delay (s)	6.9	6.9	7.0	6.9								
Approach Delay (s)	0.0	0.0	7.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.0									
HCM Level of Service			A									
Intersection Capacity Utilization			6.7%	ICU Level of Service	A							
Analysis Period (min)			15									

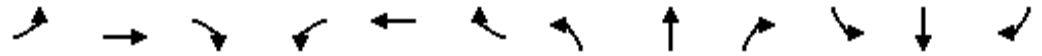


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	0	0	246	1	0	143	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	0	0	246	1	0	143	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	0	247	143
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	1	0
Hadj (s)	0.00	0.00	0.03	0.03
Departure Headway (s)	4.7	4.7	4.1	4.2
Degree Utilization, x	0.00	0.00	0.28	0.17
Capacity (veh/h)	705	705	872	853
Control Delay (s)	7.7	7.7	8.6	8.0
Approach Delay (s)	0.0	0.0	8.6	8.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay		8.4	
HCM Level of Service		A	
Intersection Capacity Utilization	16.3%		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		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	6	0	7	0	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	6	0	7	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	6	7	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	6	0	0								
Hadj (s)	0.00	-0.57	0.03	0.00								
Departure Headway (s)	3.9	3.3	3.9	3.9								
Degree Utilization, x	0.00	0.01	0.01	0.00								
Capacity (veh/h)	912	1066	908	913								
Control Delay (s)	6.9	6.4	7.0	6.9								
Approach Delay (s)	0.0	6.4	7.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			6.7									
HCM Level of Service			A									
Intersection Capacity Utilization			13.3%	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		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	135	0	21	0	12	27	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	135	0	21	0	12	27	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	135	21	42
Volume Left (vph)	0	0	0	12
Volume Right (vph)	0	135	0	3
Hadj (s)	0.00	-0.57	0.03	0.05
Departure Headway (s)	4.2	3.5	4.2	4.2
Degree Utilization, x	0.00	0.13	0.02	0.05
Capacity (veh/h)	851	1015	814	822
Control Delay (s)	7.2	7.0	7.3	7.4
Approach Delay (s)	0.0	7.0	7.3	7.4
Approach LOS	A	A	A	A

Intersection Summary			
Delay		7.1	
HCM Level of Service		A	
Intersection Capacity Utilization	24.0%		ICU Level of Service A
Analysis Period (min)		15	

**ALTERNATIVE 1**  
**(No Build) AM**  
**Additional Intersections**

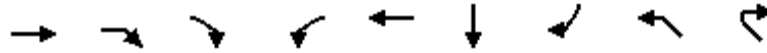
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑		↑	↑		↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.91			0.91		1.00	1.00		1.00	1.00	
Frt		0.98			1.00		1.00	0.96		1.00	0.91	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		5016			5141		1789	1804		1789	1722	
Flt Permitted		1.00			1.00		0.61	1.00		0.72	1.00	
Satd. Flow (perm)		5016			5141		1148	1804		1356	1722	
Volume (vph)	0	1853	361	0	1315	2	437	41	16	83	63	84
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1853	361	0	1315	2	437	41	16	83	63	84
RTOR Reduction (vph)	0	32	0	0	0	0	0	12	0	0	53	0
Lane Group Flow (vph)	0	2182	0	0	1317	0	437	45	0	83	94	0
Turn Type							Perm			Perm		
Protected Phases		2			6			4			8	
Permitted Phases							4				8	
Actuated Green, G (s)		58.5			58.5		23.0	23.0		23.0	23.0	
Effective Green, g (s)		58.5			58.5		23.5	23.5		23.5	23.5	
Actuated g/C Ratio		0.65			0.65		0.26	0.26		0.26	0.26	
Clearance Time (s)		4.0			4.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		3260			3342		300	471		354	450	
v/s Ratio Prot		c0.43			0.26			0.03			0.05	
v/s Ratio Perm							c0.38			0.06		
v/c Ratio		0.67			0.39		1.46	0.10		0.23	0.21	
Uniform Delay, d1		9.8			7.4		33.2	25.2		26.2	26.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.1			0.3		223.1	0.4		1.6	1.1	
Delay (s)		10.9			7.8		256.4	25.6		27.7	27.0	
Level of Service		B			A		F	C		C	C	
Approach Delay (s)		10.9			7.8			229.7			27.3	
Approach LOS		B			A			F			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			36.2				HCM Level of Service			D		
HCM Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			86.5%				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		↕↕↕			↕↕↕		↕	↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor		0.91			0.91		1.00	1.00			1.00	
Frt		0.97			1.00		1.00	0.99			1.00	
Flt Protected		1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)		5002			5122		1789	1872			1859	
Flt Permitted		1.00			1.00		0.52	1.00			0.84	
Satd. Flow (perm)		5002			5122		987	1872			1577	
Volume (vph)	0	1596	352	0	1165	31	131	222	9	65	178	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1596	352	0	1165	31	131	222	9	65	178	0
RTOR Reduction (vph)	0	39	0	0	3	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	1909	0	0	1193	0	131	230	0	0	243	0
Turn Type	Perm		Perm		Perm		Perm		Perm			
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		54.0			54.0		27.0	27.0			27.0	
Effective Green, g (s)		54.0			54.0		28.0	28.0			28.0	
Actuated g/C Ratio		0.60			0.60		0.31	0.31			0.31	
Clearance Time (s)		4.0			4.0		5.0	5.0			5.0	
Lane Grp Cap (vph)		3001			3073		307	582			491	
v/s Ratio Prot		c0.38			0.23			0.12				
v/s Ratio Perm							0.13				c0.15	
v/c Ratio		0.64			0.39		0.43	0.39			0.49	
Uniform Delay, d1		11.6			9.4		24.6	24.3			25.2	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.0			0.4		4.3	2.0			3.5	
Delay (s)		12.7			9.8		28.9	26.3			28.8	
Level of Service		B			A		C	C			C	
Approach Delay (s)		12.7			9.8			27.3			28.8	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group























Movement	EBT	EBR	EBR2	WBL	WBT	SBT	SBR	NWL	NWR2
Lane Configurations	↔				↔		↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0				4.0		4.0		
Lane Util. Factor	0.95				0.95		0.97		
Frt	0.96				1.00		0.99		
Flt Protected	1.00				1.00		0.96		
Satd. Flow (prot)	3448				3578		3457		
Flt Permitted	1.00				0.95		0.96		
Satd. Flow (perm)	3448				3414		3457		
Volume (vph)	923	295	1	1	521	0	0	300	21
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	923	295	1	1	521	0	0	300	21
RTOR Reduction (vph)	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	1219		0	0	0	522	0	0	314
Turn Type					Perm		Perm		
Protected Phases	6				6	4	8		
Permitted Phases					6	4			
Actuated Green, G (s)	45.0				45.0		10.0		
Effective Green, g (s)	45.0				45.0		9.5		
Actuated g/C Ratio	0.60				0.60		0.13		
Clearance Time (s)	4.0				4.0		3.5		
Lane Grp Cap (vph)	2069				2048		438		
v/s Ratio Prot	c0.35						c0.09		
v/s Ratio Perm					0.15				
v/c Ratio	0.59				0.25		0.72		
Uniform Delay, d1	9.3				7.1		31.5		
Progression Factor	1.00				1.00		1.00		
Incremental Delay, d2	1.2				0.3		9.7		
Delay (s)	10.5				7.4		41.1		
Level of Service	B				A		D		
Approach Delay (s)	10.5				7.4		0.0	41.1	
Approach LOS	B				A		A	D	

**Intersection Summary**

HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0	4.0		4.0			4.0					
Lane Util. Factor		0.95	1.00		0.95			1.00					
Frt		1.00	0.85		1.00			1.00					
Flt Protected		1.00	1.00		1.00			0.95					
Satd. Flow (prot)		3579	1601		3579			1789					
Flt Permitted		1.00	1.00		1.00			0.76					
Satd. Flow (perm)		3579	1601		3579			1426					
Volume (vph)	0	599	349	0	497	0	6	0	0	0	0	0	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	0	599	349	0	497	0	6	0	0	0	0	0	
RTOR Reduction (vph)	0	0	180	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	0	599	169	0	497	0	0	6	0	0	0	0	
Turn Type	Perm	custom			custom		Perm			Perm			
Protected Phases		2	6					4				4	
Permitted Phases	2				2	2	4				4		
Actuated Green, G (s)		60.0	44.0		60.0			23.0					
Effective Green, g (s)		59.5	43.5		59.5			22.5					
Actuated g/C Ratio		0.66	0.48		0.66			0.25					
Clearance Time (s)		3.5	3.5		3.5			3.5					
Lane Grp Cap (vph)		2366	774		2366			357					
v/s Ratio Prot		c0.17	0.11										
v/s Ratio Perm					0.14			c0.00					
v/c Ratio		0.25	0.22		0.21			0.02					
Uniform Delay, d1		6.2	13.4		6.0			25.4					
Progression Factor		1.00	1.00		1.00			1.00					
Incremental Delay, d2		0.3	0.6		0.2			0.1					
Delay (s)		6.5	14.1		6.2			25.5					
Level of Service		A	B		A			C					
Approach Delay (s)		9.3			6.2			25.5			0.0		
Approach LOS		A			A			C			A		
<b>Intersection Summary</b>													
HCM Average Control Delay			8.3									HCM Level of Service	A
HCM Volume to Capacity ratio			0.19										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	8.0
Intersection Capacity Utilization			26.6%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↗			↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lane Util. Factor		1.00	0.88		1.00		0.94	1.00			0.95	1.00
Frt		1.00	0.85		1.00		1.00	1.00			1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1883	2818		1883		5046	1883			3579	1601
Flt Permitted		1.00	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)		1883	2818		1883		5046	1883			3579	1601
Volume (vph)	0	442	1083	0	20	0	256	14	0	0	87	15
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	442	1083	0	20	0	256	14	0	0	87	15
RTOR Reduction (vph)	0	0	421	0	0	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	442	662	0	20	0	256	14	0	0	87	5
Turn Type	Perm		pt+ov	Perm			Prot			Perm		Perm
Protected Phases		4	4 5		8		5	2		6		6
Permitted Phases	4			8						6		6
Actuated Green, G (s)		39.5	54.5		39.5		11.5	42.5			27.5	27.5
Effective Green, g (s)		40.0	55.0		40.0		11.0	42.0			27.0	27.0
Actuated g/C Ratio		0.44	0.61		0.44		0.12	0.47			0.30	0.30
Clearance Time (s)		4.5			4.5		3.5	3.5			3.5	3.5
Lane Grp Cap (vph)		837	1722		837		617	879			1074	480
v/s Ratio Prot		c0.23	c0.23		0.01		0.05	0.01			c0.02	
v/s Ratio Perm												0.00
v/c Ratio		0.53	0.38		0.02		0.41	0.02			0.08	0.01
Uniform Delay, d1		18.1	8.9		14.0		36.5	12.9			22.6	22.1
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		2.4	0.7		0.1		2.1	0.0			0.1	0.0
Delay (s)		20.5	9.5		14.1		38.6	12.9			22.7	22.1
Level of Service		C	A		B		D	B			C	C
Approach Delay (s)		12.7			14.1			37.2			22.7	
Approach LOS		B			B			D			C	

