Appendix D

Traffic Impact Analysis

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December 12, 2016

Mr. Joe Power
Rincon Consultants, Inc.
180 North Ashwood Avenue
Ventura, California 93003

LLG Reference: 2.16.3754.1

Subject: **Traffic Impact Analysis for the Alamitos Avenue "Complete Streets" Corridor Improvements Project**
Long Beach, California

Dear Mr. Power:

Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit this traffic impact analysis for the proposed Alamitos Avenue "Complete Streets" Corridor Improvements project (hereinafter referred to as Project) located in Long Beach, California. This traffic analysis has been prepared to identify the traffic implications associated with the proposed modifications to Alamitos Avenue, between 7th Street and Ocean Boulevard, to a two-lane divided roadway with curb side parking, where possible, and on-street bike lanes to match the section of Alamitos Avenue north of 7th Street. The implementation of this improvement is consistent with the City of Long Beach Mobility Element.

1.0 INTRODUCTION

This traffic report documents the findings and recommendations of a traffic impact analysis conducted by Linscott, Law & Greenspan, Engineers (LLG) to determine the potential impacts associated with the proposed Project. The traffic analysis evaluates the existing operating conditions at nine (9) key study intersections within the Project study segment, and forecasts existing plus Project and near-term (Year 2020) traffic conditions without and with the proposed Project.

1.1 Study Area / Project Limits

The following nine (9) key study intersections located within the limits of the Project have been identified for evaluation:

1. Alamitos Avenue at 7th Street
2. Alamitos Avenue at 6th Street
3. Alamitos Avenue at 5th Street
4. Alamitos Avenue at 4th Street
5. Alamitos Avenue at 3rd Street

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6. Alamitos Avenue at Broadway
7. Alamitos Avenue at 1st Street
8. Alamitos Avenue at Medio Street
9. Alamitos Avenue/Shoreline Drive at Ocean Boulevard

Figure 1-1, which is located at the end of this letter, presents the vicinity map which illustrates the limits of the Alamitos Avenue Road Diet Improvements and depicts the study locations and surrounding street system.

The Level of Service (LOS) investigations at these key locations were used to evaluate the potential traffic impacts associated with implementation of the proposed Project. When necessary, this report recommends intersection improvements that may be required to accommodate future traffic volumes and restore/maintain an acceptable Level of Service and/or mitigate the impact of the project.

This traffic report satisfies the traffic impact requirements of the City of Long Beach and is consistent with the current *Congestion Management Program (CMP) for Los Angeles County.* The Scope of Work for this traffic study developed in conjunction with City of Long Beach staff.

Our methods of analysis, findings and conclusions are described in detail in the following sections of this letter.

2.0 PROJECT DESCRIPTION

The proposed Project includes modifications on Alamitos Avenue, between 7th Street and Ocean Boulevard, to a two-lane divided roadway with on-street bike lanes to match the section north of 7th Street. Based on review of the recent "Complete Streets" corridor improvements on Alamitos Avenue, north of 7th Street, Alamitos Avenue, generally, has been restriped to provide a two-lane, divided roadway, separated by a two-way left-turn lane, with on-street parking and on-street bike lanes and a buffer to separate bicycle traffic from vehicular traffic. Please note that the vision of this Project is consistent with that of the Long Beach Mobility Element.

Figure 2-1 presents the aerial map for Alamitos Avenue between 7th Street and Ocean Boulevard under existing conditions. ***Figure 2-2*** presents the proposed lane geometry on Alamitos Avenue with the Project, and compares it to the existing lane geometry. As shown, the proposed Project plans to, generally, replace an existing through-lane on Alamitos Avenue with an on-street bike lane and buffer. The "Complete Streets" improvements consist of the following:

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- **Alamitos Avenue at 7th Street:** The implementation of a "Complete Streets" on Alamitos Avenue will restripe the exclusive northbound right-turn lane to also include an on-street bike lane and buffer.

- **Alamitos Avenue at 6th Street:** The implementation of a "Complete Streets" on Alamitos Avenue will replace the rightmost northbound through-lane with an on-street bike lane and buffer and an exclusive right-turn pocket, and the leftmost southbound through-lane with an on-street bike lane and buffer.

- **Alamitos Avenue at 5th Street:** The implementation of a "Complete Streets" on Alamitos Avenue will replace the rightmost northbound through-lane and the leftmost southbound through-lane with an on-street bike lane and buffer.

- **Alamitos Avenue at 4th Street:** The implementation of a "Complete Streets" on Alamitos Avenue will replace the rightmost northbound through-lane and the leftmost southbound through-lane with an on-street bike lane and buffer.

- **Alamitos Avenue at 3rd Street:** The implementation of a "Complete Streets" on Alamitos Avenue will replace the rightmost northbound through-lane with an on-street bike lane and buffer and an exclusive right-turn pocket, and the southbound trap right-turn lane with an on-street bike lane and buffer.

- **Alamitos Avenue at Broadway:** The implementation of a "Complete Streets" on Alamitos Avenue will replace the rightmost northbound through-lane with an on-street bike lane and buffer and an exclusive right-turn lane. Due to the removal of one northbound departure lane, one eastbound left-turn lane will also be eliminated.

- **Alamitos Avenue at 1st Street:** The implementation of a "Complete Streets" on Alamitos Avenue will replace the rightmost northbound through-lane with an on-street bike lane and buffer.

- **Alamitos Avenue at Medio Street:** The implementation of a "Complete Streets" on Alamitos Avenue will replace the rightmost northbound through-lane and the leftmost southbound through-lane with an on-street bike lane and buffer.

- **Alamitos Avenue/Shoreline Drive at Ocean Boulevard:** The implementation of a "Complete Streets" on Alamitos Avenue will replace

the leftmost southbound through-lane with an on-street bike lane and buffer and an exclusive right-turn pocket.

It is noted that Alamitos Avenue, from 6th Street to Ocean Boulevard, is identified as a proposed Intelligent Transportation System (ITS) corridor within the City of Long Beach Mobility Element, that would allow for the use of technology to improve the efficiency of traffic signals to improve traffic flow along certain roadway segments via the collection of real-time traffic and parking data would be used to make adjustments to traffic signals.

3.0 EXISTING ROADWAY AND INTERSECTION CHARACTERISTICS

3.1 Existing Intersection Conditions

Alamitos Avenue is a generally a four-lane roadway, separated by a two-way left-turn lane, that extends in the north-south direction. Parking is generally permitted on both sides of the roadway within the vicinity of the project but is restricted along certain sections during several time periods of the week, inclusive of during the weekday peak commute periods. The posted speed limit on Alamitos Avenue is 30 mph. Alamitos Avenue is currently classified as a Class III bike facility. Traffic signals control the study intersections of Los Alamitos Boulevard at 7th Street, 6th Street, 5th Street, 4th Street, 3rd Street, Broadway, 1st Street, and Ocean Boulevard. The study intersection of Los Alamitos Boulevard at Medio Street is one-way (side-street) stop controlled.

3.2 Existing Traffic Volumes

Nine (9) key study intersections have been identified as the locations at which to evaluate existing and future traffic operating conditions. Existing weekday peak hour traffic volumes for the nine (9) key study intersections evaluated in this report were obtained from manual turning movement counts conducted by AimTD LLC in May 2016 and September 2016.

Figures 3-1 and ***3-2*** illustrate the existing weekday AM and PM peak hour traffic volumes at the nine (9) key study intersections evaluated in this report, respectively. ***Appendix A*** contains the detailed peak hour count sheets for the key intersections evaluated in this report.

3.3 Existing Public Transit

The Los Angeles County Metropolitan Transportation Authority and Long Beach Transit (LBT) provide public transit services in the vicinity of the proposed Project. In the vicinity of the Project, the Metro Blue Line currently serves 1st Street. The Los Angeles Department of Transportation (LADOT) Commuter Express 142 currently

serves Ocean Boulevard. In addition to the Metro routes, LBT Passport Route serves Ocean Boulevard, Shoreline Drive, and 3rd Street; LBT Route 1 serves 6th Street; LBT Routes 21, 22, and 121 serve Ocean Boulevard; Route 61 serves Ocean Boulevard, Broadway, and 6th Street; LBT Routes 71 and 72 serve Ocean Boulevard, Broadway and Alamitos Avenue; LBT Routes 91, 92, 93, and 94 serve 6th Street and 7th Street; LBT Routes 111 and 112 serve Broadway; LBT Route 151 serves Ocean Boulevard, 3rd Street, 4th Street, Broadway, and Alamitos Avenue; and LBT Routes 181, 191, and 192 serve Broadway, and 3rd Street.

Figure 3-3 graphically illustrates the transit routes of Long Beach Transit within the vicinity of the Project site. ***Figure 3-4*** identifies the location of the existing LBT bus stops in proximity to the Project site.

3.4 Existing Bicycle Master Plan

The City of Long Beach promotes bicycling as a means of mobility and a way in which to improve the quality of life within its community. The Bicycle Master Plan recognizes the needs of bicycle users and aims to create a complete and safe bicycle network throughout the City. The City of Long Beach Bicycle Facilities in the vicinity of the Project site (existing and proposed) is shown on ***Figure 3-5***.

4.0 FUTURE ROADWAY CHARACTERISTICS

4.1 Existing Plus Project Traffic Volumes

Since the proposed Project is the implementation of "Complete Streets" improvements along Alamitos Avenue, the project does not generate any additional vehicular trips. As such, Existing Plus Project traffic volumes are identical to the Existing traffic volumes.

This traffic volume scenario and related intersection capacity analyses will identify the potential impact of the proposed Project and improvements necessary to mitigate the Project's direct traffic impacts, if any.

4.2 Year 2020 Traffic Volumes

4.2.1 Ambient Traffic Growth

Cumulative traffic growth estimates have been calculated using an ambient growth factor. The ambient traffic growth factor is intended to include unknown and future cumulative projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at one percent (1%) per year. Applied to existing Year 2016 traffic volumes results in a four percent (4%) increase of growth in existing volumes to horizon year 2020.

Please note that the recommended ambient growth factor is generally consistent with the background traffic growth estimates contained in the most current *Congestion Management Program for Los Angeles County*. It should be further noted that the 1.0% per year ambient growth factor was approved by City of Long Beach staff.

4.2.2 Cumulative Projects Traffic Characteristics

The City of Long Beach identified twenty-six (26) cumulative projects within the Project study area. Cumulative projects, as defined by Section 15355 of the CEQA Guidelines, are "closely related past, present and reasonably foreseeable probable future projects". The Traffic Impact Analysis assumes that all of these cumulative projects will be developed and operational when the proposed Project is operational. This is the most conservative, worst-case approach, since the exact timing of each cumulative project is uncertain. In addition, impacts for these cumulative projects would likely be, or have been, subject to mitigation measures, which could reduce potential impacts. Under this analysis, however, those mitigation measures are not considered. With this information, the potential impact of the proposed Project can be evaluated within the context of the cumulative impact of all ongoing development. These twenty-six (26) cumulative projects have been included as part of the cumulative background setting.

Table 4-1 provides the location and a brief description for each of the twenty-six (26) cumulative projects. ***Figure 4-1*** graphically illustrates the location of the cumulative projects. These cumulative projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

Table 4-2 presents the development totals and resultant trip generation for the twenty-six (26) cumulative projects. As shown in *Table 4-2*, the twenty-six (26) cumulative projects are expected to generate a combined total of 44,145 daily trips, 3,338 AM peak hour trips (1,397 inbound and 1,941 outbound) and 3,645 PM peak hour trips (1,958 inbound and 1,687 outbound) on a typical weekday.

The AM and PM peak hour traffic volumes associated with the twenty-six (26) cumulative projects are presented in ***Figures 4-2*** and ***4-3*** respectively.

4.2.3 Year 2020 Cumulative Traffic Volumes

Figures 4-4 and ***4-5*** present future AM and PM peak hour cumulative traffic volumes at the nine (9) key study intersections for the Year 2020, respectively. Please note that the cumulative traffic volumes represent the accumulation of existing traffic, ambient growth traffic and cumulative projects traffic.

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4.2.4 Year 2020 Cumulative Plus Project Traffic Volumes

Since the proposed Project is the implementation of "Complete Streets" improvements along Alamitos Avenue, the project does not generate any additional vehicular trips. As such, Year 2020 Cumulative Plus Project traffic volumes are identical to the Year 2020 Cumulative traffic volumes.

4.2.5 Year 2020 Roadway Network Improvements

Based on information obtained from the City of Long Beach, roadway network changes in the downtown area were applied to the Year 2020 cumulative background setting. The roadway network changes include the conversion of 7th Street and 6th Street to a two-way roadway west of Atlantic Avenue; the conversion of these two streets from one-way flow to two-way traffic flow west to Alamitos Avenue was recently completed by the City over the past year or so. These planned improvements which result in changes to traffic patterns are included in the cumulative traffic setting.

5.0 TRAFFIC IMPACT ANALYSIS

The potential impact of the proposed Project during the AM and PM peak hours was evaluated based on analysis of existing and future operating conditions at the nine (9) key study intersections, without, then with, the proposed Project. The *Intersection Capacity Utilization* (ICU) methodology for the signalized intersections, as well as an operations assessment for all nine (9) study intersection were evaluated in Synchro 9.0 using the *Highway Capacity Manual 2010* (HCM 2010) methodology. These capacity analysis procedures, which are discussed further in the following sections, were utilized to investigate the future volume-to-capacity relationships and service level characteristics. The significance of the potential impacts of the Project at each key intersection was then evaluated using the City's adopted Level of Service (LOS) standard and impact criteria summarized below.

5.1 Level of Service Criteria

According to the City of Long Beach, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours, or the current LOS if the existing LOS is worse than LOS D (i.e. LOS E of F).

5.2 Significant Impact Criteria

According to the City of Long Beach, impacts to local and regional transportation systems are considered significant if:

- The project causes a study intersection to deteriorate from Level of Service (LOS) D to LOS E or F. The City of Long Beach considers LOS D (ICU = 0.801 - 0.900) to be the minimum acceptable LOS for all intersections; or

- The project increases traffic demand at the study intersection by 2% of capacity (ICU increase ≥ 0.020), causing or worsening LOS E or F (ICU > 0.901) when an intersection is operating at LOS E or F in the baseline condition.

5.3 Traffic Impact Analysis Scenarios

The following scenarios are those for which volume/capacity calculations have been performed at the nine (9) key intersections:

1. Existing Traffic Conditions;
2. Existing Plus Project Traffic Conditions;
3. Scenario (2) with Mitigation, if necessary;
4. Year 2020 Traffic Conditions;
5. Year 2020 Plus Project Traffic Conditions; and
6. Scenario (5) with Mitigation, if necessary.