**Intersection Summary**

HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

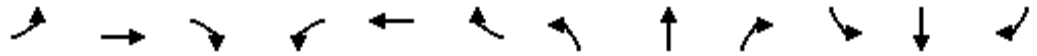
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕↕			↕↕	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	4.0
Lane Util. Factor		0.95			0.95			0.91			0.95	1.00
Frt		1.00			1.00			0.98			1.00	0.85
Flt Protected		1.00			1.00			1.00			1.00	1.00
Satd. Flow (prot)		3579			3579			5029			3579	1601
Flt Permitted		1.00			1.00			0.94			1.00	1.00
Satd. Flow (perm)		3579			3579			4724			3579	1601
Volume (vph)	0	1354	0	0	744	0	3	543	92	0	85	307
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1354	0	0	744	0	3	543	92	0	85	307
RTOR Reduction (vph)	0	0	0	0	0	0	0	26	0	0	0	208
Lane Group Flow (vph)	0	1354	0	0	744	0	0	612	0	0	85	99
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)		61.0			61.0			19.0			19.0	19.0
Effective Green, g (s)		62.0			62.0			20.0			20.0	20.0
Actuated g/C Ratio		0.69			0.69			0.22			0.22	0.22
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Lane Grp Cap (vph)		2466			2466			1050			795	356
v/s Ratio Prot		c0.38			0.21						0.02	
v/s Ratio Perm								c0.13				0.06
v/c Ratio		0.55			0.30			0.58			0.11	0.28
Uniform Delay, d1		7.0			5.5			31.3			27.9	29.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.9			0.3			2.4			0.3	1.9
Delay (s)		7.9			5.8			33.6			28.2	30.9
Level of Service		A			A			C			C	C
Approach Delay (s)		7.9			5.8			33.6			30.3	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑	↑↑		↑		↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		0.91			1.00	0.88		1.00		0.95	0.95	
Frt		0.97			1.00	0.85		0.98		1.00	1.00	
Flt Protected		1.00			1.00	1.00		0.96		0.95	0.97	
Satd. Flow (prot)		4969			1883	2818		1768		1700	1734	
Flt Permitted		1.00			1.00	1.00		0.56		0.95	0.97	
Satd. Flow (perm)		4969			1883	2818		1028		1700	1734	
Volume (vph)	0	680	197	0	296	467	73	0	14	548	159	12
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	680	197	0	296	467	73	0	14	548	159	12
RTOR Reduction (vph)	0	58	0	0	0	130	0	7	0	0	2	0
Lane Group Flow (vph)	0	819	0	0	296	337	0	80	0	352	365	0
Turn Type		Perm			pt+ov	Perm				Split		
Protected Phases		4			4	4 2		6		2	2	
Permitted Phases		4					6					
Actuated Green, G (s)		17.0			17.0	65.5		17.5		45.0	45.0	
Effective Green, g (s)		16.5			16.5	65.0		17.0		44.5	44.5	
Actuated g/C Ratio		0.18			0.18	0.72		0.19		0.49	0.49	
Clearance Time (s)		3.5			3.5			3.5		3.5	3.5	
Lane Grp Cap (vph)		911			345	2035		194		841	857	
v/s Ratio Prot		c0.16			0.16	0.12				0.21	c0.21	
v/s Ratio Perm								c0.08				
v/c Ratio		0.90			0.86	0.17		0.41		0.42	0.43	
Uniform Delay, d1		35.9			35.6	3.9		32.1		14.5	14.6	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		13.6			23.1	0.2		6.3		1.5	1.6	
Delay (s)		49.5			58.8	4.1		38.4		16.0	16.1	
Level of Service		D			E	A		D		B	B	
Approach Delay (s)		49.5			25.3			38.4			16.1	
Approach LOS		D			C			D			B	

Intersection Summary			
HCM Average Control Delay	31.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



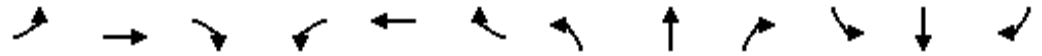
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	0	0	0	7
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	7	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	7	0			0	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1014	1085			1623	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	0	0	7			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1623			
Volume to Capacity	0.00	0.00	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service	A	
Analysis Period (min)			15			



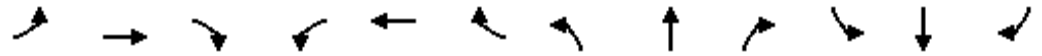
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	19	78	0	3	201	0	0	10	3	230	19	21
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	19	78	0	3	201	0	0	10	3	230	19	21

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	97	204	13	270
Volume Left (vph)	19	3	0	230
Volume Right (vph)	0	0	3	21
Hadj (s)	0.07	0.04	-0.10	0.16
Departure Headway (s)	5.0	4.8	4.9	4.8
Degree Utilization, x	0.13	0.27	0.02	0.36
Capacity (veh/h)	671	706	662	706
Control Delay (s)	8.7	9.6	8.0	10.6
Approach Delay (s)	8.7	9.6	8.0	10.6
Approach LOS	A	A	A	B

Intersection Summary			
Delay		9.9	
HCM Level of Service		A	
Intersection Capacity Utilization	44.4%		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		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	316	153	0	12	0	0	20	0	0	66	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	316	153	0	12	0	0	20	0	0	66	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	92	86	66	397	86	20	66			20		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	92	86	66	397	86	20	66			20		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	61	85	100	99	100	100			100		
cM capacity (veh/h)	882	804	998	331	804	1058	1536			1596		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	469	12	20	66								
Volume Left	0	0	0	0								
Volume Right	153	0	0	0								
cSH	858	804	1536	1596								
Volume to Capacity	0.55	0.01	0.00	0.00								
Queue Length 95th (m)	25.7	0.3	0.0	0.0								
Control Delay (s)	14.1	9.5	0.0	0.0								
Lane LOS	B	A										
Approach Delay (s)	14.1	9.5	0.0	0.0								
Approach LOS	B	A										
<b>Intersection Summary</b>												
Average Delay			11.9									
Intersection Capacity Utilization			36.1%		ICU Level of Service					A		
Analysis Period (min)			15									

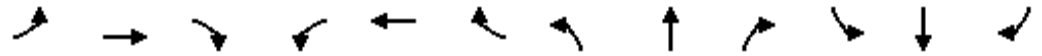


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	3	478	0	0	23	0	0	1	0	0	0	24
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	478	0	0	23	0	0	1	0	0	0	24

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	481	23	1	24
Volume Left (vph)	3	0	0	0
Volume Right (vph)	0	0	0	24
Hadj (s)	0.04	0.03	0.03	-0.57
Departure Headway (s)	4.0	4.4	5.0	4.4
Degree Utilization, x	0.54	0.03	0.00	0.03
Capacity (veh/h)	888	777	641	726
Control Delay (s)	11.6	7.6	8.1	7.5
Approach Delay (s)	11.6	7.6	8.1	7.5
Approach LOS	B	A	A	A

Intersection Summary			
Delay		11.2	
HCM Level of Service		B	
Intersection Capacity Utilization	37.5%		ICU Level of Service A
Analysis Period (min)		15	

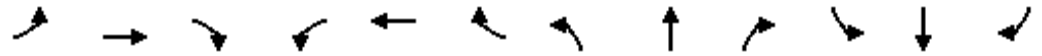




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	136	6	0	193	0	3	0	0	0	137	33
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	136	6	0	193	0	3	0	0	0	137	33

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	142	193	3	170
Volume Left (vph)	0	0	3	0
Volume Right (vph)	6	0	0	33
Hadj (s)	0.01	0.03	0.23	-0.08
Departure Headway (s)	4.6	4.5	5.1	4.6
Degree Utilization, x	0.18	0.24	0.00	0.22
Capacity (veh/h)	754	756	636	728
Control Delay (s)	8.6	9.0	8.2	8.9
Approach Delay (s)	8.6	9.0	8.2	8.9
Approach LOS	A	A	A	A

















Intersection Summary			
Delay		8.8	
HCM Level of Service		A	
Intersection Capacity Utilization	26.0%		ICU Level of Service A
Analysis Period (min)		15	

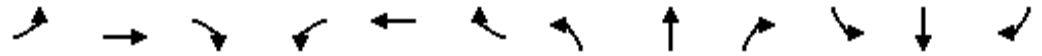


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	43	0	165	1	145	218	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	43	0	165	1	145	218	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	43	166	363
Volume Left (vph)	0	0	0	145
Volume Right (vph)	0	43	1	0
Hadj (s)	0.00	-0.57	0.03	0.11
Departure Headway (s)	5.1	4.5	4.4	4.3
Degree Utilization, x	0.00	0.05	0.20	0.43
Capacity (veh/h)	633	710	793	819
Control Delay (s)	8.1	7.7	8.5	10.5
Approach Delay (s)	0.0	7.7	8.5	10.5
Approach LOS	A	A	A	B

Intersection Summary			
Delay		9.7	
HCM Level of Service		A	
Intersection Capacity Utilization	41.6%		ICU Level of Service A
Analysis Period (min)		15	

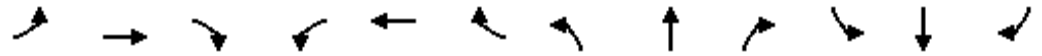
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	216	95	102	204	24	0	39	4	309	33	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1	216	95	102	204	24	0	39	4	309	33	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	312	330	43	342								
Volume Left (vph)	1	102	0	309								
Volume Right (vph)	95	24	4	0								
Hadj (s)	-0.15	0.05	-0.02	0.21								
Departure Headway (s)	5.6	5.7	6.5	6.0								
Degree Utilization, x	0.48	0.52	0.08	0.57								
Capacity (veh/h)	605	594	440	564								
Control Delay (s)	13.6	14.8	10.0	16.6								
Approach Delay (s)	13.6	14.8	10.0	16.6								
Approach LOS	B	B	B	C								
Intersection Summary												
Delay			14.9									
HCM Level of Service			B									
Intersection Capacity Utilization			70.6%	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		Stop			Stop			Stop			Stop	
Volume (vph)	0	15	314	2	17	0	25	30	9	3	26	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	15	314	2	17	0	25	30	9	3	26	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	329	19	64	29
Volume Left (vph)	0	2	25	3
Volume Right (vph)	314	0	9	0
Hadj (s)	-0.54	0.06	0.03	0.05
Departure Headway (s)	3.6	4.5	4.6	4.7
Degree Utilization, x	0.33	0.02	0.08	0.04
Capacity (veh/h)	974	762	718	699
Control Delay (s)	8.4	7.6	8.0	7.9
Approach Delay (s)	8.4	7.6	8.0	7.9
Approach LOS	A	A	A	A

















Intersection Summary			
Delay		8.3	
HCM Level of Service		A	
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)		15	

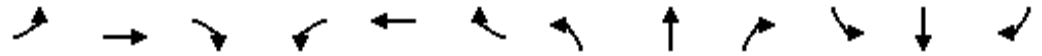


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	1	145	3	0	2	43	491	0	16	408	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1	1	145	3	0	2	43	491	0	16	408	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	147	5	534	424
Volume Left (vph)	1	3	43	16
Volume Right (vph)	145	2	0	0
Hadj (s)	-0.56	-0.09	0.05	0.04
Departure Headway (s)	5.6	6.5	5.0	5.1
Degree Utilization, x	0.23	0.01	0.74	0.60
Capacity (veh/h)	570	462	707	688
Control Delay (s)	10.3	9.6	20.5	15.4
Approach Delay (s)	10.3	9.6	20.5	15.4
Approach LOS	B	A	C	C

Intersection Summary			
Delay		17.2	
HCM Level of Service		C	
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)		15	

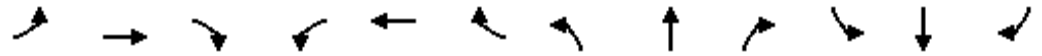
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	14	16	2	0	1	6	532	3	3	552	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	2	14	16	2	0	1	6	532	3	3	552	1
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	32	3	541	556								
Volume Left (vph)	2	2	6	3								
Volume Right (vph)	16	1	3	1								
Hadj (s)	-0.25	-0.03	0.03	0.03								
Departure Headway (s)	6.1	6.4	4.7	4.6								
Degree Utilization, x	0.05	0.01	0.70	0.72								
Capacity (veh/h)	526	490	754	765								
Control Delay (s)	9.4	9.4	17.8	18.5								
Approach Delay (s)	9.4	9.4	17.8	18.5								
Approach LOS	A	A	C	C								
Intersection Summary												
Delay			17.9									
HCM Level of Service			C									
Intersection Capacity Utilization			42.3%	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		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	0	0	3	0	0	144	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	0	0	3	0	0	144	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	0	3	144
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.00	0.00	0.03	0.03
Departure Headway (s)	4.2	4.2	4.1	3.9
Degree Utilization, x	0.00	0.00	0.00	0.16
Capacity (veh/h)	831	831	867	910
Control Delay (s)	7.2	7.2	7.1	7.7
Approach Delay (s)	0.0	0.0	7.1	7.7
Approach LOS	A	A	A	A

Intersection Summary			
Delay		7.7	
HCM Level of Service		A	
Intersection Capacity Utilization	10.9%		ICU Level of Service A
Analysis Period (min)		15	



















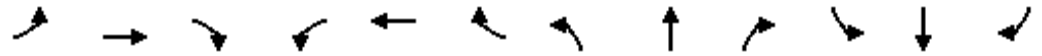
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	13	0	0	0	0	0	152	0	0	211	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	13	0	0	0	0	0	152	0	0	211	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	13	0	152	211
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.00	0.03	0.03
Departure Headway (s)	4.7	4.7	4.2	4.1
Degree Utilization, x	0.02	0.00	0.18	0.24
Capacity (veh/h)	699	721	845	865
Control Delay (s)	7.8	7.7	8.1	8.4
Approach Delay (s)	7.8	0.0	8.1	8.4
Approach LOS	A	A	A	A

Intersection Summary			
Delay		8.2	
HCM Level of Service		A	
Intersection Capacity Utilization	21.1%		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)	0	0	0	0	0	1	0	0	0	17	127	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	1	0	0	0	17	127	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	1	0	144								
Volume Left (vph)	0	0	0	17								
Volume Right (vph)	0	1	0	0								
Hadj (s)	0.00	-0.57	0.00	0.06								
Departure Headway (s)	4.2	3.6	4.0	4.0								
Degree Utilization, x	0.00	0.00	0.00	0.16								
Capacity (veh/h)	830	946	900	904								
Control Delay (s)	7.2	6.6	7.0	7.7								
Approach Delay (s)	0.0	6.6	0.0	7.7								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				7.7								
HCM Level of Service				A								
Intersection Capacity Utilization				17.6%	ICU Level of Service							A
Analysis Period (min)				15								






































Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	6	0	22	0	3	18	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	6	0	22	0	3	18	0

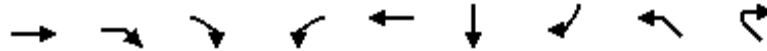
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	6	22	21
Volume Left (vph)	0	0	0	3
Volume Right (vph)	0	6	0	0
Hadj (s)	0.00	-0.57	0.03	0.06
Departure Headway (s)	4.0	3.4	4.0	4.0
Degree Utilization, x	0.00	0.01	0.02	0.02
Capacity (veh/h)	900	1032	902	894
Control Delay (s)	7.0	6.4	7.1	7.1
Approach Delay (s)	0.0	6.4	7.1	7.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay		7.0	
HCM Level of Service		A	
Intersection Capacity Utilization	13.5%		ICU Level of Service A
Analysis Period (min)		15	

**ALTERNATIVE 1**  
**(No Build) PM**  
**Additional Intersections**

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑		↑	↑		↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.91			0.91		1.00	1.00		1.00	1.00	
Frt		0.97			1.00		1.00	0.99		1.00	0.95	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4964			5131		1789	1864		1789	1796	
Flt Permitted		1.00			1.00		0.70	1.00		0.46	1.00	
Satd. Flow (perm)		4964			5131		1316	1864		860	1796	
Volume (vph)	0	1510	454	0	1914	28	224	219	16	34	62	28
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1510	454	0	1914	28	224	219	16	34	62	28
RTOR Reduction (vph)	0	60	0	0	2	0	0	3	0	0	15	0
Lane Group Flow (vph)	0	1904	0	0	1940	0	224	232	0	34	75	0
Turn Type							Perm			Perm		
Protected Phases		2			6			4			8	
Permitted Phases							4				8	
Actuated Green, G (s)		58.5			58.5		23.0	23.0		23.0	23.0	
Effective Green, g (s)		58.5			58.5		23.5	23.5		23.5	23.5	
Actuated g/C Ratio		0.65			0.65		0.26	0.26		0.26	0.26	
Clearance Time (s)		4.0			4.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		3227			3335		344	487		225	469	
v/s Ratio Prot		c0.38			0.38			0.12			0.04	
v/s Ratio Perm							c0.17			0.04		
v/c Ratio		0.59			0.58		0.65	0.48		0.15	0.16	
Uniform Delay, d1		8.9			8.9		29.6	28.1		25.6	25.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8			0.7		9.2	3.3		1.4	0.7	
Delay (s)		9.7			9.6		38.8	31.4		27.0	26.4	
Level of Service		A			A		D	C		C	C	
Approach Delay (s)		9.7			9.6			35.0			26.5	
Approach LOS		A			A			D			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			12.7				HCM Level of Service			B		
HCM Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			66.7%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												





















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						  	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.91			0.91			1.00			1.00	
Frt		0.97			0.99			0.99			1.00	
Flt Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		4983			5095			1860			1875	
Flt Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		4983			5095			1860			1875	
Volume (vph)	0	1126	293	0	1924	124	0	328	29	0	320	11
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1126	293	0	1924	124	0	328	29	0	320	11
RTOR Reduction (vph)	0	52	0	0	8	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	1367	0	0	2040	0	0	354	0	0	330	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		54.0			54.0			27.0			27.0	
Effective Green, g (s)		54.0			54.0			28.0			28.0	
Actuated g/C Ratio		0.60			0.60			0.31			0.31	
Clearance Time (s)		4.0			4.0			5.0			5.0	
Lane Grp Cap (vph)		2990			3057			579			583	
v/s Ratio Prot		0.27			0.40			0.19			0.18	
v/s Ratio Perm												
v/c Ratio		0.46			0.67			0.61			0.57	
Uniform Delay, d1		9.9			12.0			26.4			25.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.5			1.2			4.7			3.9	
Delay (s)		10.4			13.2			31.1			29.9	
Level of Service		B			B			C			C	
Approach Delay (s)		10.4			13.2			31.1			29.9	
Approach LOS		B			B			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			15.1			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			65.6%			ICU Level of Service				C		
Analysis Period (min)			15									
c	Critical Lane Group											



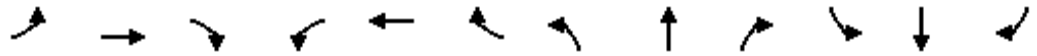
Movement	EBT	EBR	EBR2	WBL	WBT	SBT	SBR	NWL	NWR2
Lane Configurations	↔				↔		↔	↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0				4.0		4.0		
Lane Util. Factor	0.95				0.95		0.97		
Frt	0.96				1.00		1.00		
Flt Protected	1.00				1.00		0.95		
Satd. Flow (prot)	3432				3577		3476		
Flt Permitted	1.00				0.94		0.95		
Satd. Flow (perm)	3432				3380		3476		
Volume (vph)	746	277	2	10	1003	0	0	252	3
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	746	277	2	10	1003	0	0	252	3
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	1025		0	0	0	1013		0	0
Turn Type					Perm		Perm		
Protected Phases	6				6		4		8
Permitted Phases			6				4		
Actuated Green, G (s)	45.0				45.0		10.0		
Effective Green, g (s)	45.0				45.0		9.5		
Actuated g/C Ratio	0.60				0.60		0.13		
Clearance Time (s)	4.0				4.0		3.5		
Lane Grp Cap (vph)	2059				2028		440		
v/s Ratio Prot	0.30						c0.07		
v/s Ratio Perm					c0.30				
v/c Ratio	0.50				0.50		0.58		
Uniform Delay, d1	8.6				8.6		30.9		
Progression Factor	1.00				1.00		1.00		
Incremental Delay, d2	0.9				0.9		5.4		
Delay (s)	9.4				9.5		36.3		
Level of Service	A				A		D		
Approach Delay (s)	9.4				9.5		0.0		36.3
Approach LOS	A				A		A		D

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.0				
Lane Util. Factor		0.95	1.00		0.95			1.00				
Frt		1.00	0.85		1.00			1.00				
Flt Protected		1.00	1.00		1.00			0.95				
Satd. Flow (prot)		3579	1601		3579			1789				
Flt Permitted		1.00	1.00		1.00			0.76				
Satd. Flow (perm)		3579	1601		3579			1426				
Volume (vph)	0	566	164	0	620	0	399	0	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	566	164	0	620	0	399	0	0	0	0	0
RTOR Reduction (vph)	0	0	85	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	566	79	0	620	0	0	399	0	0	0	0
Turn Type	Perm	custom			custom		Perm			Perm		
Protected Phases		2	6					4				4
Permitted Phases	2				2	2	4				4	
Actuated Green, G (s)		60.0	44.0		60.0			23.0				
Effective Green, g (s)		59.5	43.5		59.5			22.5				
Actuated g/C Ratio		0.66	0.48		0.66			0.25				
Clearance Time (s)		3.5	3.5		3.5			3.5				
Lane Grp Cap (vph)		2366	774		2366			357				
v/s Ratio Prot		0.16	0.05									
v/s Ratio Perm					c0.17			c0.28				
v/c Ratio		0.24	0.10		0.26			1.12				
Uniform Delay, d1		6.1	12.6		6.3			33.8				
Progression Factor		1.00	1.00		1.00			1.00				
Incremental Delay, d2		0.2	0.3		0.3			83.4				
Delay (s)		6.4	12.9		6.5			117.1				
Level of Service		A	B		A			F				
Approach Delay (s)		7.8			6.5			117.1			0.0	
Approach LOS		A			A			F			A	
<b>Intersection Summary</b>												
HCM Average Control Delay		32.3			HCM Level of Service			C				
HCM Volume to Capacity ratio		0.50										
Actuated Cycle Length (s)		90.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		45.9%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group

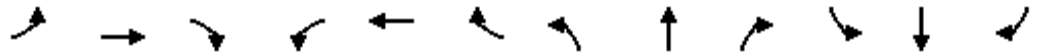


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗↘		↕		↗↘	↕			↕↗	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lane Util. Factor		1.00	0.88		1.00		0.94	1.00			0.95	1.00
Frt		1.00	0.85		1.00		1.00	1.00			1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1883	2818		1883		5046	1883			3579	1601
Flt Permitted		1.00	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)		1883	2818		1883		5046	1883			3579	1601
Volume (vph)	0	220	1161	0	201	0	922	95	0	0	198	55
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	220	1161	0	201	0	922	95	0	0	198	55
RTOR Reduction (vph)	0	0	813	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	220	348	0	201	0	922	95	0	0	198	16
Turn Type	Perm		Perm	Perm			Prot			Perm		Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8						6		6
Actuated Green, G (s)		26.5	26.5		26.5		25.0	55.5			26.5	26.5
Effective Green, g (s)		27.0	27.0		27.0		25.0	55.0			26.0	26.0
Actuated g/C Ratio		0.30	0.30		0.30		0.28	0.61			0.29	0.29
Clearance Time (s)		4.5	4.5		4.5		4.0	3.5			3.5	3.5
Lane Grp Cap (vph)		565	845		565		1402	1151			1034	463
v/s Ratio Prot		0.12			0.11		c0.18	0.05			c0.06	
v/s Ratio Perm			c0.12									0.01
v/c Ratio		0.39	0.41		0.36		0.66	0.08			0.19	0.03
Uniform Delay, d1		25.0	25.2		24.7		28.7	7.2			24.1	23.0
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		2.0	1.5		1.7		2.4	0.1			0.4	0.1
Delay (s)		27.0	26.6		26.4		31.1	7.3			24.5	23.1
Level of Service		C	C		C		C	A			C	C
Approach Delay (s)		26.7			26.4			28.9			24.2	
Approach LOS		C			C			C			C	

Intersection Summary		
HCM Average Control Delay	27.3	HCM Level of Service C
HCM Volume to Capacity ratio	0.42	
Actuated Cycle Length (s)	90.0	Sum of lost time (s) 12.0
Intersection Capacity Utilization	66.7%	ICU Level of Service C
Analysis Period (min)	15	

c Critical Lane Group





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕↕			↕↕	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	4.0
Lane Util. Factor		0.95			0.95			0.91			0.95	1.00
Frt		1.00			1.00			0.94			1.00	0.85
Flt Protected		0.99			1.00			1.00			1.00	1.00
Satd. Flow (prot)		3551			3579			4835			3579	1601
Flt Permitted		0.51			1.00			1.00			1.00	1.00
Satd. Flow (perm)		1833			3579			4835			3579	1601
Volume (vph)	186	1003	0	0	1420	0	0	220	145	0	690	493
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	186	1003	0	0	1420	0	0	220	145	0	690	493
RTOR Reduction (vph)	0	0	0	0	0	0	0	103	0	0	0	42
Lane Group Flow (vph)	0	1189	0	0	1420	0	0	262	0	0	690	451
Turn Type	Perm				Perm				Perm		Perm	
Protected Phases		4			4			2			2	
Permitted Phases	4						2			2		2
Actuated Green, G (s)		57.0			57.0			23.0			23.0	23.0
Effective Green, g (s)		58.0			58.0			24.0			24.0	24.0
Actuated g/C Ratio		0.64			0.64			0.27			0.27	0.27
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Lane Grp Cap (vph)		1181			2306			1289			954	427
v/s Ratio Prot					0.40			0.05			0.19	
v/s Ratio Perm		c0.65										c0.28
v/c Ratio		1.21dl			0.62			0.20			0.72	1.06
Uniform Delay, d1		16.0			9.4			25.6			30.0	33.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		27.8			1.2			0.4			4.8	59.3
Delay (s)		43.8			10.7			25.9			34.7	92.3
Level of Service		D			B			C			C	F
Approach Delay (s)		43.8			10.7			25.9			58.7	
Approach LOS		D			B			C			E	