6.0 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

In conformance with the City of Long Beach requirements, AM and PM peak hour operating conditions for the key study intersections were evaluated in Traffix using the *Intersection Capacity Utilization* (ICU) methodology for the signalized intersections. In addition, an operations assessment has been completed at the key study intersections which were evaluated in Synchro 9.0 using the *Highway Capacity Manual 2010* (HCM 2010) methodology.

6.1 Intersection Capacity Utilization (ICU) Method of Analysis

The ICU value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The ICU value is the sum of the critical volume to capacity ratios at an intersection; it is not intended to be indicative of the LOS of each of the individual turning movements. The six qualitative categories of Level of Service have been defined along with the corresponding ICU value range and are shown in ***Table 6-1***, located at the end of this letter report following the figures.

The capacity of signalized intersections along Alamitos Avenue, between 6th Street and Ocean Boulevard, being implemented with supportive Intelligent Transportation System (ITS) measures were assumed to improve by ten percent (i.e. 0.10), which is consistent with that experienced in other jurisdictions with Adaptive Traffic Control System (ATCS)/ITS programs. This capacity enhancement is consistent with that which was assumed as part of the Douglas Park Area-Wide Adaptive Signal Control project, and referenced in the Addendum to the Final Environmental Impact Report for the Douglas Park Rezone Project (formerly the PacifiCenter @ Long Beach).

6.2 Highway Capacity Manual (HCM) Method of Analysis (Signalized Intersections)

Based on the HCM 2010 operations method of analysis, level of service for signalized intersections and approaches is defined in terms of control delay, which is a measure of the increase in travel time due to traffic signal control, driver discomfort, and fuel consumption. Control delay includes the delay associated with vehicles slowing in advance of an intersection, the time spent stopped on an intersection approach, the time spent as vehicles move up in the queue, and the time needed for vehicles to accelerate to their desired speed. LOS criteria for traffic signals are stated in terms of the control delay in seconds per vehicle. The LOS thresholds established for the automobile mode at a signalized intersection are shown in ***Table 6-2***.

6.3 Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)

Two-way stop-controlled intersections are comprised of a major street, which is uncontrolled, and a minor street, which is controlled by stop signs. Level of service for a two-way stop-controlled intersection is determined by the computed or measured control delay. The control delay by movement, by approach, and for the intersection as a whole is estimated by the computed capacity for each movement. LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns. The worst side street approach delay is reported. LOS is not defined for the intersection as a whole or for major-street approaches, as it is assumed that major-street through vehicles experience zero delay. The HCM control delay value range for two-way stop-controlled intersections are shown in ***Table 6-3***.

6.4 Existing Plus Project Traffic Conditions Level of Service Analysis

6.4.1 ICU Methodology

Table 6-4 summarizes the peak hour Level of Service results at the nine (9) key study intersections for existing plus project traffic conditions utilizing the ICU methodology. The first column (1) of ICU/LOS values in *Table 6-4* presents a summary of existing AM and PM peak hour traffic conditions utilizing the existing lane configurations. The second column (2) lists existing plus project traffic conditions utilizing the proposed project lane configurations. The third column (3) indicates whether the Project will have a significant impact based on the LOS standards and significant impact criteria defined in this report.

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6.4.1.1 Existing Traffic Conditions

As shown in Column (1) of *Table 6-4*, all nine (9) key study intersections currently operate at an acceptable service level (LOS D or better) based on the ICU method of analysis, existing traffic volumes, and current street geometry.

6.4.1.2 Existing Plus Project Traffic Conditions

Review of columns (2) and (3) of *Table 6-4* indicates that the proposed project will impact three (3) of the nine key study intersections based on the LOS standards and significant impact criteria defined in this report. The remaining intersections will continue to operate at an acceptable service level (LOS D or better) under Existing Plus Project traffic conditions. The intersections significantly impacted by the proposed Project consist of the following:

	AM Peak Hour		PM Peak Hour	
Study Intersection	ICU	LOS	ICU	LOS
1. Alamitos Avenue at 7th Street	--	--	0.975	E
4. Alamitos Avenue at 4th Street	--	--	0.921	E
6. Alamitos Avenue at Broadway	--	--	0.928	E

Although the proposed Project significantly impacts these three (3) study intersections under ICU methodology, there are no feasible mitigation measures that would mitigate the project's impact.

6.4.2 HCM Methodology

Table 6-5 summarizes the peak hour Level of Service results at the key study intersections for existing plus project traffic conditions utilizing the HCM methodology. The first column (1) of Delay/LOS values in *Table 6-5* presents a summary of existing AM and PM peak hour traffic conditions utilizing the existing lane configurations. The second column (2) lists existing plus project traffic conditions utilizing the proposed project lane configurations. The third column (3) indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards and significant impact criteria defined in this report.

6.4.2.1 Existing Traffic Conditions

As shown in Column (1) of *Table 6-5*, all nine (9) key study intersections currently operate at an acceptable service level (LOS D or better) based on the HCM method of analysis, existing traffic volumes, and current street geometry.

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6.4.2.2 Existing Plus Project Traffic Conditions

Review of columns (2) and (3) of *Table 6-5* indicates that under Existing Plus Project traffic conditions, all nine (9) key study intersections are forecast to continue to operate at acceptable service levels during the AM and PM peak based on an operations assessment of the study intersections with the implementation of the Project.

Appendix B presents the Existing plus Project ICU/LOS and HCM/LOS calculations for the nine (9) signalized key study intersections.

6.5 Year 2020 Traffic Conditions Level of Service Analysis

6.5.1 ICU Methodology

Table 6-6 summarizes the peak hour Level of Service results at the nine (9) key study intersection for Year 2020 traffic conditions utilizing the ICU methodology. The first column (1) of ICU/LOS values in *Table 6-6* presents a summary of existing traffic conditions utilizing the existing lane configurations (which can also be found in *Table 6-4*). The second column (2) lists Year 2020 cumulative traffic conditions (existing plus ambient growth traffic with cumulative projects). The third column (3) presents forecast Year 2020 Cumulative plus Project traffic conditions utilizing the proposed project lane configurations. The fourth column (4) indicates whether the Project will have a significant impact based on the LOS standards and significant impact criteria defined in this report.

6.5.1.1 Year 2020 Cumulative Traffic Conditions

Review of Column (2) of *Table 6-6* indicates that four (4) of the nine key study intersections are forecast to operate at unacceptable service levels during the AM and/or PM peak hours under Year 2020 cumulative traffic conditions. The remaining study intersections are forecast to operate at acceptable service levels. The intersections operating adversely consist of the following:

	AM Peak Hour		PM Peak Hour	
Study Intersection	ICU	LOS	ICU	LOS
1. Alamitos Avenue at 7th Street	1.004	F	1.253	F
5. Alamitos Avenue at 3rd Street	1.014	F	--	--
6. Alamitos Avenue at Broadway	--	--	0.991	E
9. Alamitos Avenue/Shoreline Drive at Ocean Boulevard	0.964	E	0.982	E

6.5.1.2 Year 2020 Cumulative Plus Project Traffic Conditions

Review of columns (3) and (4) of *Table 6-6* indicates that the proposed project will impact five (5) of the nine key study intersections based on the LOS standards and significant impact criteria defined in this report. The intersections significantly impacted by the proposed Project consist of the following:

	AM Peak Hour		PM Peak Hour	
Study Intersection	ICU	LOS	ICU	LOS
1. Alamitos Avenue at 7th Street	1.004	F	1.333	F
2. Alamitos Avenue at 6th Street	--	--	0.981	E
4. Alamitos Avenue at 4th Street	0.957	E	1.191	F
5. Alamitos Avenue at 3rd Street	1.072	F	0.949	E
6. Alamitos Avenue at Broadway	--	--	1.153	F

Although the proposed Project significantly impacts these five (5) study intersections under ICU methodology, there are no feasible mitigation measures that would mitigate the project's impact.

6.5.2 HCM Methodology

Table 6-7 summarizes the peak hour Level of Service results at the nine (9) key study intersection for Year 2020 traffic conditions utilizing the HCM methodology. The first column (1) of ICU/LOS values in *Table 6-7* presents a summary of existing traffic conditions utilizing the existing lane configurations (which can also be found in *Table 6-5*). The second column (2) lists Year 2020 cumulative traffic conditions (existing plus ambient growth traffic with cumulative projects). The third column (3) presents forecast Year 2020 Cumulative plus Project traffic conditions utilizing the proposed project lane configurations. The fourth column (4) indicates whether the Project will have a significant impact based on the LOS standards and significant impact criteria defined in this report.

6.5.2.1 Year 2020 Cumulative Traffic Conditions

As shown in Column (2) of *Table 6-7*, all nine (9) key study intersections are forecast to operate at an acceptable service level (LOS D or better) based on the HCM method of analysis.

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6.5.2.2 Year 2020 Cumulative Plus Project Traffic Conditions

Review of columns (3) and (4) of *Table 6-7* indicates that the proposed project will impact two (2) of the nine key study intersections based on the LOS standards and significant impact criteria defined in this report. The intersections significantly impacted by the proposed Project consist of the following:

	AM Peak Hour		PM Peak Hour	
Study Intersection	HCM (s/v)	LOS	HCM (s/v)	LOS
1. Alamitos Avenue at 7th Street	--	--	69.6	E
5. Alamitos Avenue at 4th Street	--	--	78.3	E

Although the proposed Project significantly impacts these two (2) study intersections under HCM methodology, there are no feasible mitigation measures that would mitigate the project's impact.

Appendix B presents the Year 2020 ICU/LOS and HCM/LOS calculations for the nine (9) signalized key study intersections.

7.0 QUEUING ANALYSIS

To validate the adequacy of the existing and proposed stacking/storage lengths as proposed by the Project, a Synchro queuing evaluation was prepared for the northbound and southbound left-turn and right-turn pockets along Alamitos Avenue, between 7th Street and Ocean Boulevard, with the proposed Project improvements. The queuing evaluation was conducted based on Existing Plus Project and Year 2020 Cumulative Plus Project traffic settings and utilizes the *Synchro 9.0/SimTraffic* 95th percentile delay methodology.

Table 7-1 summarizes the peak hour queuing results at the key study intersections for Existing Plus Project and Year 2020 Cumulative Plus Project traffic conditions. Review of *Table 7-1* shows that the proposed Project improvements along Alamitos Avenue generally provides adequate storage within the left-turn and/or right-turn lanes at all nine (9) key study intersections. However, the northbound left-turn pockets at Alamitos Avenue/4th Street and Alamitos Avenue/1st Street, northbound right-turn pocket at Alamitos Avenue/Broadway, and southbound left-turn pocket at Alamitos Avenue/3rd Street are not able to fully accommodate the projected queue lengths due to existing roadway constraints.

Appendix C presents the *Synchro9.0/SimTraffic* queuing worksheets for Existing Plus Project and Year 2020 Cumulative Plus Project traffic conditions for the nine (9) signalized key study intersections.

8.0 MULTIMODAL LEVEL OF SERVICE ASSESSMENT

In California, a multimodal/complete streets assessment is required by Law. The *California Complete Streets Act of 2008* (AB 1358, Chapter 657, 2009), was adopted into law on September 30, 2008. Commencing January 1, 2011, the bill requires, "that the legislative body of a city or county, upon any substantive revision of the circulation element of the general plan, modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, defined to include **motorists**, **pedestrians**, **bicyclists**, **children**, **persons with disabilities**, **seniors**, **movers of commercial goods**, and **users of public transportation**, in a manner that is suitable to the rural, suburban, or urban context of the general plan.

As part of the traffic study scope and consistent with the City of Long Beach Mobility Element, a detailed multimodal level of service (MMLOS) evaluation for Alamitos Avenue between 7th Street and Ocean Boulevard has been prepared. The MMLOS objectives are to evaluate the adequacy of existing motorist, transit, bicycle and/or pedestrian users along this corridor.

8.1 MMLOS Methodology

There are eight modes identified as part of the *AB 1358 Checklist* each of which has been assessed as part of the multimodal analysis. The methodology utilized for the first category, motorist, is based on HCS 2010 Street. HCS 2010 Streets is based on the 2010 HCM manual. Some of the key factors taken into consideration are the distances between key intersections, intersection parameters taken from the WEBSTER output sheets and segment information. The remaining seven key categories are based on a combination of *Fort Collins* methodology and *Florida Department of Transportation 2002 Quality / Level of Service Handbook*.

8.2 Multimodal Analysis

Table 8-1 summarizes the existing multimodal level of service results for the eight modes specified above. It should be noted that one of the eight categories, Movers of Commercial Goods, were omitted from this assessment since Alamitos Avenue is not classified as a truck route.

The first column (1) in *Table 8-1* presents the minimum acceptable level of service results for each of the user groups. The first column (1) in *Table 8-1* presents the minimum acceptable level of service results for each of the user groups. The second column (2) presents the calculated level of service for each user group. The third column (3) presents the percentage change between acceptable level of service and calculated level of service.

8.3 Existing Multimodal Level of Service Results

Review of *Table 8-1* indicates that the segment as a whole meets 67% of the criteria for a complete street.

8.4 Existing Plus Project Multimodal Level of Service Results

Table 8-2 summarizes the multimodal level of service results with implementation of the Project. The structure of this table is similar to that of *Table 8-1*. Review of *Table 8-2* indicates that the segment as a whole meets 64% of the criteria for a complete street. Please note that the reduction in criteria is due primarily to high prioritization towards the automobile. However, when comparing the existing MMLOS to the existing plus project MMLOS it is clear that the mobility of the motorist is reduced while the bicyclist is improved. Although the overall service level grade does not change for the pedestrian there are benefits to the pedestrian users which are also included within the appendix.

Appendix D presents the multimodal calculations worksheets.

9.0 FINDINGS AND CONCLUSIONS

Based on the above, the proposed "Complete Streets" is expected to impact traffic flow at certain locations along Alamitos Avenue. However, the implementation of the proposed Project will allow for a more balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, including motorist, pedestrians, and bicyclists. As noted in the City of Long Beach Mobility Element, some cities are adopting more flexible policies to solving traffic problems. For example, some communities have started accepting a lower (worse) automobile level of service standard in their downtowns and in urban neighborhoods or along transit corridors. By doing so, these cities are increasing capacity for other modes like transit and/or bikes. In addition, implementation of recent bikeway projects in Long Beach have helped to reduce the number of bike related collisions. Therefore, opportunities and constraints both exist and should be thoroughly considered prior to approval of the "Complete Streets".