**Intersection Summary**

HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑	↑↑		↑		↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		0.91			1.00	0.88		1.00		0.95	0.95	
Frt		0.98			1.00	0.85		0.99		1.00	0.99	
Flt Protected		1.00			1.00	1.00		0.95		0.95	0.98	
Satd. Flow (prot)		5015			1883	2818		1787		1700	1746	
Flt Permitted		1.00			1.00	1.00		0.95		0.95	0.98	
Satd. Flow (perm)		5015			1883	2818		1787		1700	1746	
Volume (vph)	0	550	108	0	764	1023	208	0	9	471	230	22
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	550	108	0	764	1023	208	0	9	471	230	22
RTOR Reduction (vph)	0	33	0	0	0	284	0	2	0	0	3	0
Lane Group Flow (vph)	0	625	0	0	764	739	0	215	0	354	366	0
Turn Type					pt+ov	Split				Split		
Protected Phases		4			4	4 2	6	6		2	2	
Permitted Phases												
Actuated Green, G (s)		28.0			28.0	65.5		17.5		34.0	34.0	
Effective Green, g (s)		27.5			27.5	65.0		17.0		33.5	33.5	
Actuated g/C Ratio		0.31			0.31	0.72		0.19		0.37	0.37	
Clearance Time (s)		3.5			3.5			3.5		3.5	3.5	
Lane Grp Cap (vph)		1532			575	2035		338		633	650	
v/s Ratio Prot		0.12			c0.41	0.26		c0.12		0.21	c0.21	
v/s Ratio Perm												
v/c Ratio		0.41			1.33	0.36		0.64		0.56	0.56	
Uniform Delay, d1		24.8			31.2	4.7		33.7		22.4	22.4	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.8			159.6	0.5		8.9		3.5	3.5	
Delay (s)		25.6			190.9	5.2		42.5		25.9	26.0	
Level of Service		C			F	A		D		C	C	
Approach Delay (s)		25.6			84.6			42.5			26.0	
Approach LOS		C			F			D			C	

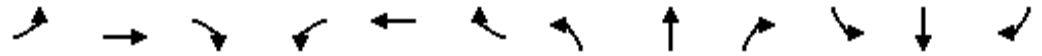
**Intersection Summary**

HCM Average Control Delay	57.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



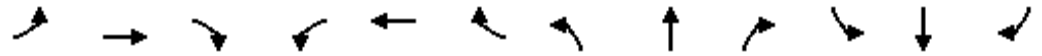
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶		↷			↷
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	1	81	4	0	0	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1	81	4	0	0	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	6	4			4	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	6	4			4	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	92			100	
cM capacity (veh/h)	1015	1080			1618	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	82	4	2			
Volume Left	1	0	0			
Volume Right	81	0	0			
cSH	1079	1700	1618			
Volume to Capacity	0.08	0.00	0.00			
Queue Length 95th (m)	1.9	0.0	0.0			
Control Delay (s)	8.6	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.6	0.0	0.0			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			8.0			
Intersection Capacity Utilization		15.1%		ICU Level of Service		A
Analysis Period (min)			15			



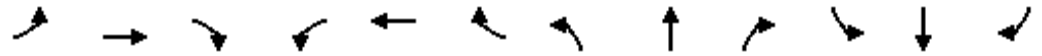
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	29	53	1	2	338	30	0	22	6	142	15	23
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	29	53	1	2	338	30	0	22	6	142	15	23

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	83	370	28	180
Volume Left (vph)	29	2	0	142
Volume Right (vph)	1	30	6	23
Hadj (s)	0.10	-0.01	-0.09	0.12
Departure Headway (s)	5.0	4.6	5.2	5.1
Degree Utilization, x	0.12	0.47	0.04	0.26
Capacity (veh/h)	664	758	618	646
Control Delay (s)	8.7	11.5	8.4	9.9
Approach Delay (s)	8.7	11.5	8.4	9.9
Approach LOS	A	B	A	A

Intersection Summary			
Delay		10.6	
HCM Level of Service		B	
Intersection Capacity Utilization	49.2%		ICU Level of Service A
Analysis Period (min)		15	



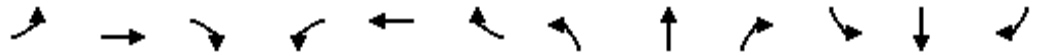
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	197	93	0	239	0	1	46	0	0	49	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	197	93	0	239	0	1	46	0	0	49	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	216	97	49	288	97	46	49			46		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	216	97	49	288	97	46	49			46		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	75	91	100	70	100	100			100		
cM capacity (veh/h)	567	793	1020	487	793	1023	1558			1562		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	290	239	47	49								
Volume Left	0	0	1	0								
Volume Right	93	0	0	0								
cSH	853	793	1558	1562								
Volume to Capacity	0.34	0.30	0.00	0.00								
Queue Length 95th (m)	11.5	9.7	0.0	0.0								
Control Delay (s)	11.4	11.5	0.2	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	11.4	11.5	0.2	0.0								
Approach LOS	B	B										
<b>Intersection Summary</b>												
Average Delay			9.7									
Intersection Capacity Utilization			26.0%		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		Stop			Stop			Stop			Stop	
Volume (vph)	12	307	0	0	254	1	0	5	0	0	0	5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	12	307	0	0	254	1	0	5	0	0	0	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	319	255	5	5
Volume Left (vph)	12	0	0	0
Volume Right (vph)	0	1	0	5
Hadj (s)	0.04	0.03	0.03	-0.57
Departure Headway (s)	4.2	4.3	5.2	4.6
Degree Utilization, x	0.37	0.30	0.01	0.01
Capacity (veh/h)	841	822	620	689
Control Delay (s)	9.7	9.1	8.2	7.6
Approach Delay (s)	9.7	9.1	8.2	7.6
Approach LOS	A	A	A	A

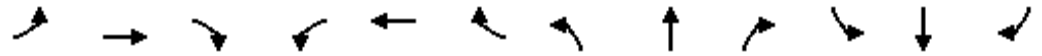
Intersection Summary			
Delay		9.4	
HCM Level of Service		A	
Intersection Capacity Utilization	35.9%		ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	174	21	0	167	0	10	1	0	4	23	49
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1	174	21	0	167	0	10	1	0	4	23	49

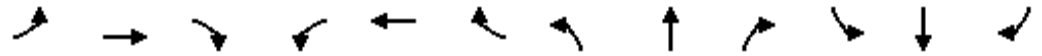
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	196	167	11	76
Volume Left (vph)	1	0	10	4
Volume Right (vph)	21	0	0	49
Hadj (s)	-0.03	0.03	0.22	-0.34
Departure Headway (s)	4.3	4.3	5.0	4.4
Degree Utilization, x	0.23	0.20	0.02	0.09
Capacity (veh/h)	823	796	657	752
Control Delay (s)	8.5	8.4	8.1	7.8
Approach Delay (s)	8.5	8.4	8.1	7.8
Approach LOS	A	A	A	A

Intersection Summary			
Delay		8.4	
HCM Level of Service		A	
Intersection Capacity Utilization	22.6%		ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	1	0	61	0	273	0	31	298	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	1	0	61	0	273	0	31	298	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	62	273	329								
Volume Left (vph)	0	1	0	31								
Volume Right (vph)	0	61	0	0								
Hadj (s)	0.00	-0.55	0.03	0.05								
Departure Headway (s)	5.3	4.7	4.4	4.4								
Degree Utilization, x	0.00	0.08	0.34	0.40								
Capacity (veh/h)	599	679	789	795								
Control Delay (s)	8.3	8.1	9.7	10.3								
Approach Delay (s)	0.0	8.1	9.7	10.3								
Approach LOS	A	A	A	B								
Intersection Summary												
Delay			9.8									
HCM Level of Service			A									
Intersection Capacity Utilization			45.6%	ICU Level of Service	A							
Analysis Period (min)			15									

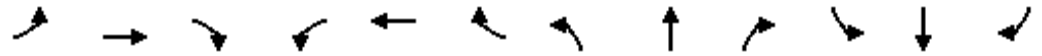




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	161	39	53	255	189	116	70	61	145	33	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	2	161	39	53	255	189	116	70	61	145	33	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	202	497	247	178
Volume Left (vph)	2	53	116	145
Volume Right (vph)	39	189	61	0
Hadj (s)	-0.08	-0.17	-0.02	0.20
Departure Headway (s)	6.2	5.6	6.4	6.8
Degree Utilization, x	0.35	0.77	0.44	0.33
Capacity (veh/h)	514	626	505	470
Control Delay (s)	12.5	24.6	14.3	13.1
Approach Delay (s)	12.5	24.6	14.3	13.1
Approach LOS	B	C	B	B

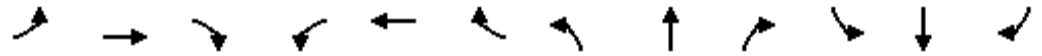
Intersection Summary			
Delay		18.3	
HCM Level of Service		C	
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)		15	



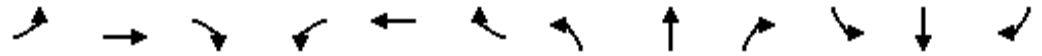
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	68	143	3	104	0	171	86	4	0	32	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	68	143	3	104	0	171	86	4	0	32	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	211	107	261	32
Volume Left (vph)	0	3	171	0
Volume Right (vph)	143	0	4	0
Hadj (s)	-0.37	0.04	0.16	0.03
Departure Headway (s)	4.4	5.0	4.9	5.1
Degree Utilization, x	0.26	0.15	0.35	0.04
Capacity (veh/h)	757	671	704	644
Control Delay (s)	9.0	8.8	10.5	8.3
Approach Delay (s)	9.0	8.8	10.5	8.3
Approach LOS	A	A	B	A

Intersection Summary			
Delay		9.5	
HCM Level of Service		A	
Intersection Capacity Utilization	39.9%	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		Stop			Stop			Stop			Stop	
Volume (vph)	1	0	30	4	5	2	57	456	0	0	515	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1	0	30	4	5	2	57	456	0	0	515	1
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	31	11	513	516								
Volume Left (vph)	1	4	57	0								
Volume Right (vph)	30	2	0	1								
Hadj (s)	-0.54	0.00	0.06	0.03								
Departure Headway (s)	5.6	6.2	4.6	4.6								
Degree Utilization, x	0.05	0.02	0.66	0.66								
Capacity (veh/h)	546	492	753	764								
Control Delay (s)	8.9	9.4	16.3	16.2								
Approach Delay (s)	8.9	9.4	16.3	16.2								
Approach LOS	A	A	C	C								
Intersection Summary												
Delay			16.0									
HCM Level of Service			C									
Intersection Capacity Utilization			67.6%	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		Stop			Stop			Stop			Stop	
Volume (vph)	5	3	9	3	5	20	8	488	3	0	546	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	3	9	3	5	20	8	488	3	0	546	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	17	28	499	549
Volume Left (vph)	5	3	8	0
Volume Right (vph)	9	20	3	3
Hadj (s)	-0.22	-0.37	0.03	0.03
Departure Headway (s)	6.1	5.9	4.7	4.6
Degree Utilization, x	0.03	0.05	0.65	0.71
Capacity (veh/h)	515	528	757	766
Control Delay (s)	9.3	9.2	15.9	18.0
Approach Delay (s)	9.3	9.2	15.9	18.0
Approach LOS	A	A	C	C

















Intersection Summary			
Delay		16.7	
HCM Level of Service		C	
Intersection Capacity Utilization	42.3%		ICU Level of Service A
Analysis Period (min)		15	



















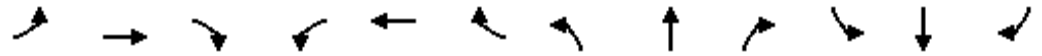
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	0	0	11	0	0	43	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	0	0	11	0	0	43	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	0	11	43
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.00	0.00	0.03	0.03
Departure Headway (s)	4.0	4.0	4.0	3.9
Degree Utilization, x	0.00	0.00	0.01	0.05
Capacity (veh/h)	888	888	901	907
Control Delay (s)	7.0	7.0	7.0	7.1
Approach Delay (s)	0.0	0.0	7.0	7.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay		7.1	
HCM Level of Service		A	
Intersection Capacity Utilization	6.7%		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)	0	1	5	0	1	0	0	261	2	1	284	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	1	5	0	1	0	0	261	2	1	284	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	6	1	263	285								
Volume Left (vph)	0	0	0	1								
Volume Right (vph)	5	0	2	0								
Hadj (s)	-0.47	0.03	0.03	0.03								
Departure Headway (s)	4.6	5.1	4.2	4.2								
Degree Utilization, x	0.01	0.00	0.31	0.33								
Capacity (veh/h)	690	625	836	836								
Control Delay (s)	7.6	8.1	9.1	9.3								
Approach Delay (s)	7.6	8.1	9.1	9.3								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			9.2									
HCM Level of Service			A									
Intersection Capacity Utilization			25.7%	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)	0	0	0	0	0	4	0	6	0	10	32	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	4	0	6	0	10	32	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	4	6	42								
Volume Left (vph)	0	0	0	10								
Volume Right (vph)	0	4	0	0								
Hadj (s)	0.00	-0.57	0.03	0.08								
Departure Headway (s)	4.0	3.4	4.0	4.0								
Degree Utilization, x	0.00	0.00	0.01	0.05								
Capacity (veh/h)	900	1028	898	895								
Control Delay (s)	7.0	6.4	7.0	7.2								
Approach Delay (s)	0.0	6.4	7.0	7.2								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.1									
HCM Level of Service			A									
Intersection Capacity Utilization			18.9%	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		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	82	40	0	36	0	11	27	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	82	40	0	36	0	11	27	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	122	36	39
Volume Left (vph)	0	0	0	11
Volume Right (vph)	0	40	0	1
Hadj (s)	0.00	-0.16	0.03	0.08
Departure Headway (s)	4.2	3.9	4.2	4.3
Degree Utilization, x	0.00	0.13	0.04	0.05
Capacity (veh/h)	843	902	816	815
Control Delay (s)	7.2	7.5	7.4	7.5
Approach Delay (s)	0.0	7.5	7.4	7.5
Approach LOS	A	A	A	A