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LINSCOTT LAW & GREENSPAN engineers

We appreciate the opportunity to work on this project. If you have any questions regarding this letter, please do not hesitate to call me at (949) 825-6175.

Sincerely,
Linscott, Law & Greenspan, Engineers

Richard E. Barretto, P.E.
Principal

cc: Shane S. Green, P.E., Transportation Engineer III

Attachments

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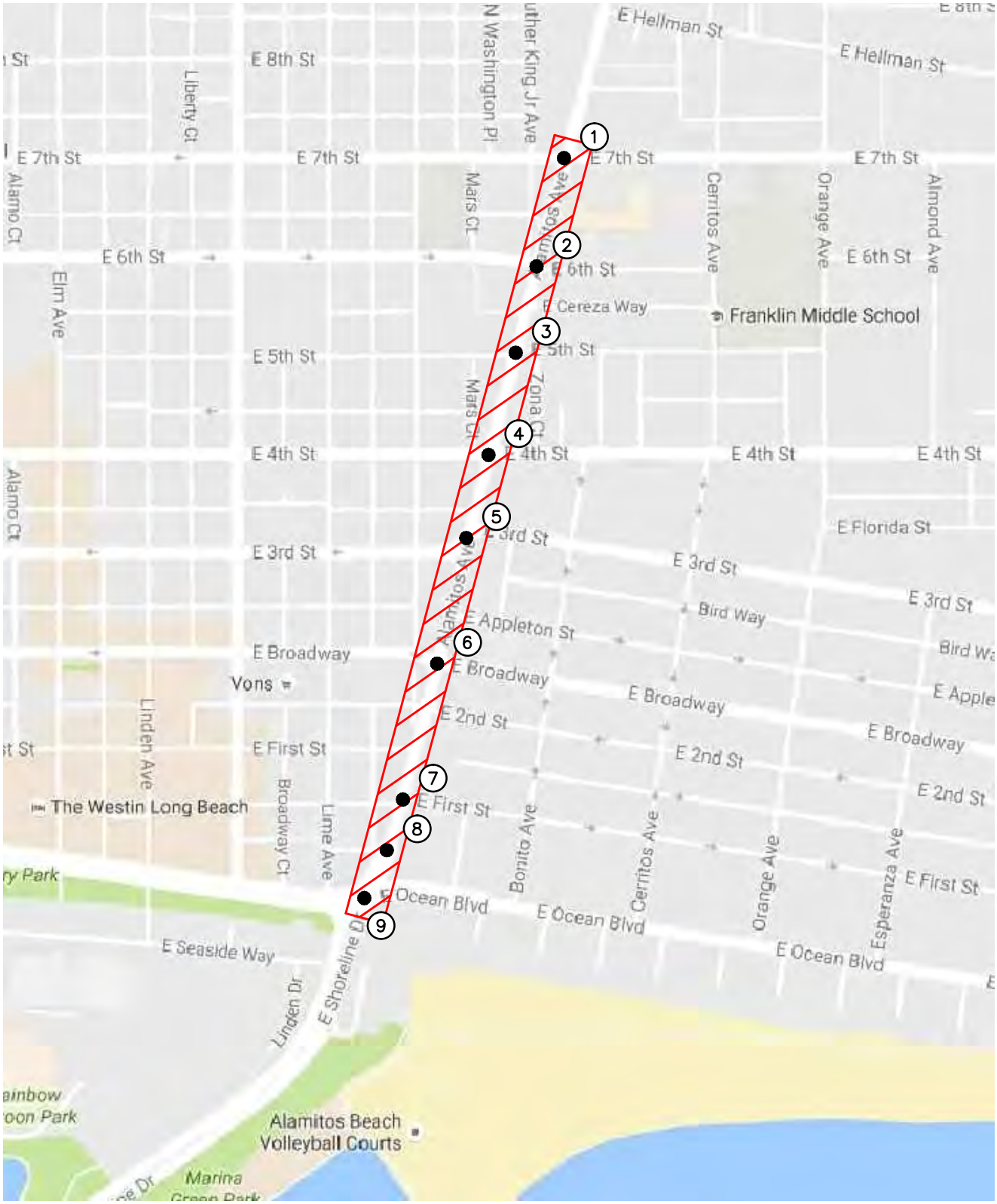
TRAFFIC
STATE OF CALIFORNIA



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: GOOGLE

KEY

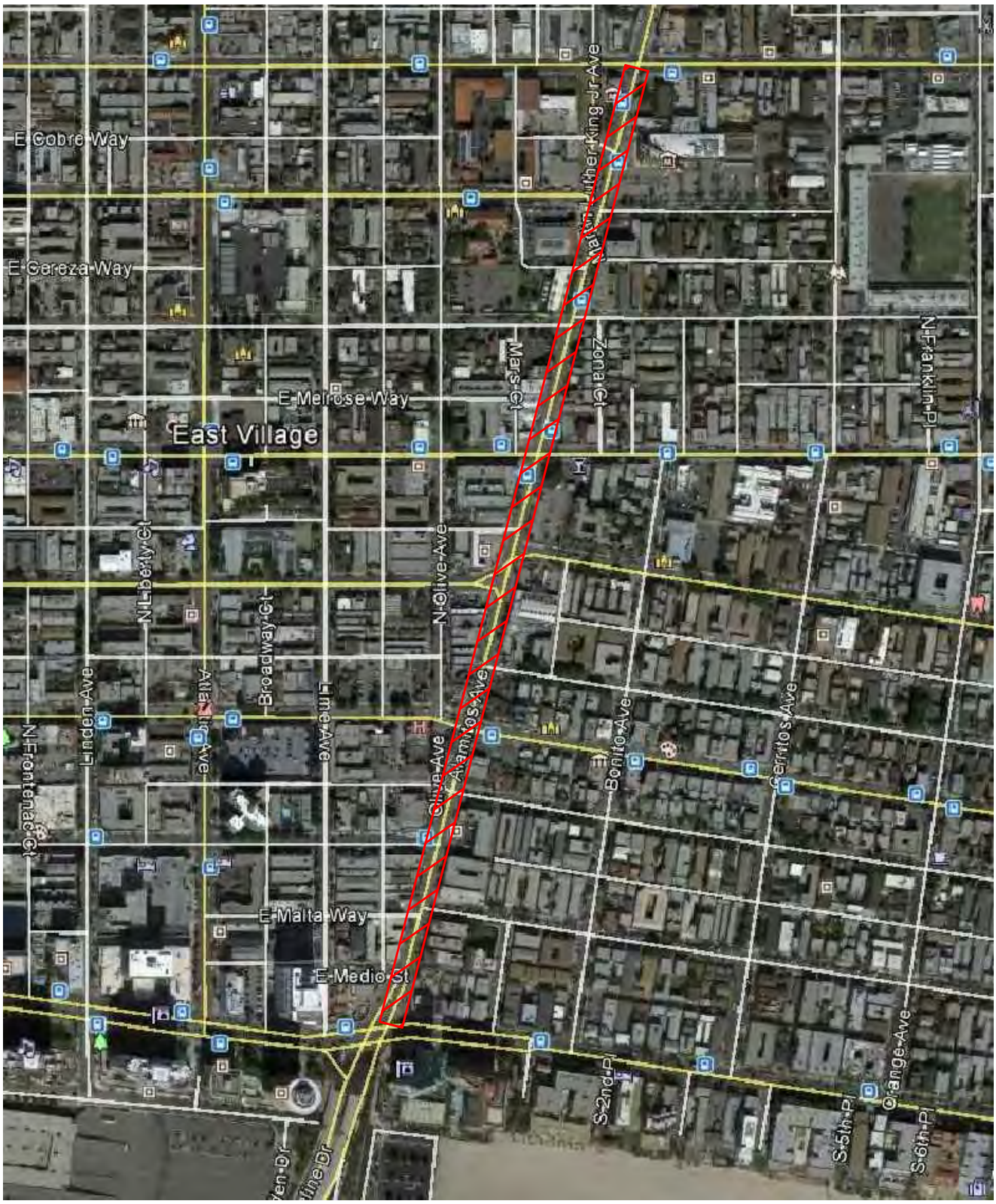
(#) = STUDY INTERSECTION

= PROJECT LIMITS

FIGURE 1-1

VICINTY MAP

ALAMITOS AVENUE COMPLETE STREETS IMPROVEMENT PROJECT, LONG BEACH



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N NO SCALE

SOURCE: GOOGLE

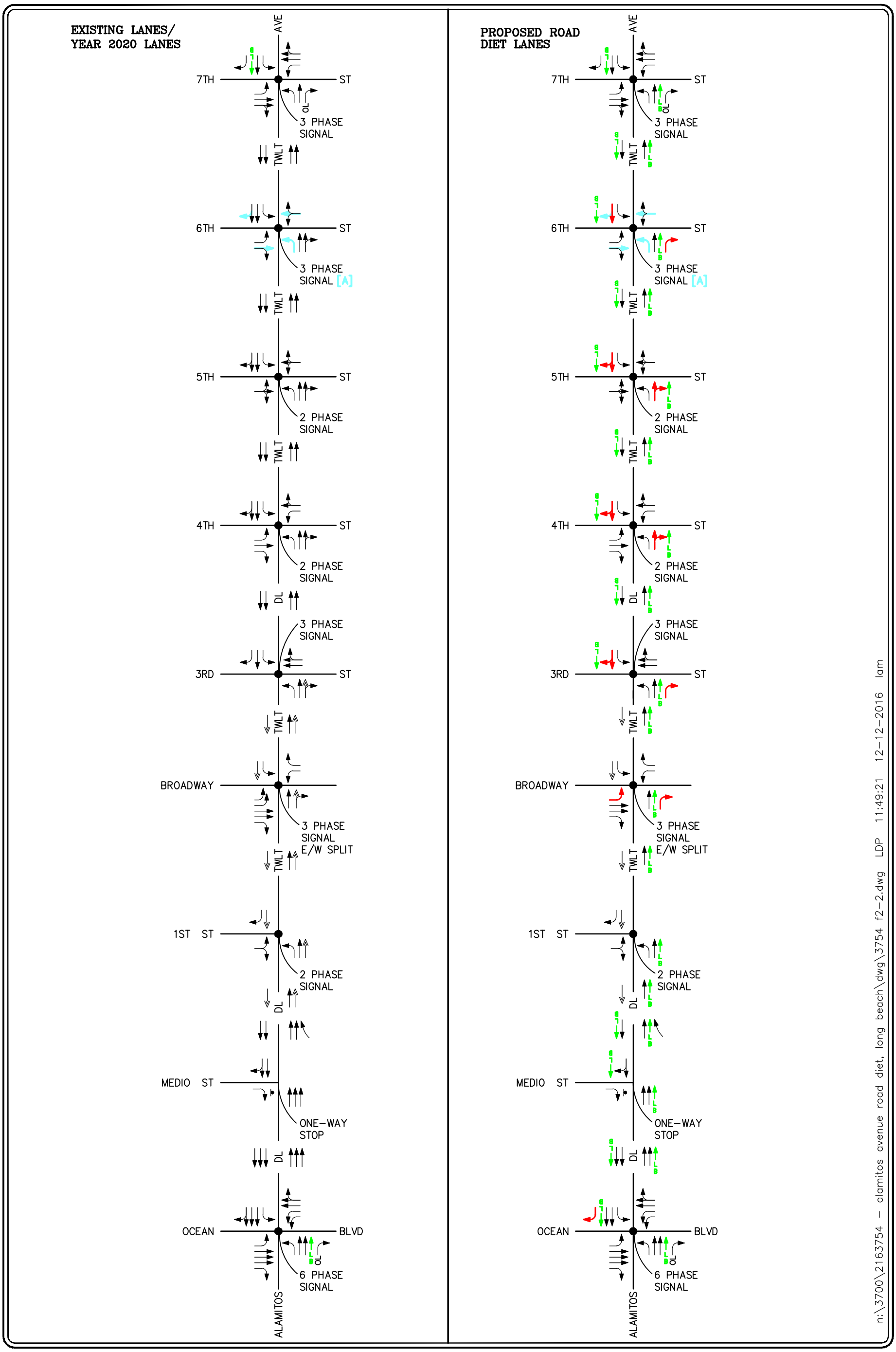
KEY

= PROJECT LIMITS

FIGURE 2-1

EXISTING AERIAL

ALAMITOS AVENUE COMPLETE STREETS IMPROVEMENT PROJECT, LONG BEACH



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NO SCALE

KEY

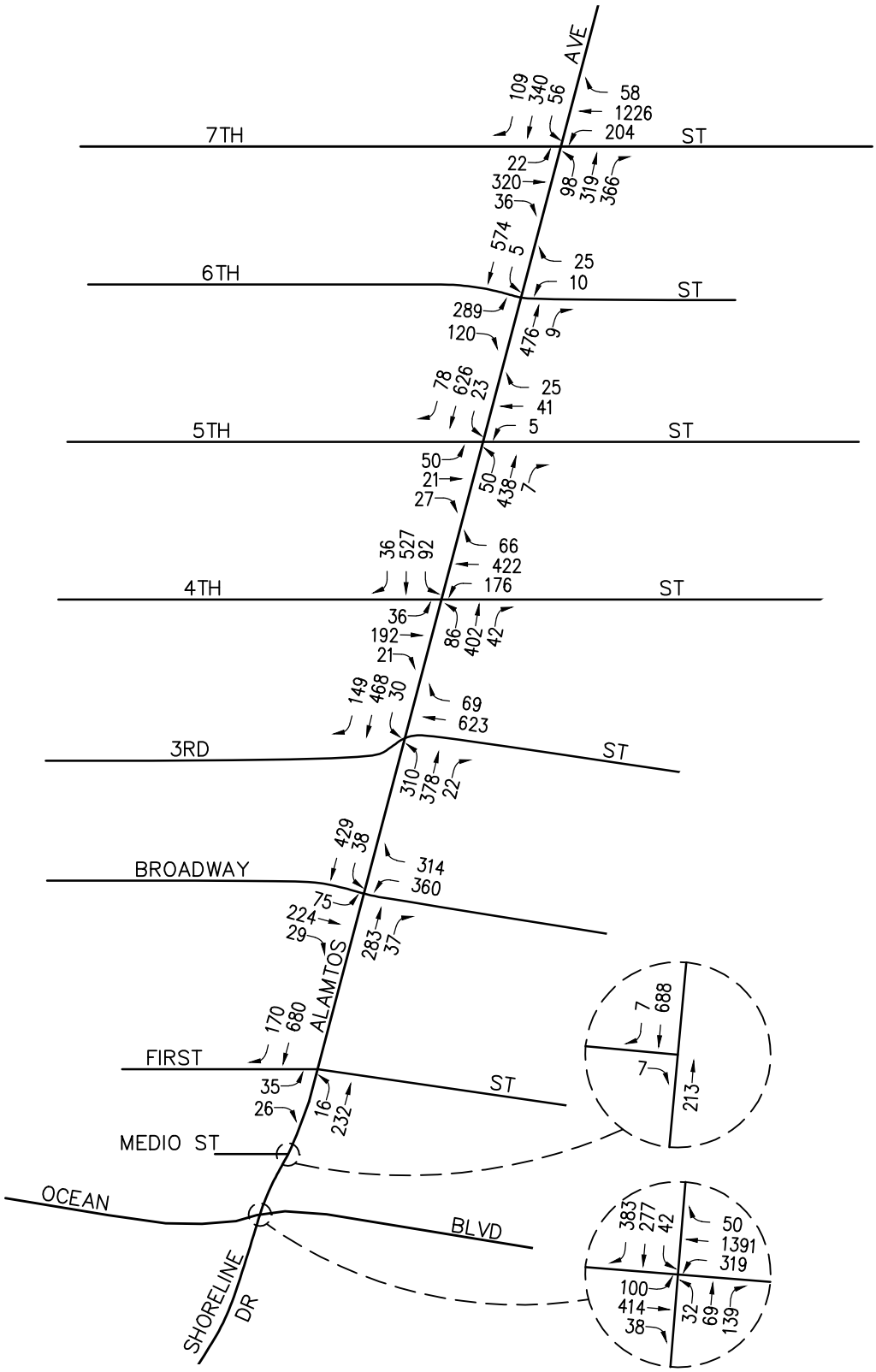
= EXISTING LANE
= BIKE LANE
= SHARROW
= PROPOSED ROAD DIET LANE
= YEAR 2020 LANE
[A] = INCLUDES ADDITION OF CROSSWALKS ON THE NORTH AND WEST LEGS