Intersection Summary			
Delay		7.5	
HCM Level of Service		A	
Intersection Capacity Utilization	22.2%		ICU Level of Service A
Analysis Period (min)		15	



**2030 ALTERNATIVE 5**  
**(Refined Presidio Parkway Alternative) AM**  
**Additional Intersections**

Refined Presidio Parkway Alternative  
 147: 101/Lombard & Divisadero

Timing Plan: AM  
 HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
<b>Lane Configurations</b>												
Volume (vph)	0	2003	320	0	1300	2	395	125	20	13	69	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.91			0.91		1.00	1.00		1.00	1.00	
Frt		0.98			1.00		1.00	0.98		1.00	0.92	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		5036			5141		1789	1844		1789	1740	
Flt Permitted		1.00			1.00		0.62	1.00		0.61	1.00	
Satd. Flow (perm)		5036			5141		1171	1844		1154	1740	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2003	320	0	1300	2	395	125	20	13	69	71
RTOR Reduction (vph)	0	24	0	0	0	0	0	7	0	0	41	0
Lane Group Flow (vph)	0	2299	0	0	1302	0	395	138	0	13	99	0
Turn Type							Perm			Perm		
Protected Phases		2			6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)		58.5			58.5		23.0	23.0		23.0	23.0	
Effective Green, g (s)		58.5			58.5		23.5	23.5		23.5	23.5	
Actuated g/C Ratio		0.65			0.65		0.26	0.26		0.26	0.26	
Clearance Time (s)		4.0			4.0		4.5	4.5		4.5	4.5	
Lane Grp Cap (vph)		3273			3342		306	481		301	454	
v/s Ratio Prot		c0.46			0.25			0.08			0.06	
v/s Ratio Perm							c0.34			0.01		
v/c Ratio		0.70			0.39		1.29	0.29		0.04	0.22	
Uniform Delay, d1		10.1			7.4		33.2	26.6		24.8	26.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.3			0.3		153.2	1.5		0.3	1.1	
Delay (s)		11.4			7.7		186.4	28.1		25.1	27.1	
Level of Service		B			A		F	C		C	C	
Approach Delay (s)		11.4			7.7			143.9			27.0	
Approach LOS		B			A			F			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			27.4			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			85.7%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Refined Presidio Parkway Alternative  
156: Lombard & Fillmore

Timing Plan: AM  
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1743	252	0	1152	35	134	220	7	48	194	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0			4.0	
Lane Util. Factor		0.91			0.91		1.00	1.00			1.00	
Frt		0.98			1.00		1.00	1.00			1.00	
Flt Protected		1.00			1.00		0.95	1.00			0.99	
Satd. Flow (prot)		5044			5119		1789	1875			1865	
Flt Permitted		1.00			1.00		0.51	1.00			0.90	
Satd. Flow (perm)		5044			5119		964	1875			1695	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1743	252	0	1152	35	134	220	7	48	194	0
RTOR Reduction (vph)	0	21	0	0	4	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	1974	0	0	1183	0	134	226	0	0	242	0
Turn Type	Perm		Perm		Perm		Perm		Perm			
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		54.0			54.0		27.0	27.0			27.0	
Effective Green, g (s)		54.0			54.0		28.0	28.0			28.0	
Actuated g/C Ratio		0.60			0.60		0.31	0.31			0.31	
Clearance Time (s)		4.0			4.0		5.0	5.0			5.0	
Lane Grp Cap (vph)		3026			3071		300	583			527	
v/s Ratio Prot		c0.39			0.23			0.12				
v/s Ratio Perm							0.14				c0.14	
v/c Ratio		0.65			0.39		0.45	0.39			0.46	
Uniform Delay, d1		11.8			9.4		24.8	24.3			24.9	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.1			0.4		4.8	1.9			2.9	
Delay (s)		12.9			9.7		29.6	26.2			27.8	
Level of Service		B			A		C	C			C	
Approach Delay (s)		12.9			9.7			27.5			27.8	
Approach LOS		B			A			C			C	
Intersection Summary												
HCM Average Control Delay			14.3				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)				8.0	
Intersection Capacity Utilization			74.2%				ICU Level of Service				D	
Analysis Period (min)			15									

c Critical Lane Group

Movement	EBT	EBR	EBR2	WBT	SBT	SBR	NWL
<b>Lane Configurations</b>							
Volume (vph)	885	307	2	453	0	0	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0			4.0
Lane Util. Factor	0.95			0.95			0.97
Frt	0.96			1.00			1.00
Flt Protected	1.00			1.00			0.95
Satd. Flow (prot)	3440			3579			3471
Flt Permitted	1.00			1.00			0.95
Satd. Flow (perm)	3440			3579			3471
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	885	307	2	453	0	0	255
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	1194	0	0	453	0	0	255
Turn Type						Perm	
Protected Phases	6			6	4		8
Permitted Phases						4	
Actuated Green, G (s)	45.0			45.0			10.0
Effective Green, g (s)	45.0			45.0			9.5
Actuated g/C Ratio	0.60			0.60			0.13
Clearance Time (s)	4.0			4.0			3.5
Lane Grp Cap (vph)	2064			2147			440
v/s Ratio Prot	c0.35			0.13			c0.07
v/s Ratio Perm							
v/c Ratio	0.58			0.21			0.58
Uniform Delay, d1	9.2			6.9			30.9
Progression Factor	1.00			1.00			1.00
Incremental Delay, d2	1.2			0.2			5.5
Delay (s)	10.4			7.1			36.3
Level of Service	B			A			D
Approach Delay (s)	10.4			7.1	0.0		36.3
Approach LOS	B			A	A		D

**Intersection Summary**

HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
 184: Marina Blvd & Marina Green Dr

Timing Plan: AM  
 HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	598	283	0	442	0	1	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.0				
Lane Util. Factor		0.95	1.00		0.95			1.00				
Flt		1.00	0.85		1.00			1.00				
Flt Protected		1.00	1.00		1.00			0.95				
Satd. Flow (prot)		3579	1601		3579			1789				
Flt Permitted		1.00	1.00		1.00			0.76				
Satd. Flow (perm)		3579	1601		3579			1426				
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	598	283	0	442	0	1	0	0	0	0	0
RTOR Reduction (vph)	0	0	146	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	598	137	0	442	0	0	1	0	0	0	0
Turn Type	Perm		custom			custom	Perm			Perm		
Protected Phases		2	6					4			4	
Permitted Phases	2				2	2	4			4		
Actuated Green, G (s)		60.0	44.0		60.0			23.0				
Effective Green, g (s)		59.5	43.5		59.5			22.5				
Actuated g/C Ratio		0.66	0.48		0.66			0.25				
Clearance Time (s)		3.5	3.5		3.5			3.5				
Lane Grp Cap (vph)		2366	774		2366			357				
v/s Ratio Prot		c0.17	0.09									
v/s Ratio Perm					0.12			c0.00				
v/c Ratio		0.25	0.18		0.19			0.00				
Uniform Delay, d1		6.2	13.1		5.9			25.3				
Progression Factor		1.00	1.00		1.00			1.00				
Incremental Delay, d2		0.3	0.5		0.2			0.0				
Delay (s)		6.5	13.6		6.1			25.3				
Level of Service		A	B		A			C				
Approach Delay (s)		8.8			6.1			25.3			0.0	
Approach LOS		A			A			C			A	
<b>Intersection Summary</b>												
HCM Average Control Delay			7.9				HCM Level of Service			A		
HCM Volume to Capacity ratio			0.18									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)		8.0			
Intersection Capacity Utilization			26.5%				ICU Level of Service		A			
Analysis Period (min)			15									
c	Critical Lane Group											

Refined Presidio Parkway Alternative  
188: Lombard St & Van Ness Ave

Timing Plan: AM  
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
<b>Lane Configurations</b>												
Volume (vph)	0	467	1037	0	24	0	225	39	0	0	79	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lane Util. Factor		1.00	0.88		1.00		0.94	1.00			0.95	1.00
Frt		1.00	0.85		1.00		1.00	1.00			1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1883	2818		1883		5046	1883			3579	1601
Flt Permitted		1.00	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)		1883	2818		1883		5046	1883			3579	1601
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	467	1037	0	24	0	225	39	0	0	79	15
RTOR Reduction (vph)	0	0	438	0	0	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	467	599	0	24	0	225	39	0	0	79	5
Turn Type	Perm		pt+ov	Perm			Prot			Perm		Perm
Protected Phases		4	4 5		8		5	2			6	
Permitted Phases	4			8						6		6
Actuated Green, G (s)		39.5	54.5		39.5		11.5	42.5			27.5	27.5
Effective Green, g (s)		40.0	52.0		40.0		11.0	42.0			27.0	27.0
Actuated g/C Ratio		0.44	0.58		0.44		0.12	0.47			0.30	0.30
Clearance Time (s)		4.5			4.5		3.5	3.5			3.5	3.5
Lane Grp Cap (vph)		837	1628		837		617	879			1074	480
v/s Ratio Prot		c0.25	c0.21		0.01		0.04	0.02			c0.02	
v/s Ratio Perm												0.00
v/c Ratio		0.56	0.37		0.03		0.36	0.04			0.07	0.01
Uniform Delay, d1		18.5	10.2		14.1		36.3	13.1			22.5	22.1
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		2.7	0.6		0.1		1.7	0.1			0.1	0.0
Delay (s)		21.1	10.8		14.1		38.0	13.2			22.7	22.1
Level of Service		C	B		B		D	B			C	C
Approach Delay (s)		14.0			14.1			34.3			22.6	
Approach LOS		B			B			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			17.3				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.37									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)				12.0	
Intersection Capacity Utilization			52.9%				ICU Level of Service				A	
Analysis Period (min)			15									

c Critical Lane Group

Refined Presidio Parkway Alternative  
193: Bay St & Van Ness Ave

Timing Plan: AM  
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
<b>Lane Configurations</b>												
Volume (vph)	0	1312	0	0	704	0	2	470	123	0	88	262
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	4.0
Lane Util. Factor		0.95			0.95			0.91			0.95	1.00
Flt		1.00			1.00			0.97			1.00	0.85
Flt Protected		1.00			1.00			1.00			1.00	1.00
Satd. Flow (prot)		3579			3579			4982			3579	1601
Flt Permitted		1.00			1.00			0.94			1.00	1.00
Satd. Flow (perm)		3579			3579			4681			3579	1601
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1312	0	0	704	0	2	470	123	0	88	262
RTOR Reduction (vph)	0	0	0	0	0	0	0	52	0	0	0	204
Lane Group Flow (vph)	0	1312	0	0	704	0	0	543	0	0	88	58
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)		61.0			61.0			19.0			19.0	19.0
Effective Green, g (s)		62.0			62.0			20.0			20.0	20.0
Actuated g/C Ratio		0.69			0.69			0.22			0.22	0.22
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Lane Grp Cap (vph)		2466			2466			1040			795	356
v/s Ratio Prot		c0.37			0.20						0.02	
v/s Ratio Perm								c0.12				0.04
v/c Ratio		0.53			0.29			0.52			0.11	0.16
Uniform Delay, d1		6.9			5.4			30.8			27.9	28.2
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.8			0.3			1.9			0.3	1.0
Delay (s)		7.7			5.7			32.7			28.2	29.2
Level of Service		A			A			C			C	C
Approach Delay (s)		7.7			5.7			32.7			29.0	
Approach LOS		A			A			C			C	
<b>Intersection Summary</b>												
HCM Average Control Delay			14.8									B
HCM Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			90.0									8.0
Intersection Capacity Utilization			57.5%									B
ICU Level of Service												
Analysis Period (min)			15									
c Critical Lane Group												