TWLT = TWO-WAY LEFT-TURN LANE
DL = DOUBLE YELLOW STRIPED
OL = OVERLAP

FIGURE 2-2

ALAMITOS AVENUE EXISTING LANE GEOMETRY VS COMPLETE STREETS IMPROVEMENT GEOMETRY

ALAMITOS AVENUE COMPLETE STREETS IMPROVEMENT PROJECT, LONG BEACH



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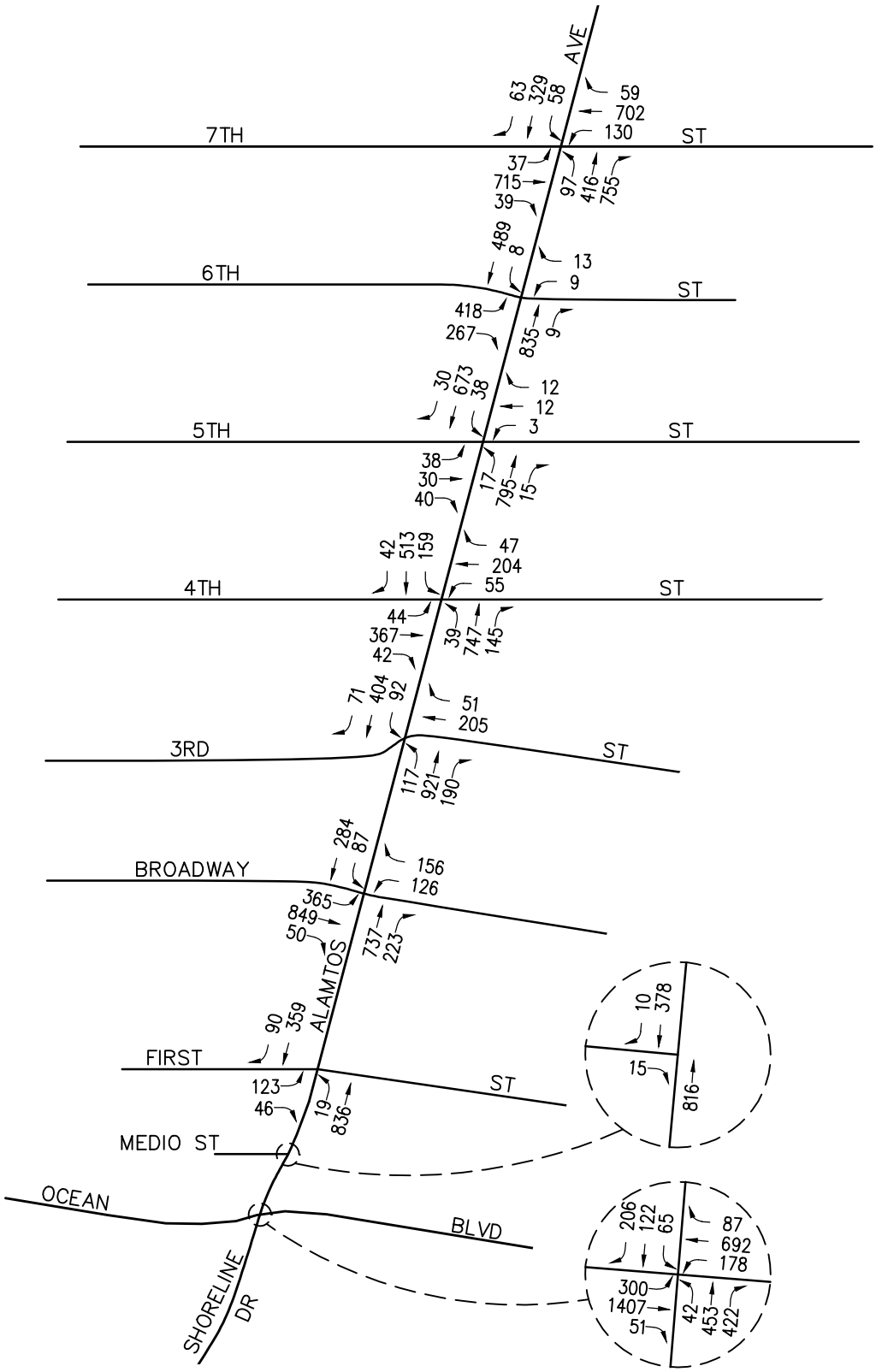
LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

FIGURE 3-1

EXISTING AM PEAK HOUR TRAFFC VOLUMES

ALAMITOS AVENUE COMPLETE STREETS IMPROVEMENT PROJECT, LONG BEACH



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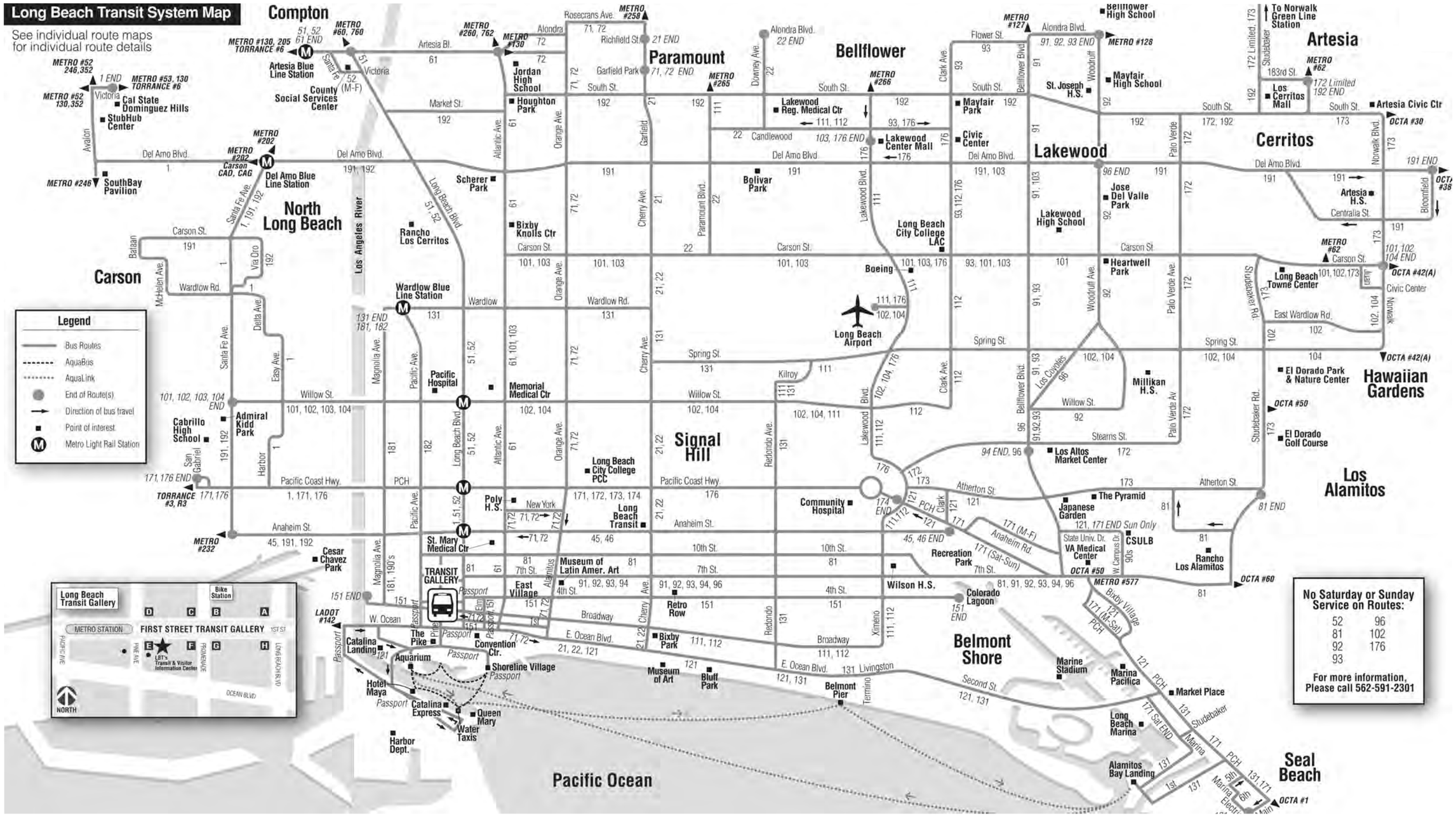
N NO SCALE

FIGURE 3-2

EXISTING PM PEAK HOUR TRAFFC VOLUMES

ALAMITOS AVENUE COMPLETE STREETS IMPROVEMENT PROJECT, LONG BEACH



SOURCE: CITY OF LONG BEACH

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

FIGURE 3–3

LONG BEACH TRANSIT MAP

ALAMITOS AVENUE COMPLETE STREETS IMPROVEMENT PROJECT, LONG BEACH

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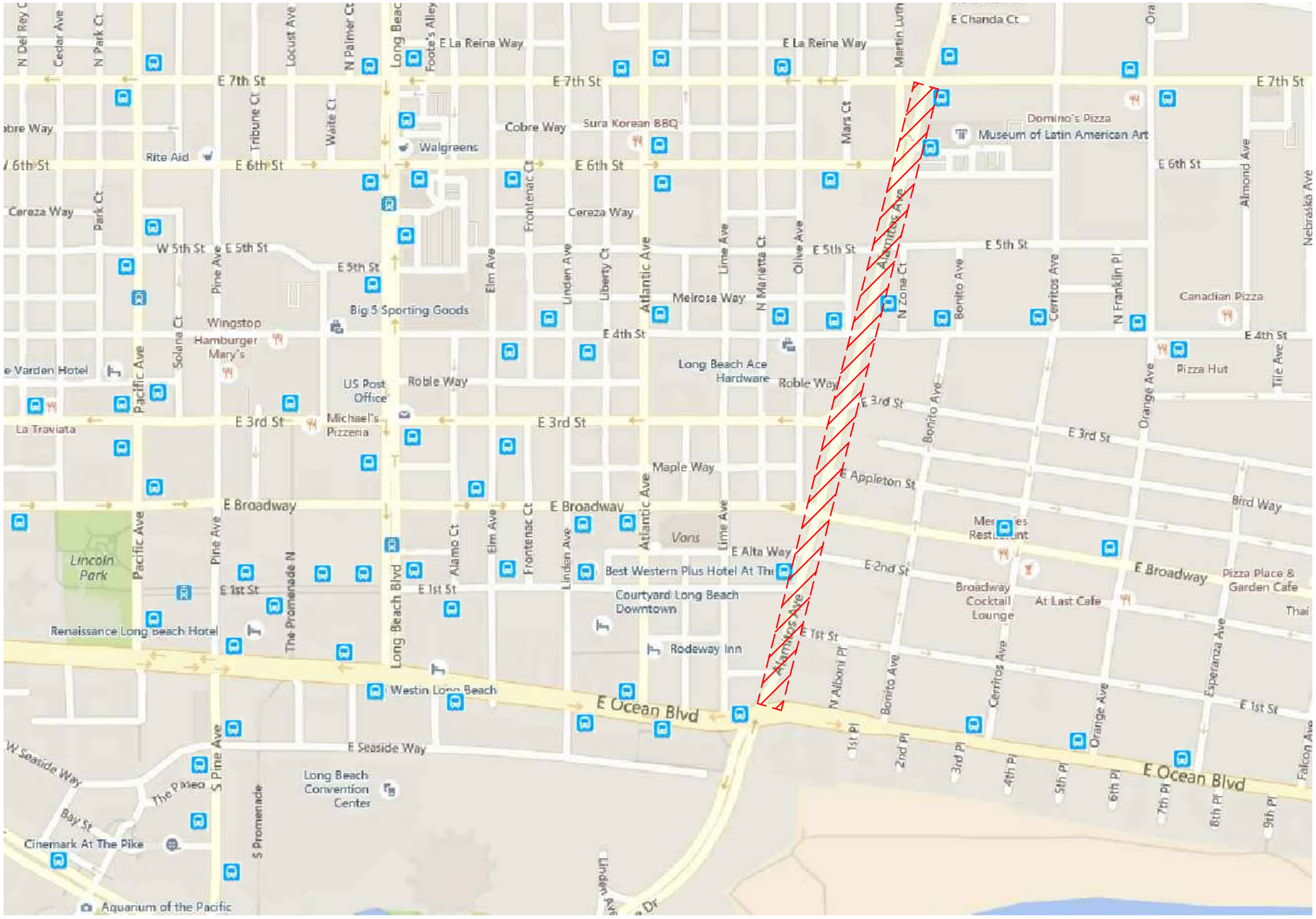