Refined Presidio Parkway Alternative  
 198: Bay St & Laguna St

Timing Plan: AM  
 HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
<b>Lane Configurations</b>												
Volume (vph)	0	653	148	0	308	392	36	211	6	538	97	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		0.91			1.00	0.88		1.00		0.95	0.95	
Flt		0.97			1.00	0.85		1.00		1.00	1.00	
Flt Protected		1.00			1.00	1.00		0.99		0.95	0.97	
Satd. Flow (prot)		4999			1883	2818		1864		1700	1725	
Flt Permitted		1.00			1.00	1.00		0.91		0.95	0.97	
Satd. Flow (perm)		4999			1883	2818		1702		1700	1725	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	653	148	0	308	392	36	211	6	538	97	6
RTOR Reduction (vph)	0	41	0	0	0	109	0	1	0	0	1	0
Lane Group Flow (vph)	0	760	0	0	308	283	0	252	0	317	323	0
Turn Type	Perm					pt+ov		Perm		Split		
Protected Phases		4			4	4 2		6		2	2	
Permitted Phases	4						6					
Actuated Green, G (s)		17.0			17.0	65.5		17.5		45.0	45.0	
Effective Green, g (s)		16.5			16.5	65.0		17.0		44.5	44.5	
Actuated g/C Ratio		0.18			0.18	0.72		0.19		0.49	0.49	
Clearance Time (s)		3.5			3.5			3.5		3.5	3.5	
Lane Grp Cap (vph)		916			345	2035		321		841	853	
v/s Ratio Prot		0.15			c0.16	0.10				0.19	c0.19	
v/s Ratio Perm								c0.15				
v/c Ratio		0.83			0.89	0.14		0.79		0.38	0.38	
Uniform Delay, d1		35.4			35.9	3.9		34.8		14.1	14.2	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		8.6			27.6	0.1		17.4		1.3	1.3	
Delay (s)		44.0			63.5	4.0		52.2		15.4	15.4	
Level of Service		D			E	A		D		B	B	
Approach Delay (s)		44.0			30.2			52.2			15.4	
Approach LOS		D			C			D			B	
<b>Intersection Summary</b>												
HCM Average Control Delay			33.2				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			57.3%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
<b>Lane Configurations</b>						
Volume (veh/h)	0	0	0	0	1	10
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	1	10
<b>Pedestrians</b>						
<b>Lane Width (m)</b>						
<b>Walking Speed (m/s)</b>						
<b>Percent Blockage</b>						
<b>Right turn flare (veh)</b>						
Median type	None			None		
<b>Median storage (veh)</b>						
<b>Upstream signal (m)</b>						
<b>pX, platoon unblocked</b>						
vC, conflicting volume	12	0			0	
<b>vC1, stage 1 conf vol</b>						
<b>vC2, stage 2 conf vol</b>						
vCu, unblocked vol	12	0			0	
tC, single (s)	6.4	6.2			4.1	
<b>tC, 2 stage (s)</b>						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	1007	1085			1623	
<b>Direction, Lane #</b>						
	WB 1	NB 1	SB 1			
Volume Total	0	0	11			
Volume Left	0	0	1			
Volume Right	0	0	0			
cSH	1700	1700	1623			
Volume to Capacity	0.00	0.00	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.7			
Lane LOS	A		A			
Approach Delay (s)	0.0	0.0	0.7			
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			0.7			
Intersection Capacity Utilization			6.7%	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)	17	196	0	2	168	3	0	10	8	0	30	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	17	196	0	2	168	3	0	10	8	0	30	2
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	213	173	18	32								
Volume Left (vph)	17	2	0	0								
Volume Right (vph)	0	3	8	2								
Hadj (s)	0.05	0.03	-0.23	0.00								
Departure Headway (s)	4.2	4.3	4.6	4.8								
Degree Utilization, x	0.25	0.20	0.02	0.04								
Capacity (veh/h)	830	826	720	688								
Control Delay (s)	8.7	8.4	7.7	8.0								
Approach Delay (s)	8.7	8.4	7.7	8.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.5									
HCM Level of Service			A									
Intersection Capacity Utilization			31.0%	ICU Level of Service	A							
Analysis Period (min)			15									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	5	0	0	45	0	1	19	0	21	21	0
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	5	0	0	45	0	1	19	0	21	21	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	106	84	21	86	84	19	21				19	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	106	84	21	86	84	19	21				19	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	99	100	100	94	100	100				99	
cM capacity (veh/h)	826	795	1056	886	795	1059	1595				1597	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	5	45	20	42								
Volume Left	0	0	1	21								
Volume Right	0	0	0	0								
cSH	795	795	1595	1597								
Volume to Capacity	0.01	0.06	0.00	0.01								
Queue Length 95th (m)	0.1	1.4	0.0	0.3								
Control Delay (s)	9.6	9.8	0.4	3.7								
Lane LOS	A	A	A	A								
Approach Delay (s)	9.6	9.8	0.4	3.7								
Approach LOS	A	A										
Intersection Summary												
Average Delay			5.8									
Intersection Capacity Utilization			18.9%	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	Stop			Stop			Stop			Stop		
Volume (vph)	0	0	0	0	46	0	0	1	0	5	0	16
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	46	0	0	1	0	5	0	16
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	46	1	21								
Volume Left (vph)	0	0	0	5								
Volume Right (vph)	0	0	0	16								
Hadj (s)	0.00	0.03	0.03	-0.38								
Departure Headway (s)	4.0	4.0	4.1	3.6								
Degree Utilization, x	0.00	0.05	0.00	0.02								
Capacity (veh/h)	900	896	865	975								
Control Delay (s)	7.0	7.2	7.1	6.7								
Approach Delay (s)	0.0	7.2	7.1	6.7								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.0									
HCM Level of Service			A									
Intersection Capacity Utilization			15.9%	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	Stop			Stop			Stop			Stop		
Volume (vph)	0	65	13	0	207	0	1	0	0	75	324	25
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	65	13	0	207	0	1	0	0	75	324	25
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	78	207	1	424								
Volume Left (vph)	0	0	1	75								
Volume Right (vph)	13	0	0	25								
Hadj (s)	-0.07	0.03	0.23	0.03								
Departure Headway (s)	5.2	5.1	5.5	4.7								
Degree Utilization, x	0.11	0.29	0.00	0.55								
Capacity (veh/h)	625	652	594	737								
Control Delay (s)	8.9	10.2	8.5	13.3								
Approach Delay (s)	8.9	10.2	8.5	13.3								
Approach LOS	A	B	A	B								
Intersection Summary												
Delay			11.9									
HCM Level of Service			B									
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	Stop			Stop			Stop			Stop		
Volume (vph)	0	6	0	0	0	58	0	162	2	319	90	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	6	0	0	0	58	0	162	2	319	90	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	6	58	164	409								
Volume Left (vph)	0	0	0	319								
Volume Right (vph)	0	58	2	0								
Hadj (s)	0.03	-0.57	0.03	0.19								
Departure Headway (s)	5.3	4.6	4.5	4.4								
Degree Utilization, x	0.01	0.07	0.21	0.50								
Capacity (veh/h)	596	686	768	794								
Control Delay (s)	8.4	8.0	8.7	11.8								
Approach Delay (s)	8.4	8.0	8.7	11.8								
Approach LOS	A	A	A	B								
Intersection Summary												
Delay			10.6									
HCM Level of Service			B									
Intersection Capacity Utilization			44.6%	ICU Level of Service	A							
Analysis Period (min)			15									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Volume (vph)	0	203	0	95	169	27	3	34	90	19	57	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	203	0	95	169	27	3	34	90	19	57	1
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	203	291	127	77								
Volume Left (vph)	0	95	3	19								
Volume Right (vph)	0	27	90	1								
Hadj (s)	0.03	0.04	-0.39	0.08								
Departure Headway (s)	4.8	4.7	4.8	5.4								
Degree Utilization, x	0.27	0.38	0.17	0.11								
Capacity (veh/h)	698	723	670	597								
Control Delay (s)	9.6	10.6	8.8	9.1								
Approach Delay (s)	9.6	10.6	8.8	9.1								
Approach LOS	A	B	A	A								
Intersection Summary												
Delay			9.8									
HCM Level of Service			A									
Intersection Capacity Utilization			50.1%	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)	0	3	32	2	27	0	30	25	5	0	44	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	3	32	2	27	0	30	25	5	0	44	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	35	29	60	44								
Volume Left (vph)	0	2	30	0								
Volume Right (vph)	32	0	5	0								
Hadj (s)	-0.51	0.05	0.08	0.03								
Departure Headway (s)	3.6	4.2	4.2	4.1								
Degree Utilization, x	0.04	0.03	0.07	0.05								
Capacity (veh/h)	954	830	841	853								
Control Delay (s)	6.8	7.4	7.5	7.3								
Approach Delay (s)	6.8	7.4	7.5	7.3								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.3									
HCM Level of Service			A									
Intersection Capacity Utilization			19.9%	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	Stop			Stop			Stop			Stop		
Volume (vph)	42	147	138	3	0	18	57	480	0	0	388	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	42	147	138	3	0	18	57	480	0	0	388	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	327	21	537	388								
Volume Left (vph)	42	3	57	0								
Volume Right (vph)	138	18	0	0								
Hadj (s)	-0.19	-0.45	0.06	0.03								
Departure Headway (s)	6.4	7.2	5.9	6.1								
Degree Utilization, x	0.58	0.04	0.88	0.66								
Capacity (veh/h)	539	407	594	562								
Control Delay (s)	17.7	10.5	36.6	20.0								
Approach Delay (s)	17.7	10.5	36.6	20.0								
Approach LOS	C	B	E	C								
Intersection Summary												
Delay			26.2									
HCM Level of Service			D									
Intersection Capacity Utilization			82.8%	ICU Level of Service	E							
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)	5	20	44	2	0	1	3	531	3	6	521	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	20	44	2	0	1	3	531	3	6	521	1
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	69	3	537	528								
Volume Left (vph)	5	2	3	6								
Volume Right (vph)	44	1	3	1								
Hadj (s)	-0.33	-0.03	0.03	0.04								
Departure Headway (s)	6.0	6.5	4.8	4.8								
Degree Utilization, x	0.11	0.01	0.71	0.70								
Capacity (veh/h)	532	475	735	739								
Control Delay (s)	9.7	9.5	18.7	18.3								
Approach Delay (s)	9.7	9.5	18.7	18.3								
Approach LOS	A	A	C	C								
Intersection Summary												
Delay			18.0									
HCM Level of Service			C									
Intersection Capacity Utilization			42.2%	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	Stop			Stop			Stop			Stop		
Volume (vph)	0	0	0	0	0	0	0	1	0	6	331	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	0	0	1	0	6	331	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	0	1	337								
Volume Left (vph)	0	0	0	6								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.03	0.04								
Departure Headway (s)	4.6	4.6	4.2	3.9								
Degree Utilization, x	0.00	0.00	0.00	0.37								
Capacity (veh/h)	738	738	826	910								
Control Delay (s)	7.6	7.6	7.2	9.2								
Approach Delay (s)	0.0	0.0	7.2	9.2								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			9.2									
HCM Level of Service			A									
Intersection Capacity Utilization			25.6%	ICU Level of Service	A							
Analysis Period (min)			15									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Volume (vph)	0	38	108	0	0	0	0	150	2	6	76	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	38	108	0	0	0	0	150	2	6	76	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	146	0	152	82								
Volume Left (vph)	0	0	0	6								
Volume Right (vph)	108	0	2	0								
Hadj (s)	-0.41	0.00	0.03	0.05								
Departure Headway (s)	4.0	4.6	4.3	4.4								
Degree Utilization, x	0.16	0.00	0.18	0.10								
Capacity (veh/h)	849	746	797	770								
Control Delay (s)	7.8	7.6	8.3	7.9								
Approach Delay (s)	7.8	0.0	8.3	7.9								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.0									
HCM Level of Service			A									
Intersection Capacity Utilization			24.3%	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	Stop			Stop			Stop			Stop		
Volume (vph)	0	0	0	0	0	1	0	0	0	150	179	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	1	0	0	0	150	179	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	1	0	329								
Volume Left (vph)	0	0	0	150								
Volume Right (vph)	0	1	0	0								
Hadj (s)	0.00	-0.57	0.00	0.13								
Departure Headway (s)	4.6	4.0	4.2	4.0								
Degree Utilization, x	0.00	0.00	0.00	0.37								
Capacity (veh/h)	737	809	847	890								
Control Delay (s)	7.6	7.1	7.2	9.4								
Approach Delay (s)	0.0	7.1	0.0	9.4								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			9.3									
HCM Level of Service			A									
Intersection Capacity Utilization			27.7%	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)	0	1	0	0	0	6	0	18	0	4	14	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	1	0	0	0	6	0	18	0	4	14	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	1	6	18	18								
Volume Left (vph)	0	0	0	4								
Volume Right (vph)	0	6	0	0								
Hadj (s)	0.03	-0.57	0.03	0.08								
Departure Headway (s)	4.0	3.4	4.0	4.0								
Degree Utilization, x	0.00	0.01	0.02	0.02								
Capacity (veh/h)	882	1038	902	891								
Control Delay (s)	7.0	6.4	7.0	7.1								
Approach Delay (s)	7.0	6.4	7.0	7.1								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.0									
HCM Level of Service			A									
Intersection Capacity Utilization			14.2%	ICU Level of Service	A							
Analysis Period (min)			15									
