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N NO SCALE

SOURCE: GOOGLE

KEY

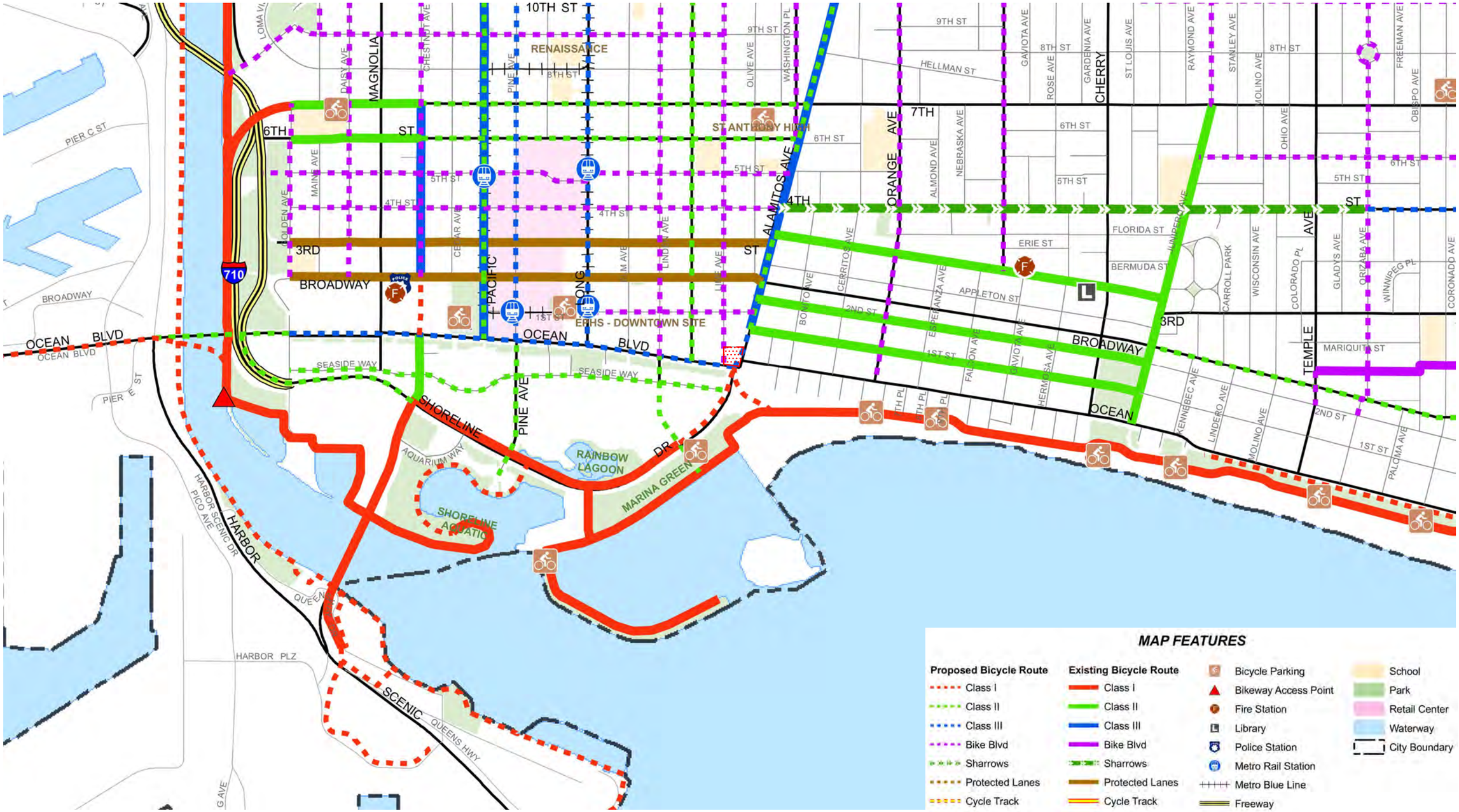
= PROJECT LIMITS

= TRANSIT STOP

FIGURE 3-4

TRANSIT STOP LOCATIONS

ALAMITOS AVENUE COMPLETE STREETS IMPROVEMENT PROJECT, LONG BEACH



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N NO SCALE

SOURCE: CITY OF LONG BEACH

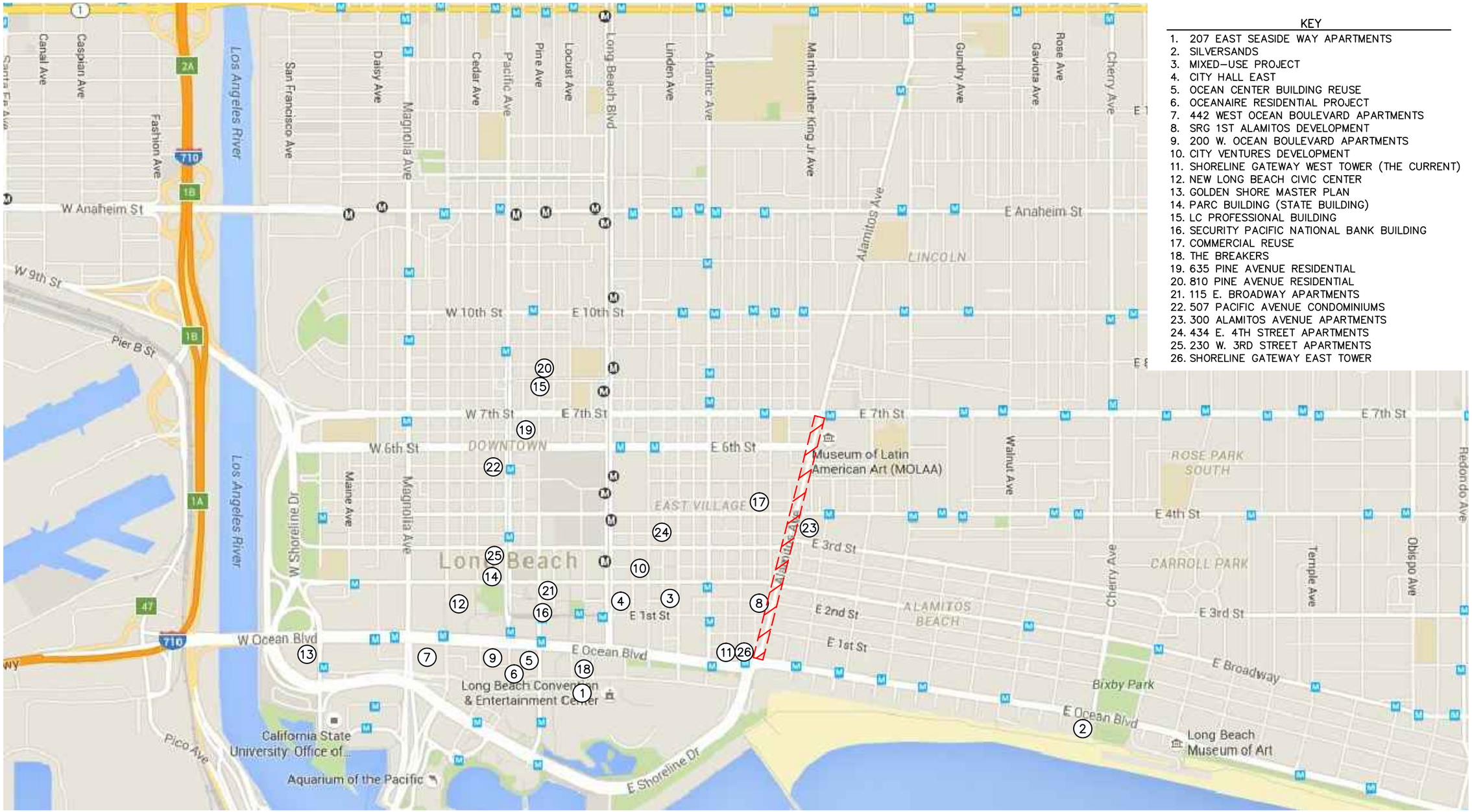
KEY

= PROJECT SITE

FIGURE 3-5

LONG BEACH BIKEWAY FACILITIES

ALAMITOS AVENUE COMPLETE STREETS IMPROVEMENT PROJECT, LONG BEACH



KEY

1. 207 EAST SEASIDE WAY APARTMENTS
2. SILVERSANDS
3. MIXED–USE PROJECT
4. CITY HALL EAST
5. OCEAN CENTER BUILDING REUSE
6. OCEANAIRE RESIDENTIAL PROJECT
7. 442 WEST OCEAN BOULEVARD APARTMENTS
8. SRG 1ST ALAMITOS DEVELOPMENT
9. 200 W. OCEAN BOULEVARD APARTMENTS
10. CITY VENTURES DEVELOPMENT
11. SHORELINE GATEWAY WEST TOWER (THE CURRENT)
12. NEW LONG BEACH CIVIC CENTER
13. GOLDEN SHORE MASTER PLAN
14. PARC BUILDING (STATE BUILDING)
15. LC PROFESSIONAL BUILDING
16. SECURITY PACIFIC NATIONAL BANK BUILDING
17. COMMERCIAL REUSE
18. THE BREAKERS
19. 635 PINE AVENUE RESIDENTIAL
20. 810 PINE AVENUE RESIDENTIAL
21. 115 E. BROADWAY APARTMENTS
22. 507 PACIFIC AVENUE CONDOMINIUMS
23. 300 ALAMITOS AVENUE APARTMENTS
24. 434 E. 4TH STREET APARTMENTS
25. 230 W. 3RD STREET APARTMENTS
26. SHORELINE GATEWAY EAST TOWER

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N NO SCALE

KEY

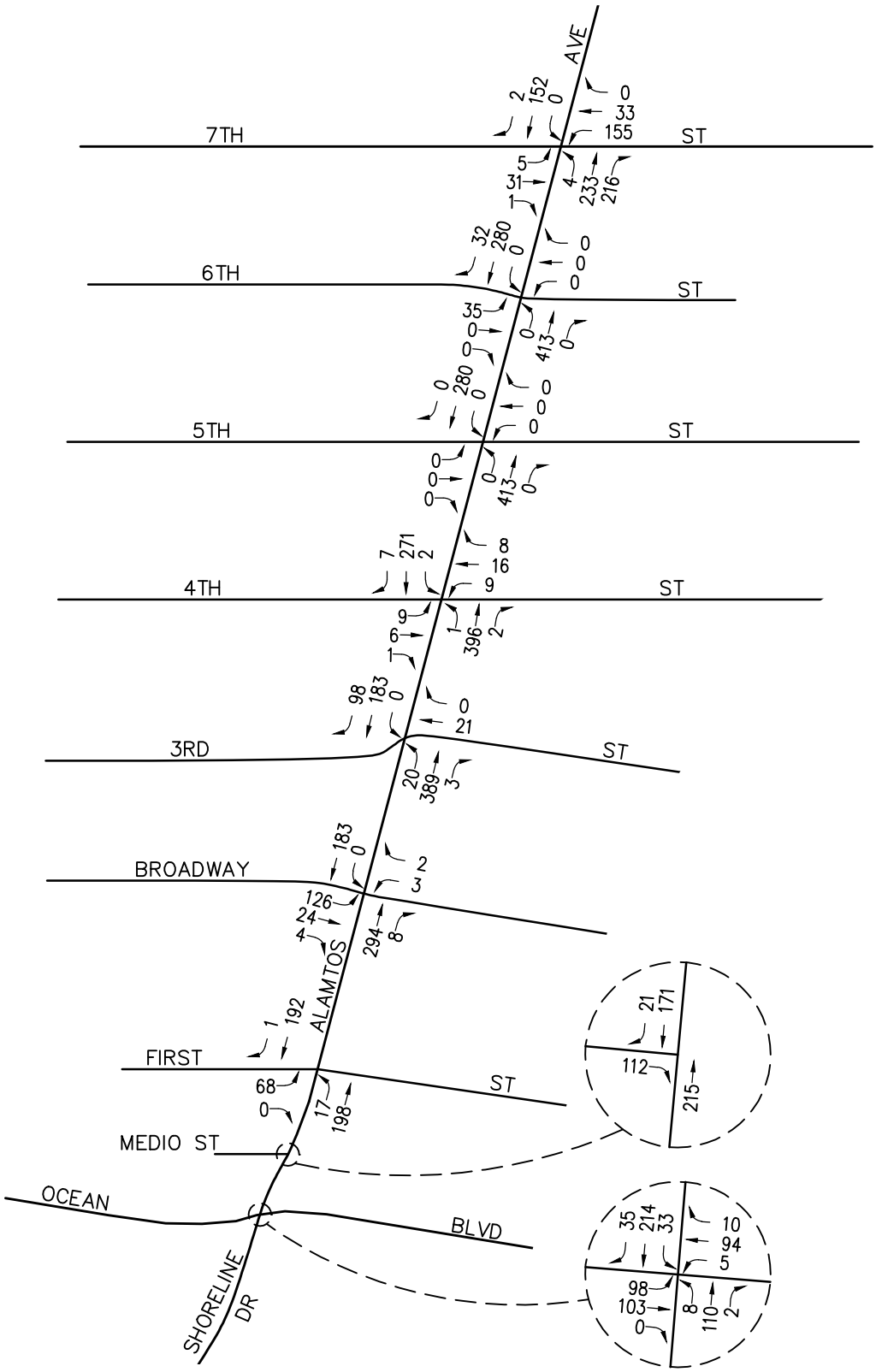
(#) = CUMULATIVE PROJECT LOCATION

= PROJECT LIMITS

FIGURE 4–1

LOCATION OF CUMULATIVE PROJECTS

ALAMITOS AVENUE COMPLETE STREETS IMPROVEMENT PROJECT, LONG BEACH



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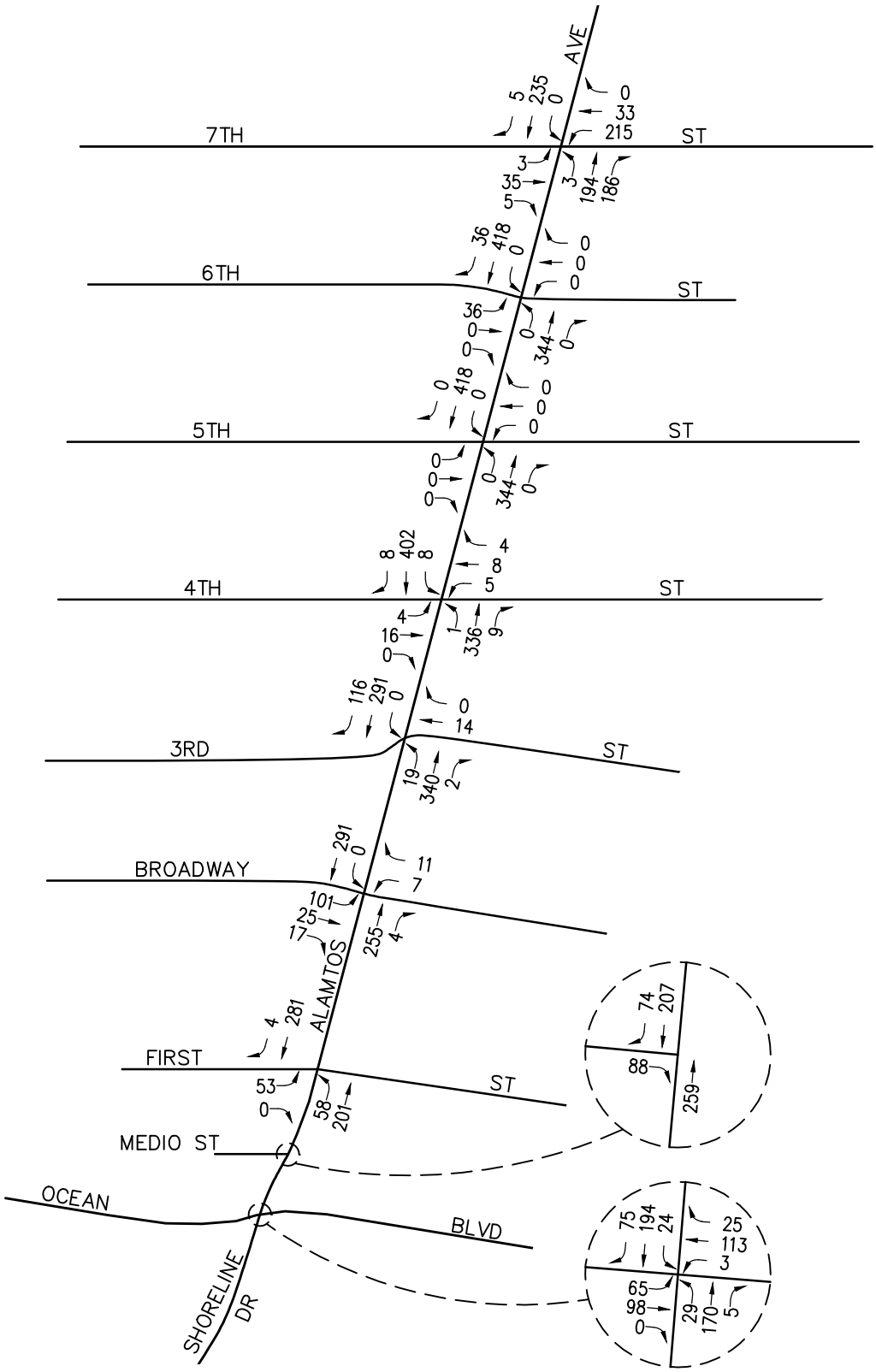
N NO SCALE

FIGURE 4-2

AM PEAK HOUR CUMULATIVE PROJECT TRAFFIC VOLUMES

ALAMITOS AVENUE COMPLETE STREETS IMPROVEMENT PROJECT, LONG BEACH



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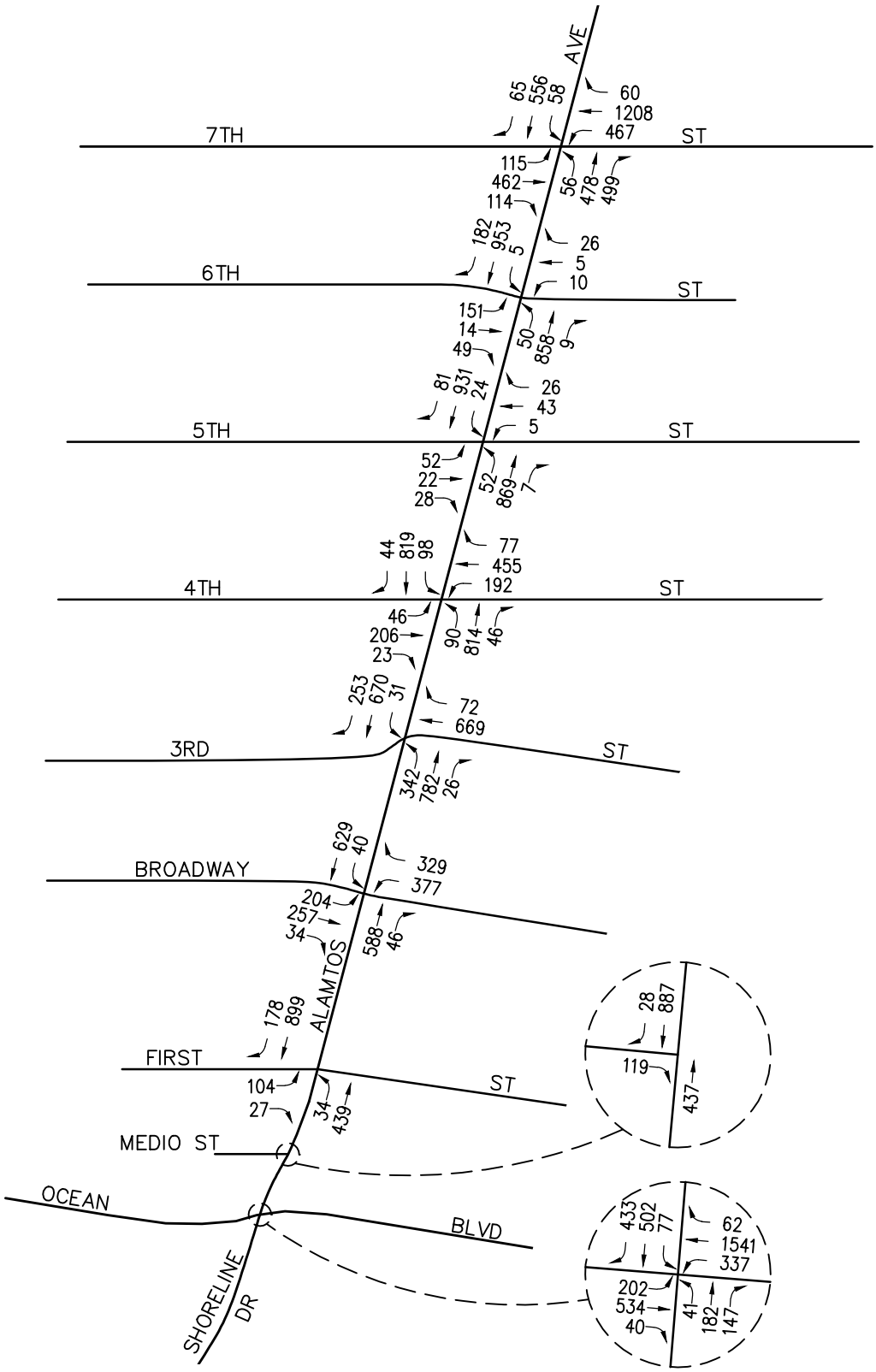
N NO SCALE

FIGURE 4-3

PM PEAK HOUR CUMULATIVE PROJECT TRAFFIC VOLUMES

ALAMITOS AVENUE COMPLETE STREETS IMPROVEMENT PROJECT, LONG BEACH



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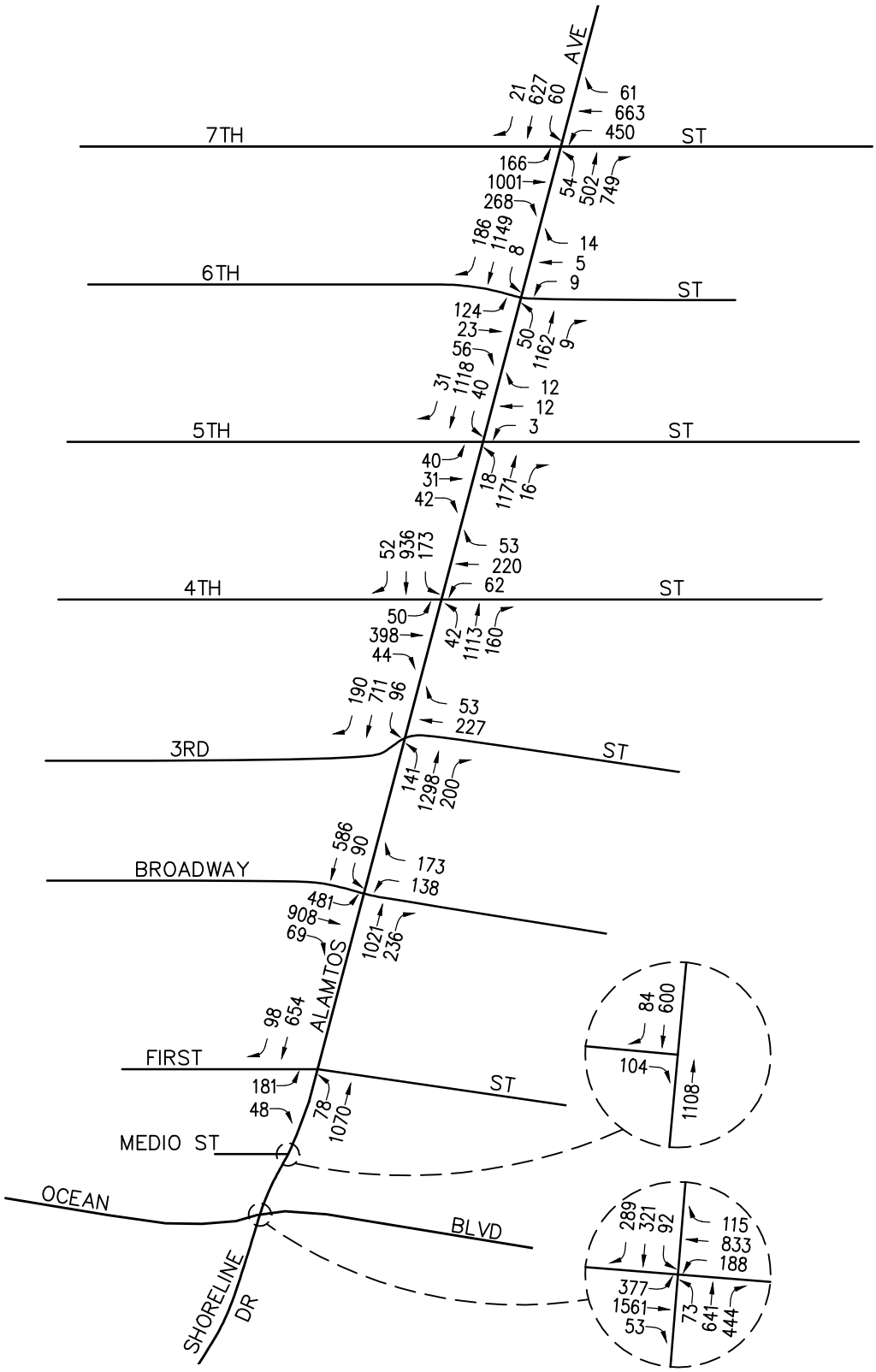
LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

FIGURE 4-4

YEAR 2020 CUMULATIVE AM PEAK HOUR TRAFFIC VOLUMES

ALAMITOS AVENUE COMPLETE STREETS IMPROVEMENT PROJECT, LONG BEACH



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N NO SCALE

FIGURE 4-5

YEAR 2020 CUMULATIVE PM PEAK HOUR TRAFFIC VOLUMES

ALAMITOS AVENUE COMPLETE STREETS IMPROVEMENT PROJECT, LONG BEACH

TABLE 4-1

LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[1]
ALAMITOS AVENUE COMPLETE STREETS CORRIDOR IMPROVEMENTS, LONG BEACH

No.	Cumulative Project	Location	Description
1.	207 East Seaside Way Apartments	207 East Seaside Way	117 apartments
2.	Silversands	2010 East Ocean Boulevard	40 hotel rooms and 56 DU condominiums
3.	Mixed-Use Project	135 Linden Avenue	44 apartments and 1,257 SF retail
4.	City Hall East	100 Long Beach Boulevard	156 apartments and 3,621 SF retail
5.	Ocean Center Building Reuse	110 West Ocean Boulevard	74 apartments, 5,000 SF restaurant and 5,400 SF retail
6.	Oceanaire Residential Project	150 West Ocean Boulevard	216 apartments
7.	442 West Ocean Boulevard Apartments	442 West Ocean Boulevard	94 DU apartments
8.	SRG 1st Alamitos Development	101 Alamitos Avenue	136 DU condominiums and 2,700 SF commercial
9.	200 W. Ocean Boulevard Apartments	200 W. Ocean Boulevard	94 DU apartments and 4,597 SF commercial
10.	City Ventures Development	227 Elm Avenue	40 DU townhomes
11.	Shoreline Gateway West Tower (The Current)	707 E. Ocean Boulevard, north of Ocean Boulevard, east of Broadway Court and west of Alamitos Avenue	223 apartment homes and 9,182 SF of retail/restaurant, consisting of 2,636 SF of retail space and 6,546 SF of café/restaurant uses. [2]
12.	New Long Beach Civic Center	North of Ocean Boulevard and south of Broadway, between Magnolia Avenue and Pacific Avenue in downtown Long Beach	3rd & Pacific – 163 condominiums; Civic Center – 270,000 SF City Hall and 240,000 SF Port Administration; Lincoln Park – 92,000 SF Library and 3.17 Acres City Park; Center Block – 580 apartment homes, 200-room hotel, 32,000 SF of retail and 8,000 SF of restaurant uses. Existing 138,000 SF Main Library, 283,000 SF City Hall and 2.60 acre City Park to be replaced.
13.	Golden Shore Master Plan	East side and west side of Golden Shore, south of Ocean Boulevard and north of Shoreline Drive	1,110 DU high-rise residential condominiums, 340,000 SF office, 27,000 SF retail, 27,000 SF banquet area, and 400 room hotel

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1 Source: City of Long Beach Planning Department.

2 To provide a conservative assessment the approved retail mix (i.e. 9,182 SF of retail/restaurant space was used in place of what was built (i.e. 6,502 SF of retail/restaurant space), which results in 6 more AM peak hour trips and 24 more PM peak hour trips.