**2030 ALTERNATIVE 5**  
**(Refined Presidio Parkway Alternative) PM**  
**Additional Intersections**

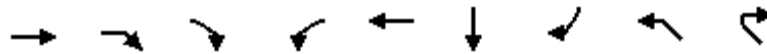
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑		↑	↑		↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		0.91			0.91		1.00	1.00		1.00	1.00	
Frt		0.97			1.00		1.00	0.99		1.00	0.96	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		4977			5138		1789	1864		1789	1808	
Flt Permitted		1.00			1.00		0.72	1.00		0.61	1.00	
Satd. Flow (perm)		4977			5138		1357	1864		1153	1808	
Volume (vph)	0	1616	439	0	2072	9	160	205	15	18	41	15
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1616	439	0	2072	9	160	205	15	18	41	15
RTOR Reduction (vph)	0	91	0	0	1	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	1964	0	0	2080	0	160	217	0	18	55	0
Turn Type							Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)		23.0			23.0		23.0	23.0		23.0	23.0	
Effective Green, g (s)		23.0			23.0		23.0	23.0		23.0	23.0	
Actuated g/C Ratio		0.43			0.43		0.43	0.43		0.43	0.43	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)		2120			2188		578	794		491	770	
v/s Ratio Prot		0.39			c0.40			0.12			0.03	
v/s Ratio Perm							c0.12			0.02		
v/c Ratio		0.93			0.95		0.28	0.27		0.04	0.07	
Uniform Delay, d1		14.7			15.0		10.1	10.1		9.0	9.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		8.5			10.7		1.2	0.8		0.1	0.2	
Delay (s)		23.2			25.7		11.3	10.9		9.2	9.4	
Level of Service		C			C		B	B		A	A	
Approach Delay (s)		23.2			25.7			11.1			9.3	
Approach LOS		C			C			B			A	
<b>Intersection Summary</b>												
HCM Average Control Delay			23.1				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			54.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			63.2%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												



Refined Presidio Parkway Alternative  
156: Lombard & Fillmore

Timing Plan: PM  
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						  	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.91			0.91			1.00			1.00	
Fr <sub>t</sub>		0.98			0.99			0.99			1.00	
Fl <sub>t</sub> Protected		1.00			1.00			1.00			1.00	
Satd. Flow (prot)		5058			5093			1869			1877	
Fl <sub>t</sub> Permitted		1.00			1.00			1.00			1.00	
Satd. Flow (perm)		5058			5093			1869			1877	
Volume (vph)	0	1265	154	0	1968	133	0	278	15	0	405	11
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1265	154	0	1968	133	0	278	15	0	405	11
RTOR Reduction (vph)	0	28	0	0	14	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	1391	0	0	2087	0	0	290	0	0	415	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		23.0			23.0			23.0			23.0	
Effective Green, g (s)		23.0			23.0			23.0			23.0	
Actuated g/C Ratio		0.43			0.43			0.43			0.43	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Lane Grp Cap (vph)		2154			2169			796			799	
v/s Ratio Prot		0.27			c0.41			0.15			c0.22	
v/s Ratio Perm												
v/c Ratio		0.65			0.96			0.36			0.52	
Uniform Delay, d <sub>1</sub>		12.3			15.1			10.5			11.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d <sub>2</sub>		1.5			12.3			1.3			2.4	
Delay (s)		13.8			27.4			11.8			13.8	
Level of Service		B			C			B			B	
Approach Delay (s)		13.8			27.4			11.8			13.8	
Approach LOS		B			C			B			B	
<b>Intersection Summary</b>												
HCM Average Control Delay			20.4				HCM Level of Service				C	
HCM Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			54.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			69.6%				ICU Level of Service			C		
Analysis Period (min)			15									
c	Critical Lane Group											























Movement	EBT	EBR	EBR2	WBL	WBT	SBT	SBR	NWL	NWR2		
Lane Configurations	↔				↔		↔	↔			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.0				4.0		4.0				
Lane Util. Factor	0.95				0.95		0.97				
Frt	0.95				1.00		1.00				
Flt Protected	1.00				1.00		0.95				
Satd. Flow (prot)	3408				3571		3476				
Flt Permitted	1.00				0.89		0.95				
Satd. Flow (perm)	3408				3172		3476				
Volume (vph)	657	298	9	39	947	0	0	253	3		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Adj. Flow (vph)	657	298	9	39	947	0	0	253	3		
RTOR Reduction (vph)	1	0	0	0	0	0	0	1	0		
Lane Group Flow (vph)	963		0	0	0	986		0	0	255	0
Turn Type					Perm		Perm				
Protected Phases	6				6		4	8			
Permitted Phases					6		4				
Actuated Green, G (s)	45.0				45.0		10.0				
Effective Green, g (s)	45.0				45.0		9.5				
Actuated g/C Ratio	0.60				0.60		0.13				
Clearance Time (s)	4.0				4.0		3.5				
Lane Grp Cap (vph)	2045				1903		440				
v/s Ratio Prot	0.28						c0.07				
v/s Ratio Perm					c0.31						
v/c Ratio	0.47				0.52		0.58				
Uniform Delay, d1	8.4				8.7		30.9				
Progression Factor	1.00				1.00		1.00				
Incremental Delay, d2	0.8				1.0		5.5				
Delay (s)	9.1				9.7		36.4				
Level of Service	A				A		D				
Approach Delay (s)	9.1				9.7		0.0	36.4			
Approach LOS	A				A		A	D			
<b>Intersection Summary</b>											
HCM Average Control Delay	12.6				HCM Level of Service			B			
HCM Volume to Capacity ratio	0.53										
Actuated Cycle Length (s)	75.0				Sum of lost time (s)			20.5			
Intersection Capacity Utilization	68.7%				ICU Level of Service			C			
Analysis Period (min)	15										

c Critical Lane Group

Refined Presidio Parkway Alternative  
184: Marina Blvd & Marina Green Dr

Timing Plan: PM  
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.0				
Lane Util. Factor		0.95	1.00		0.95			1.00				
Frt		1.00	0.85		1.00			1.00				
Flt Protected		1.00	1.00		1.00			0.95				
Satd. Flow (prot)		3579	1601		3579			1789				
Flt Permitted		1.00	1.00		1.00			0.76				
Satd. Flow (perm)		3579	1601		3579			1426				
Volume (vph)	0	569	76	0	603	0	390	0	0	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	569	76	0	603	0	390	0	0	0	0	0
RTOR Reduction (vph)	0	0	39	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	569	37	0	603	0	0	390	0	0	0	0
Turn Type	Perm	custom			custom		Perm			Perm		
Protected Phases		2	6					4			4	
Permitted Phases	2				2	2	4			4		
Actuated Green, G (s)		60.0	44.0		60.0			23.0				
Effective Green, g (s)		59.5	43.5		59.5			22.5				
Actuated g/C Ratio		0.66	0.48		0.66			0.25				
Clearance Time (s)		3.5	3.5		3.5			3.5				
Lane Grp Cap (vph)		2366	774		2366			357				
v/s Ratio Prot		0.16	0.02									
v/s Ratio Perm					c0.17			c0.27				
v/c Ratio		0.24	0.05		0.25			1.09				
Uniform Delay, d1		6.1	12.3		6.2			33.8				
Progression Factor		1.00	1.00		1.00			1.00				
Incremental Delay, d2		0.2	0.1		0.3			74.8				
Delay (s)		6.4	12.4		6.5			108.5				
Level of Service		A	B		A			F				
Approach Delay (s)		7.1			6.5			108.5			0.0	
Approach LOS		A			A			F			A	
<b>Intersection Summary</b>												
HCM Average Control Delay		31.0			HCM Level of Service			C				
HCM Volume to Capacity ratio		0.49										
Actuated Cycle Length (s)		90.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		44.9%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group

Refined Presidio Parkway Alternative  
188: Lombard St & Van Ness Ave

Timing Plan: PM  
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↗			↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lane Util. Factor		1.00	0.88		1.00		0.94	1.00			0.95	1.00
Frt		1.00	0.85		1.00		1.00	1.00			1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)		1883	2818		1883		5046	1883			3579	1601
Flt Permitted		1.00	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)		1883	2818		1883		5046	1883			3579	1601
Volume (vph)	0	406	666	0	290	0	1117	85	0	0	352	33
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	406	666	0	290	0	1117	85	0	0	352	33
RTOR Reduction (vph)	0	0	466	0	0	0	0	0	0	0	0	23
Lane Group Flow (vph)	0	406	200	0	290	0	1117	85	0	0	352	10
Turn Type	Perm		Perm	Perm			Prot			Perm		Perm
Protected Phases		4		8			5	2			6	
Permitted Phases	4		4	8						6		6
Actuated Green, G (s)		26.5	26.5		26.5		25.0	55.5			26.5	26.5
Effective Green, g (s)		27.0	27.0		27.0		25.0	55.0			26.0	26.0
Actuated g/C Ratio		0.30	0.30		0.30		0.28	0.61			0.29	0.29
Clearance Time (s)		4.5	4.5		4.5		4.0	3.5			3.5	3.5
Lane Grp Cap (vph)		565	845		565		1402	1151			1034	463
v/s Ratio Prot		c0.22			0.15		c0.22	0.05			c0.10	
v/s Ratio Perm			0.07									0.01
v/c Ratio		0.72	0.24		0.51		0.80	0.07			0.34	0.02
Uniform Delay, d1		28.1	23.7		26.1		30.1	7.1			25.2	22.9
Progression Factor		1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2		7.7	0.7		3.3		4.8	0.1			0.9	0.1
Delay (s)		35.8	24.4		29.4		34.9	7.3			26.1	23.0
Level of Service		D	C		C		C	A			C	C
Approach Delay (s)		28.7			29.4			33.0			25.9	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
193: Bay St & Van Ness Ave

Timing Plan: PM  
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕↕			↕↕	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	4.0
Lane Util. Factor		0.95			0.95			0.91			0.95	1.00
Frt		1.00			1.00			0.99			1.00	0.85
Flt Protected		1.00			1.00			1.00			1.00	1.00
Satd. Flow (prot)		3579			3579			5083			3579	1601
Flt Permitted		1.00			1.00			1.00			1.00	1.00
Satd. Flow (perm)		3579			3579			5083			3579	1601
Volume (vph)	0	1142	0	0	1779	0	0	340	28	0	537	208
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1142	0	0	1779	0	0	340	28	0	537	208
RTOR Reduction (vph)	0	0	0	0	0	0	0	10	0	0	0	19
Lane Group Flow (vph)	0	1142	0	0	1779	0	0	358	0	0	537	189
Turn Type	Perm		Perm		Perm		Perm		Perm		Perm	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		2
Actuated Green, G (s)		57.0			57.0			23.0			23.0	23.0
Effective Green, g (s)		58.0			58.0			24.0			24.0	24.0
Actuated g/C Ratio		0.64			0.64			0.27			0.27	0.27
Clearance Time (s)		5.0			5.0			5.0			5.0	5.0
Lane Grp Cap (vph)		2306			2306			1355			954	427
v/s Ratio Prot		0.32			c0.50			0.07			c0.15	
v/s Ratio Perm												0.12
v/c Ratio		0.50			0.77			0.26			0.56	0.44
Uniform Delay, d1		8.4			11.3			26.0			28.5	27.4
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.8			2.6			0.5			2.4	3.3
Delay (s)		9.1			13.9			26.5			30.9	30.7
Level of Service		A			B			C			C	C
Approach Delay (s)		9.1			13.9			26.5			30.8	
Approach LOS		A			B			C			C	

Intersection Summary

HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Refined Presidio Parkway Alternative  
198: Bay St & Laguna St