TABLE 4-1 (CONTINUED)
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[3]
ALAMITOS AVENUE COMPLETE STREETS CORRIDOR IMPROVEMENTS, LONG BEACH

No.	Cumulative Project	Location	Description
14.	Parc Building (State Building)	245 W. Broadway	222 DU apartments with 8,500 SF retail
15.	LC Professional Building	117 E. 8th Street	91 bed assisted living residential care facility
16.	Security Pacific National Bank Building	110 Pine Avenue	118 DU condominiums
17.	Commercial Reuse	743 E. 4th Street	3,657 SF restaurant with bar
18.	The Breakers	210 E. Ocean Boulevard	202 DU apartments
19.	635 Pine Avenue Residential	635 Pine Avenue	142 DU apartments
20.	810 Pine Avenue Residential	810 Pine Avenue	64 DU apartments
21.	115 E. Broadway Apartments	115 E. Broadway	141 DU apartments with 3,650 SF retail
22.	507 Pacific Avenue Condominiums	507 Pacific Avenue	134 DU condominiums with 7,200 SF commercial space
23.	300 Alamitos Avenue Apartments	300 Alamitos Avenue	77 DU apartments
24.	434 E. 4th Street Apartments	434 E. 4th Street	49 DU apartments with 2,350 SF retail
25.	230 W. 3rd Street Apartments	230 W. 3rd Street	163 DU apartments
26.	Shoreline Gateway East Tower	707 E. Ocean Boulevard	315 DU apartments 6,711 SF restaurant/retail

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[3] Source: City of Long Beach Planning Department.

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TABLE 4-2

CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST[4]
ALAMITOS AVENUE COMPLETE STREETS CORRIDOR IMPROVEMENTS, LONG BEACH

Cumulative Project Description	Daily 2-way	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
1. 207 East Seaside Way Apartments[5]	778	12	48	60	47	26	73
2. Silversands	652	16	30	46	31	22	53
3. Mixed-Use Project	293	4	18	22	18	9	27
4. City Hall East	1,192	18	65	83	69	41	110
5. Ocean Center Building Reuse	1,359	41	56	97	69	46	115
6. Oceanaire Residential Project[6]	1,436	22	89	111	86	48	134
7. 442 West Ocean Boulevard Apartments[7]	625	10	38	48	38	20	58
8. SRG 1st Alamitos Development	790	10	50	60	48	23	71
9. 200 W. Ocean Boulevard	801	12	40	52	43	26	69
10. City Ventures Development	232	3	15	18	14	7	21
11. Shoreline Gateway West Tower (The Current)	1,781	28	89	117	101	62	163
12. New Long Beach Civic Center[8]	10,923	377	294	671	247	305	552
13. Golden Shore Master Plan	11,004	640	432	1,072	444	648	1,092
14. Parc Building (State Building)	1,476	23	90	113	90	48	138
15. LC Professional Building	242	8	5	13	9	11	20
16. Security Pacific National Bank	686	9	43	52	41	20	61
17. Commercial Reuse	418	20	16	36	13	8	21
18. The Breakers	1,343	21	82	103	81	44	125
19. 635 Pine Avenue Residential	944	14	58	72	57	31	88
20. 810 Pine Avenue Residential	426	7	26	33	26	14	40
21. 115 E. Broadway Apartments	938	14	58	72	57	30	87
22. 507 Pacific Avenue Condominiums	779	10	49	59	47	23	70
23. 300 Alamitos Avenue Apartments	512	8	31	39	31	17	48
24. 434 E. 4th Street Apartments	326	5	20	25	20	10	30
25. 230 W. 3rd Street Apartments	1,084	17	66	83	66	35	101
26. Shoreline Gateway East Tower	3,105	48	133	181	165	113	278
Total Cumulative Projects Trip Generation Potential	**44,145**	**1,397**	**1,941**	**3,338**	**1,958**	**1,687**	**3,645**

4 Source: *Trip Generation*, 9th Edition, Institute of Transportation Engineers (ITE) [Washington, D.C. (2012)].

5 Source: *207 East Seaside Way Apartments Project Traffic Impact Analysis*, prepared by LLG.

6 Source: *Oceanaire Apartments Traffic Impact Analysis*, prepared by Michael Baker International.

7 Source: *442 West Ocean Boulevard Apartments Project Traffic Impact Analysis*, prepared by LLG.

8 Source: *Traffic Impact Analysis for the New Long Beach Civic Center Project*, prepared by LLG.

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TABLE 6-1

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS (ICU METHODOLOGY)[9]
ALAMITOS AVENUE COMPLETE STREETS CORRIDOR IMPROVEMENTS, LONG BEACH

Level of Service (LOS)	Intersection Capacity Utilization Value (V/C)	Level of Service Description
A	≤ 0.60	EXCELLENT. No vehicle waits longer than one red light, and no approach phase is fully used.
B	0.61 – 0.70	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.71 – 0.80	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.81 – 0.90	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.91 – 1.00	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.00	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Potentially very long delays with continuously increasing queue lengths.

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9 Source: *Transportation Research Board Circular 212 – Interim Materials on Highway Capacity*.

TABLE 6-2

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS (HCM METHODOLOGY)[10]
ALAMITOS AVENUE COMPLETE STREETS CORRIDOR IMPROVEMENTS, LONG BEACH

Level of Service (LOS)	Control Delay Per Vehicle (seconds/vehicle)	Level of Service Description
A	≤ 10.0	LOS A describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume –to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
B	> 10.0 and ≤ 20.0	LOS B describes operations with a control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume –to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
C	> 20.0 and ≤ 35.0	LOS C describes operations with a control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e. one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
D	> 35.0 and ≤ 55.0	LOS D describes operations with a control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
E	> 55.0 and ≤ 80.0	LOS E describes operations with a control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
F	≥ 80.0	LOS F describes operations with a control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

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[10] Source: *Highway Capacity Manual 2010,* Chapter 18 (Signalized Intersections).

TABLE 6-3

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS[11]
ALAMITOS AVENUE COMPLETE STREETS CORRIDOR IMPROVEMENTS, LONG BEACH

Level of Service (LOS)	Highway Capacity Manual Delay Value (sec/veh)	Level of Service Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

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11 Source: *Highway Capacity Manual 2010*, Chapter 19 (Unsignalized Intersections).

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TABLE 6-4

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY (ICU METHODOLOGY)
ALAMITOS AVENUE COMPLETE STREETS CORRIDOR IMPROVEMENTS, LONG BEACH

Key Intersection		Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions[12]		(3) Significant Impact	
			ICU	LOS	ICU	LOS	Increase	Yes/No
1.	Alamitos Avenue at 7th Street	AM	0.825	D	0.825	D	0.000	No
		PM	0.763	C	**0.975**	**E**	**0.212**	**Yes**
2.	Alamitos Avenue at 6th Street	AM	0.502	A	0.581	A	0.079	No
		PM	0.664	B	0.822	D	0.158	No
3.	Alamitos Avenue at 5th Street	AM	0.427	A	0.547	A	0.120	No
		PM	0.446	A	0.599	A	0.153	No
4.	Alamitos Avenue at 4th Street	AM	0.657	B	0.733	C	0.076	No
		PM	0.742	C	**0.921**	**E**	**0.179**	**Yes**
5.	Alamitos Avenue at 3rd Street	AM	0.853	D	0.846	D	-0.007	No
		PM	0.577	A	0.706	C	0.129	No
6.	Alamitos Avenue at Broadway	AM	0.713	C	0.613	B	-0.100	No
		PM	0.867	D	**0.928**	**E**	**0.061**	**Yes**
7.	Alamitos Avenue at 1st Street	AM	0.573	A	0.473	A	-0.100	No
		PM	0.467	A	0.628	B	0.161	No
8.	Alamitos Avenue at Medio Street[13]	AM	--	--	--	--	--	--
		PM	--	--	--	--	--	--
9.	Alamitos Avenue/Shoreline Drive at Ocean Boulevard	AM	0.779	C	0.679	B	-0.100	No
		PM	0.854	D	0.754	C	-0.100	No

Notes:

- LOS = Level of Service, please refer to *Tables 6-1* through *6-3* for the LOS definitions
- s/v = seconds per vehicle (delay); **Bold ICU/LOS values** indicate adverse service levels based on the LOS standards mentioned in this report

12 Alamitos Avenue, between 6th Street and Ocean Boulevard, includes a ten percent reduction (0.10) to account for the installation of support ITS/ATCS measures to improve efficient of traffic signals along this corridor.

13 Alamitos Avenue at Medio Street is a stop controlled intersection and the level of service results can be found in *Table 6-5*.

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TABLE 6-5

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY (HCM METHODOLOGY)
ALAMITOS AVENUE COMPLETE STREETS CORRIDOR IMPROVEMENTS, LONG BEACH

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Significant Impact	
		HCM (s/v)	LOS	HCM (s/v)	LOS	Increase (s/v)	Yes/No
1. Alamitos Avenue at 7th Street	AM	24.8	C	24.9	C	0.1	No
	PM	22.3	C	26.3	C	4.0	No
2. Alamitos Avenue at 6th Street	AM	6.5	A	14.8	B	8.3	No
	PM	14.3	B	15.2	B	0.9	No
3. Alamitos Avenue at 5th Street	AM	3.3	A	6.8	A	3.5	No
	PM	4.0	A	4.5	A	0.5	No
4. Alamitos Avenue at 4th Street	AM	16.4	B	20.4	C	4.0	No
	PM	11.7	B	14.2	B	2.5	No
5. Alamitos Avenue at 3rd Street	AM	7.4	A	14.2	B	6.8	No
	PM	6.0	A	9.8	A	3.8	No
6. Alamitos Avenue at Broadway	AM	15.4	B	18.8	B	3.4	No
	PM	22.4	C	30.2	C	7.8	No
7. Alamitos Avenue at 1st Street	AM	4.8	A	4.1	A	0.0[14]	No
	PM	6.3	A	8.4	A	2.1	No
8. Alamitos Avenue at Medio Street	AM	10.6	B	13.3	B	2.7	No
	PM	9.5	A	10.5	B	1.0	No
9. Alamitos Avenue/Shoreline Drive at Ocean Boulevard	AM	40.4	D	40.4	D	0.0	No
	PM	43.3	D	43.3	D	0.0	No

Notes:

- LOS = Level of Service, please refer to *Tables 6-1* through *6-3* for the LOS definitions
- s/v = seconds per vehicle (delay); **Bold HCM/LOS values** indicate adverse service levels based on the LOS standards mentioned in this report

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14 Theoretical negative increase, which is possible with HCM calculations, is denoted as an increase of 0.0 s/v.

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TABLE 6-6

YEAR 2020 PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY (ICU METHODOLOGY)
ALAMITOS AVENUE COMPLETE STREETS CORRIDOR IMPROVEMENTS, LONG BEACH

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Year 2020 Cumulative Traffic Conditions		(3) Year 2020 Cumulative Plus Project Traffic Conditions[15]		(4) Significant Impact	
		ICU	LOS	ICU	LOS	ICU	LOS	Increase	Yes/No
1. Alamitos Avenue at 7th Street	AM	0.825	D	**1.004**	**F[16]**	**1.004**	**F[16]**	0.000	No
	PM	0.763	C	**1.253**	**F[16]**	**1.333**	**F[16]**	**0.080**	**Yes**
2. Alamitos Avenue at 6th Street	AM	0.502	A	0.626	B[16]	0.881	D[16]	0.255	No
	PM	0.664	B	0.663	B[16]	**0.981**	**E[16]**	**0.318**	**Yes**
3. Alamitos Avenue at 5th Street	AM	0.427	A	0.527	A	0.744	C	0.217	No
	PM	0.446	A	0.568	A	0.839	D	0.271	No
4. Alamitos Avenue at 4th Street	AM	0.657	B	0.787	C	**0.957**	**E**	**0.170**	**Yes**
	PM	0.742	C	0.893	D	**1.191**	**F**	**0.298**	**Yes**
5. Alamitos Avenue at 3rd Street	AM	0.853	D	**1.014**	**F**	**1.072**	**F**	**0.058**	**Yes**
	PM	0.577	A	0.770	C	**0.949**	**E**	**0.179**	**Yes**
6. Alamitos Avenue at Broadway	AM	0.713	C	0.859	D	0.806	D	-0.053	No
	PM	0.867	D	**0.991**	**E**	**1.153**	**F**	**0.162**	**Yes**
7. Alamitos Avenue at 1st Street	AM	0.573	A	0.765	C	0.665	B	-0.100	No
	PM	0.467	A	0.701	C	0.812	D	0.111	No
8. Alamitos Avenue at Medio Street[17]	AM	--	--	--	--	--	--	--	--
	PM	--	--	--	--	--	--	--	--
9. Alamitos Avenue/Shoreline Drive at Ocean Boulevard	AM	0.779	C	**0.964**	**E**	0.864	D	-0.100	No
	PM	0.854	D	**0.982**	**E**	0.882	D	-0.100	No

Notes:

- LOS = Level of Service, please refer to *Tables 6-1* through *6-3* for the LOS definitions
- s/v = seconds per vehicle (delay); **Bold ICU/LOS values** indicate adverse service levels based on the LOS standards mentioned in this report

[15] Alamitos Avenue, between 6th Street and Ocean Boulevard, includes a ten percent reduction (0.10) to account for the installation of support ITS/ATCS measures to improve efficient of traffic signals along this corridor.

[16] Includes the conversion of 6th Street and 7th Street from one-way traffic flow to two-way traffic flow as planned by the City of Long Beach. The conversion is assumed as a part of the Year 2020 cumulative traffic conditions/traffic network without and with the Project per the direction of City staff.

[17] Alamitos Avenue at Medio Street is a stop controlled intersection and the level of service results can be found in *Table 8-4*.