Timing Plan: PM  
HCM Signalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑	↑↑		↑		↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		0.91			1.00	0.88		1.00		0.95	0.95	
Frt		0.99			1.00	0.85		1.00		1.00	0.98	
Flt Protected		1.00			1.00	1.00		0.98		0.95	0.98	
Satd. Flow (prot)		5065			1883	2818		1835		1700	1719	
Flt Permitted		1.00			1.00	1.00		0.98		0.95	0.98	
Satd. Flow (perm)		5065			1883	2818		1835		1700	1719	
Volume (vph)	0	415	46	0	747	918	136	143	5	504	204	63
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	415	46	0	747	918	136	143	5	504	204	63
RTOR Reduction (vph)	0	15	0	0	0	201	0	1	0	0	8	0
Lane Group Flow (vph)	0	446	0	0	747	717	0	283	0	380	383	0
Turn Type					pt+ov	Split				Split		
Protected Phases		4			4	4 2	6	6		2	2	
Permitted Phases												
Actuated Green, G (s)		28.0			28.0	65.5		17.5		34.0	34.0	
Effective Green, g (s)		27.5			27.5	65.0		17.0		33.5	33.5	
Actuated g/C Ratio		0.31			0.31	0.72		0.19		0.37	0.37	
Clearance Time (s)		3.5			3.5			3.5		3.5	3.5	
Lane Grp Cap (vph)		1548			575	2035		347		633	640	
v/s Ratio Prot		0.09			c0.40	0.25		c0.15		c0.22	0.22	
v/s Ratio Perm												
v/c Ratio		0.29			1.30	0.35		0.82		0.60	0.60	
Uniform Delay, d1		23.8			31.2	4.7		35.0		22.8	22.8	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.5			147.1	0.5		18.8		4.2	4.1	
Delay (s)		24.3			178.3	5.1		53.8		27.0	26.9	
Level of Service		C			F	A		D		C	C	
Approach Delay (s)		24.3			82.8			53.8			27.0	
Approach LOS		C			F			D			C	

Intersection Summary

HCM Average Control Delay	58.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



















Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	0	0	2	0	0	18
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	2	0	0	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	20	2			2	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	20	2			2	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	997	1082			1620	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	2	18
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1620
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

















Intersection Summary			
Average Delay			0.0
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)			15

Refined Presidio Parkway Alternative  
46: Chestnut & Broderick

Timing Plan: PM  
HCM Unsignalized Intersection Capacity Analysis

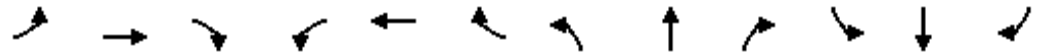
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	17	70	0	9	374	8	0	11	9	4	23	12
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	17	70	0	9	374	8	0	11	9	4	23	12
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	87	391	20	39								
Volume Left (vph)	17	9	0	4								
Volume Right (vph)	0	8	9	12								
Hadj (s)	0.07	0.03	-0.24	-0.13								
Departure Headway (s)	4.5	4.2	4.8	4.9								
Degree Utilization, x	0.11	0.45	0.03	0.05								
Capacity (veh/h)	770	842	677	666								
Control Delay (s)	8.1	10.6	7.9	8.1								
Approach Delay (s)	8.1	10.6	7.9	8.1								
Approach LOS	A	B	A	A								
Intersection Summary												
Delay			9.9									
HCM Level of Service			A									
Intersection Capacity Utilization			33.4%	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		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	6	5	0	389	0	1	34	0	13	34	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	6	5	0	389	0	1	34	0	13	34	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	290	96	34	104	96	34	34			34		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	290	96	34	104	96	34	34			34		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	100	100	51	100	100			99		
cM capacity (veh/h)	402	787	1039	861	787	1039	1578			1578		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	11	389	35	47								
Volume Left	0	0	1	13								
Volume Right	5	0	0	0								
cSH	885	787	1578	1578								
Volume to Capacity	0.01	0.49	0.00	0.01								
Queue Length 95th (m)	0.3	21.1	0.0	0.2								
Control Delay (s)	9.1	14.0	0.2	2.1								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.1	14.0	0.2	2.1								
Approach LOS	A	B										
<b>Intersection Summary</b>												
Average Delay			11.7									
Intersection Capacity Utilization			35.8%		ICU Level of Service					A		
Analysis Period (min)			15									

Refined Presidio Parkway Alternative  
 138: Francisco & Baker

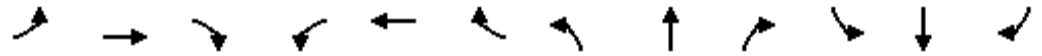
Timing Plan: PM  
 HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	389	1	0	19	0	11	1	34
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	389	1	0	19	0	11	1	34

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	390	19	46
Volume Left (vph)	0	0	0	11
Volume Right (vph)	0	1	0	34
Hadj (s)	0.00	0.03	0.03	-0.36
Departure Headway (s)	4.4	4.1	4.9	4.4
Degree Utilization, x	0.00	0.44	0.03	0.06
Capacity (veh/h)	792	869	679	739
Control Delay (s)	7.4	10.3	8.0	7.7
Approach Delay (s)	0.0	10.3	8.0	7.7
Approach LOS	A	B	A	A

Intersection Summary			
Delay		9.9	
HCM Level of Service		A	
Intersection Capacity Utilization	36.6%		ICU Level of Service A
Analysis Period (min)		15	



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	149	7	0	252	0	39	0	0	4	193	68
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	149	7	0	252	0	39	0	0	4	193	68

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	156	252	39	265
Volume Left (vph)	0	0	39	4
Volume Right (vph)	7	0	0	68
Hadj (s)	0.01	0.03	0.23	-0.12
Departure Headway (s)	5.0	4.9	5.6	4.9
Degree Utilization, x	0.22	0.35	0.06	0.36
Capacity (veh/h)	658	685	575	688
Control Delay (s)	9.5	10.5	8.9	10.6
Approach Delay (s)	9.5	10.5	8.9	10.6
Approach LOS	A	B	A	B

Intersection Summary			
Delay		10.2	
HCM Level of Service		B	
Intersection Capacity Utilization	41.1%		ICU Level of Service A
Analysis Period (min)		15	

Refined Presidio Parkway Alternative  
 142: Greenwich & Broderick

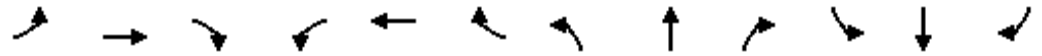
Timing Plan: PM  
 HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	149	0	212	2	58	222	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	149	0	212	2	58	222	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	149	214	280								
Volume Left (vph)	0	0	0	58								
Volume Right (vph)	0	149	2	0								
Hadj (s)	0.00	-0.57	0.03	0.08								
Departure Headway (s)	5.3	4.5	4.6	4.6								
Degree Utilization, x	0.00	0.19	0.27	0.36								
Capacity (veh/h)	609	727	748	753								
Control Delay (s)	8.3	8.5	9.3	10.1								
Approach Delay (s)	0.0	8.5	9.3	10.1								
Approach LOS	A	A	A	B								
Intersection Summary												
Delay			9.5									
HCM Level of Service			A									
Intersection Capacity Utilization			45.4%	ICU Level of Service	A							
Analysis Period (min)			15									

Refined Presidio Parkway Alternative  
 148: Chestnut & Divisadero

Timing Plan: PM  
 HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	80	3	20	377	108	6	55	153	17	52	7
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	80	3	20	377	108	6	55	153	17	52	7
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	83	505	214	76								
Volume Left (vph)	0	20	6	17								
Volume Right (vph)	3	108	153	7								
Hadj (s)	0.01	-0.09	-0.39	0.02								
Departure Headway (s)	5.4	4.7	5.1	5.8								
Degree Utilization, x	0.12	0.67	0.30	0.12								
Capacity (veh/h)	600	736	632	545								
Control Delay (s)	9.2	16.6	10.4	9.6								
Approach Delay (s)	9.2	16.6	10.4	9.6								
Approach LOS	A	C	B	A								
<b>Intersection Summary</b>												
Delay			13.8									
HCM Level of Service			B									
Intersection Capacity Utilization			53.8%	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)	0	0	19	11	278	0	111	51	2	0	46	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	19	11	278	0	111	51	2	0	46	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	19	289	164	46
Volume Left (vph)	0	11	111	0
Volume Right (vph)	19	0	2	0
Hadj (s)	-0.57	0.04	0.16	0.03
Departure Headway (s)	4.2	4.5	4.9	4.9
Degree Utilization, x	0.02	0.36	0.22	0.06
Capacity (veh/h)	791	765	699	677
Control Delay (s)	7.3	10.0	9.2	8.2
Approach Delay (s)	7.3	10.0	9.2	8.2
Approach LOS	A	B	A	A

Intersection Summary			
Delay		9.5	
HCM Level of Service		A	
Intersection Capacity Utilization	44.2%		ICU Level of Service A
Analysis Period (min)		15	

Refined Presidio Parkway Alternative  
 150: Greenwich & Divisadero

















Timing Plan: PM  
 HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	0	41	4	15	5	134	357	0	0	480	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	20	0	41	4	15	5	134	357	0	0	480	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	61	24	491	480
Volume Left (vph)	20	4	134	0
Volume Right (vph)	41	5	0	0
Hadj (s)	-0.30	-0.06	0.09	0.03
Departure Headway (s)	5.9	6.3	4.8	4.8
Degree Utilization, x	0.10	0.04	0.66	0.64
Capacity (veh/h)	511	485	724	736
Control Delay (s)	9.6	9.5	16.6	15.9
Approach Delay (s)	9.6	9.5	16.6	15.9
Approach LOS	A	A	C	C

Intersection Summary			
Delay		15.7	
HCM Level of Service		C	
Intersection Capacity Utilization	68.0%	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		Stop			Stop			Stop			Stop	
Volume (vph)	5	7	36	3	6	8	9	477	4	2	520	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	7	36	3	6	8	9	477	4	2	520	3
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	48	17	490	525								
Volume Left (vph)	5	3	9	2								
Volume Right (vph)	36	8	4	3								
Hadj (s)	-0.40	-0.21	0.03	0.03								
Departure Headway (s)	5.8	6.1	4.7	4.7								
Degree Utilization, x	0.08	0.03	0.64	0.69								
Capacity (veh/h)	535	501	737	753								
Control Delay (s)	9.3	9.3	15.9	17.3								
Approach Delay (s)	9.3	9.3	15.9	17.3								
Approach LOS	A	A	C	C								
Intersection Summary												
Delay			16.2									
HCM Level of Service			C									
Intersection Capacity Utilization			41.9%	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		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	0	0	39	0	0	199	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	0	0	39	0	0	199	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	0	39	199								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.03	0.03								
Departure Headway (s)	4.4	4.4	4.1	4.0								
Degree Utilization, x	0.00	0.00	0.04	0.22								
Capacity (veh/h)	783	783	856	901								
Control Delay (s)	7.4	7.4	7.3	8.1								
Approach Delay (s)	0.0	0.0	7.3	8.1								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.0									
HCM Level of Service			A									
Intersection Capacity Utilization			13.8%	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)	0	1	5	0	1	1	7	203	2	26	182	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	1	5	0	1	1	7	203	2	26	182	0

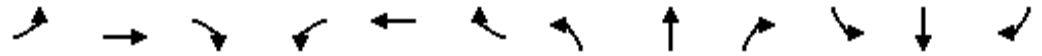
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	6	2	212	208
Volume Left (vph)	0	0	7	26
Volume Right (vph)	5	1	2	0
Hadj (s)	-0.47	-0.27	0.03	0.06
Departure Headway (s)	4.3	4.5	4.2	4.2
Degree Utilization, x	0.01	0.00	0.24	0.24
Capacity (veh/h)	747	714	850	850
Control Delay (s)	7.4	7.6	8.5	8.5
Approach Delay (s)	7.4	7.6	8.5	8.5
Approach LOS	A	A	A	A

Intersection Summary			
Delay		8.5	
HCM Level of Service		A	
Intersection Capacity Utilization	31.3%	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		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	11	0	27	0	8	191	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	11	0	27	0	8	191	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	11	27	199								
Volume Left (vph)	0	0	0	8								
Volume Right (vph)	0	11	0	0								
Hadj (s)	0.00	-0.57	0.03	0.04								
Departure Headway (s)	4.4	3.8	4.1	4.0								
Degree Utilization, x	0.00	0.01	0.03	0.22								
Capacity (veh/h)	786	887	848	895								
Control Delay (s)	7.4	6.9	7.3	8.1								
Approach Delay (s)	0.0	6.9	7.3	8.1								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay			8.0									
HCM Level of Service			A									
Intersection Capacity Utilization			26.5%	ICU Level of Service	A							
Analysis Period (min)			15									

Refined Presidio Parkway Alternative  
 178: Beach St & Broderick

Timing Plan: PM  
 HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	0	4	0	21	0	4	31	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	0	0	4	0	21	0	4	31	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	0	4	21	35
Volume Left (vph)	0	0	0	4
Volume Right (vph)	0	4	0	0
Hadj (s)	0.00	-0.57	0.03	0.06
Departure Headway (s)	4.0	3.5	4.0	4.0
Degree Utilization, x	0.00	0.00	0.02	0.04
Capacity (veh/h)	886	1021	900	897
Control Delay (s)	7.0	6.5	7.1	7.1
Approach Delay (s)	0.0	6.5	7.1	7.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay		7.1	
HCM Level of Service		A	
Intersection Capacity Utilization	15.0%		ICU Level of Service A
Analysis Period (min)		15	