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TABLE 6-7

YEAR 2020 PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY (HCM METHODOLOGY)

ALAMITOS AVENUE COMPLETE STREETS CORRIDOR IMPROVEMENTS, LONG BEACH

Key Intersection		Time Period	(1) Existing Traffic Conditions		(2) Year 2020 Cumulative Traffic Conditions		(3) Year 2020 Cumulative Plus Project Traffic Conditions		(4) Significant Impact	
			HCM (s/v)	LOS	HCM (s/v)	LOS	HCM (s/v)	LOS	Increase (s/v)	Yes/No
1.	Alamitos Avenue at	AM	24.8	C	36.3	D[18]	36.4	D[18]	0.1	No
	7th Street	PM	22.3	C	49.5	D[18]	**69.6**	**E[18]**	**20.1**	**Yes**
2.	Alamitos Avenue at	AM	6.5	A	6.4	A[18]	6.8	A[18]	0.4	No
	6th Street	PM	14.3	B	4.8	A[18]	12.9	B[18]	8.1	No
3.	Alamitos Avenue at	AM	3.3	A	5.0	A	5.4	A	0.4	No
	5th Street	PM	4.0	A	3.7	A	2.7	A	0.0[19]	No
4.	Alamitos Avenue at	AM	16.4	B	13.2	B	17.7	B	4.5	No
	4th Street	PM	11.7	B	13.9	B	**78.3**	**E**	**64.4**	**Yes**
5.	Alamitos Avenue at	AM	7.4	A	8.2	A	22.4	C	14.2	No
	3rd Street	PM	6.0	A	2.0	A	16.0	B	14.0	No
6.	Alamitos Avenue at	AM	15.4	B	16.0	B	17.2	B	1.2	No
	Broadway	PM	22.4	C	27.3	C	38.9	D	11.6	No
7.	Alamitos Avenue at	AM	4.8	A	7.2	A	7.3	A	0.1	No
	1st Street	PM	6.3	A	7.9	A	12.4	B	4.5	No
8.	Alamitos Avenue at	AM	10.6	B	13.3	B	21.5	C	8.2	No
	Medio Street	PM	9.5	A	11.5	B	14.7	B	3.2	No
9.	Alamitos Avenue/Shoreline Drive at	AM	40.4	D	49.4	D	49.4	D	0.0	No
	Ocean Boulevard	PM	43.3	D	44.0	D	47.5	D	3.5	No

Notes:

- LOS = Level of Service, please refer to *Tables 6-1* through *6-3* for the LOS definitions
- s/v = seconds per vehicle (delay); **Bold HCM/LOS values** indicate adverse service levels based on the LOS standards mentioned in this report

18 Includes the conversion of 6th Street and 7th Street from one-way traffic flow to two-way traffic flow as planned by the City of Long Beach. The conversion is assumed as a part of the Year 2020 cumulative traffic conditions/traffic network without and with the Project per the direction of City staff.

19 Theoretical negative increase, which is possible with HCM calculations, is denoted as an increase of 0.0 s/v.

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TABLE 7-1

ALAMITOS AVENUE QUEUING ANALYSIS[20]

ALAMITOS AVENUE COMPLETE STREETS CORRIDOR IMPROVEMENTS, LONG BEACH

Study Intersections	(1) Existing Plus Project Traffic Conditions		(2) Year 2020 Cumulative Plus Project Traffic Conditions		(3) Control Queue (feet)[21]	(4) Existing/ Recommended Storage Length (feet)
	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)		
1. Alamitos Avenue at 7th Street						
Northbound Left-Turn	153	221	218	160	221	145[22]
Northbound Right-Turn	153	149	144	144	153	155
2. Alamitos Avenue at 6th Street						
Northbound Left-Turn	N/A[23]	N/A[23]	182	120	182	60[24]
Northbound Right-Turn	22	58	61	40	61	65
Southbound Left-Turn	22	115	22	85	115	60[24]
3. Alamitos Avenue at 5th Street						
Northbound Left-Turn	54	67	129	56	129	60[22]
Southbound Left-Turn	30	92	45	76	92	60[22]
4. Alamitos Avenue at 4th Street						
Northbound Left-Turn	143	124	226	150	226	115[25]
Southbound Left-Turn	160	263	195	279	279	155[22]

20 Queuing results are based on *Synchro 9.0/SimTraffic* 95th percentile delay methodology.

21 Control Queue is based on the maximum queue length between Existing Plus Project and Year 2020 Cumulative Plus Project traffic conditions.

22 It is recommended to keep the existing storage length; however, the two-way left-turn lane will be able to accommodate any spillover queues if necessary.

23 The northbound left-turn at Alamitos Avenue/6th Street is only implemented in Year 2020 as a part of the conversion of 6th Street and 7th Street from one-way traffic flow to two-way traffic flow as planned by the City of Long Beach.

24 A minimum storage length of 60 feet is suggested, however, the two-way left-turn lane will be able to accommodate any spillover queues if necessary.

25 It is recommended to keep the existing storage length. Although the existing storage does not fully accommodate the projected queue lengths, existing roadway conditions restricts the possibility of lengthening the turn pocket.

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TABLE 7-1 (CONTINUED)

ALAMITOS AVENUE QUEUING ANALYSIS[26]

ALAMITOS AVENUE COMPLETE STREETS CORRIDOR IMPROVEMENTS, LONG BEACH

Study Intersections	(1) Existing Plus Project Traffic Conditions		(2) Year 2020 Cumulative Plus Project Traffic Conditions		(3) Control Queue (feet)[27]	(4) Existing/ Recommended Storage Length (feet)
	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)		
5. Alamitos Avenue at 3rd Street						
Northbound Left-Turn	270	267	315	301	315	85[28]
Northbound Right-Turn	37	154	130	156	156	160[29]
Southbound Left-Turn	101	150	120	206	206	110[30]
6. Alamitos Avenue at Broadway						
Northbound Right-Turn	66	159	136	164	164	60[31]
Southbound Left-Turn	38	150	45	79	150	70[28]
7. Alamitos Avenue at 1st Street						
Northbound Left-Turn	37	66	91	131	131	60[30]
Southbound Right-Turn	27	26	47	22	47	110
9. Alamitos Avenue/Shoreline Drive at Ocean Boulevard						
Southbound Left-Turn	41	43	58	58	58	60
Southbound Right-Turn	77	34	77	63	77	80

26 Queuing results are based on *Synchro 9.0/SimTraffic* 95th percentile delay methodology.

27 Control Queue is based on the maximum queue length between Existing Plus Project and Year 2020 Cumulative Plus Project traffic conditions.

28 It is recommended to keep the existing storage length; however, the two-way left-turn lane will be able to accommodate any spillover queues if necessary.

29 Construction of a 160-foot storage length will require the removal of on-street parking.

30 It is recommended to keep the existing storage length. Although the existing storage does not fully accommodate the projected queue lengths, existing roadway conditions restricts the possibility of lengthening the turn pocket.

31 A minimum storage length of 60 feet is suggested. Although this recommended storage does not fully accommodate the projected queue lengths, existing roadway conditions restricts the possibility of lengthening the turn pocket.

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TABLE 8-1

EXISTING MULTIMODAL LEVEL OF SERVICE SUMMARY

ALAMITOS AVENUE COMPLETE STREETS CORRIDOR IMPROVEMENTS, LONG BEACH

CHECKLIST FOR COMPLETE STREETS

The checklist is designed to assist agencies in assesssing the degree to which their streets meet the requirements of the California Complete Streets Act (AB 1358, 2009), specifically, "**Does the street meet the needs of motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and useres of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the street?**"

EXISTING CONDITIONS

Street: **Alamitos Avenue**	Context:
Limits: **7th Street and Ocean Boulevard**	

User Groups	(1) Minimum LOS Acceptable to Agency	(2) Calculated LOS	(3) Percent
1. Motorists	**D**	**E**	**50%**
2. Transit Passengers	**C**	**D**	**67%**
3. Bicyclists	**C**	**D**	**67%**
4. Pedestrians	**C**	**C**	**100%**
5. Children			**100%**
a. Are adequately marked/controlled school crossings provided as needed?			**100%**
b. Does the street meet the agency's design and lighting policies?			**100%**
6. Persons with Disabilities **7. Seniors**			**83%**
a. Are there accessible routes on both sides of the street?			**100%**
b. Are the street crossings accessible?			**100%**
c. Are the traffic signals accessible?			**100%**
d. Are there sufficient on-street parking spaces?			**100%**
e. Are there sufficient accessible passenger loading zones?			**0%**
f. Are bus stops accessible?			**100%**
8. Movers of Commercial Goods			**--**
a. Are streets designed to accommodate trucks?			**--**
b. Are there adequate truck routes for through trucks here or nearby?			**--**
c. Are there adequate on-street loading zones/off-street loading docks?			**--**

Overall Assessment: According to the data and weights entered above, Alamitos Avenue meets 67% of the above criteria.

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TABLE 8-2

EXISTING PLUS PROJECT MULTIMODAL LEVEL OF SERVICE SUMMARY

ALAMITOS AVENUE COMPLETE STREETS CORRIDOR IMPROVEMENTS, LONG BEACH

CHECKLIST FOR COMPLETE STREETS

The checklist is designed to assist agencies in assesssing the degree to which their streets meet the requirements of the California Complete Streets Act (AB 1358, 2009), specifically, "**Does the street meet the needs of motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and useres of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the street?**"

EXISTING PLUS PROJECT CONDITIONS

Street:	**Alamitos Avenue**	Context:	
Limits:	**7th Street and Ocean Boulevard**		

User Groups	**(1) Minimum LOS Acceptable to Agency**	**(2) Calculated LOS**	**(3) Percent**
1. Motorists	**D**	**F**	**0%**
2. Transit Passengers	**C**	**D**	**67%**
3. Bicyclists	**C**	**C**	**100%**
4. Pedestrians	**C**	**C**	**100%**
5. Children			**100%**
a. Are adequately marked/controlled school crossings provided as needed?			**100%**
b. Does the street meet the agency's design and lighting policies?			**100%**
6. Persons with Disabilities **7. Seniors**			**83%**
a. Are there accessible routes on both sides of the street?			**100%**
b. Are the street crossings accessible?			**100%**
c. Are the traffic signals accessible?			**100%**
d. Are there sufficient on-street parking spaces?			**100%**
e. Are there sufficient accessible passenger loading zones?			**0%**
f. Are bus stops accessible?			**100%**
8. Movers of Commercial Goods			**--**
a. Are streets designed to accommodate trucks?			**--**
b. Are there adequate truck routes for through trucks here or nearby?			**--**
c. Are there adequate on-street loading zones/off-street loading docks?			**--**

Overall Assessment: According to the data and weights entered above, Alamitos Avenue meets 64% of the above criteria.

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APPENDIX A

EXISTING TRAFFIC COUNT DATA

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

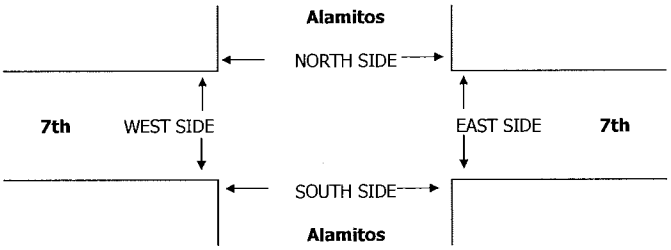
DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Thu, May 26, 16	NORTH & SOUTH:	Alamitos	LOCATION #:	27
	EAST & WEST:	7th	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

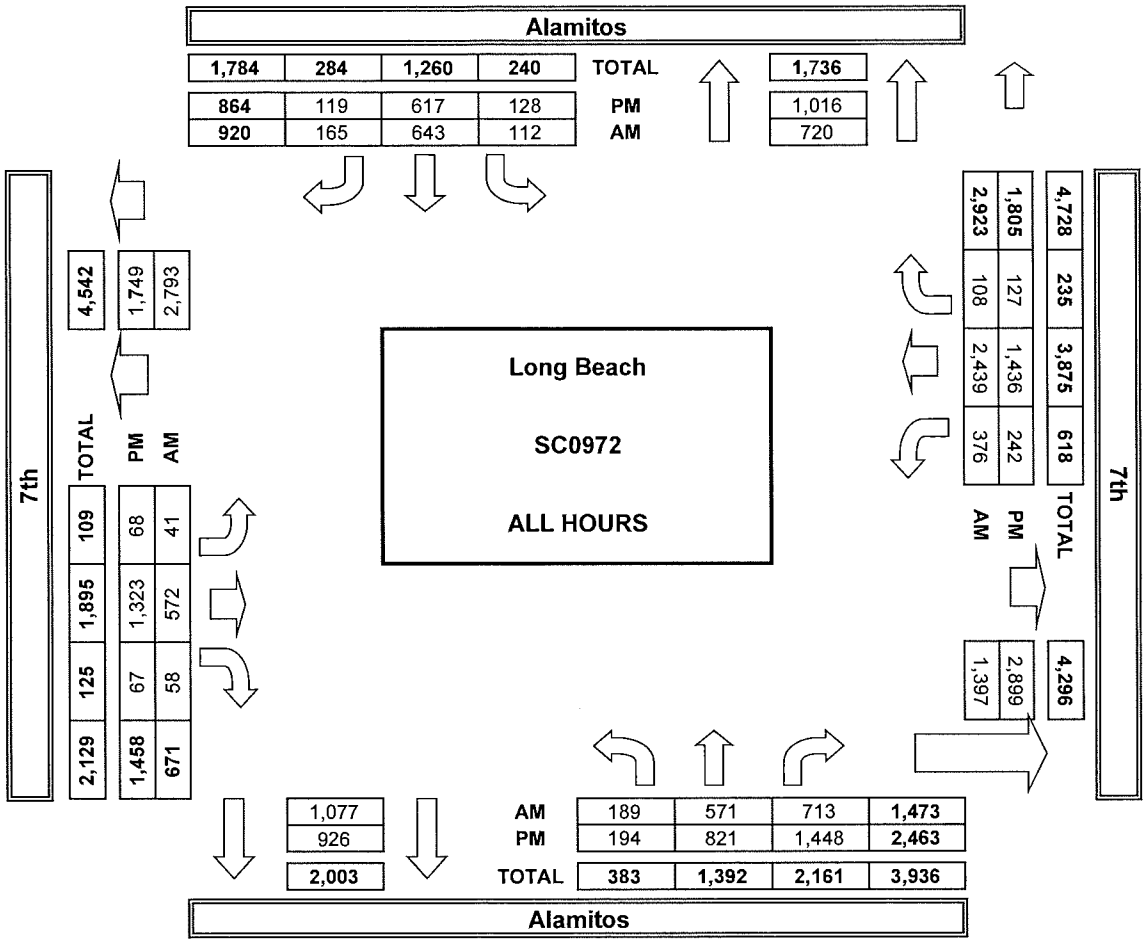
		NORTHBOUND Alamitos			SOUTHBOUND Alamitos			EASTBOUND 7th			WESTBOUND 7th				U-TURNS				
	LANES:	NL 1	NT 1	NR 2	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	20	45	75	13	46	15	3	55	5	37	299	8	621	0	0	0	0	0
	7:15 AM	22	64	81	14	68	19	7	69	3	56	350	7	760	0	0	0	0	0
	7:30 AM	30	86	93	14	72	29	9	77	8	51	333	11	813	0	0	0	0	0
	7:45 AM	22	80	83	10	96	44	5	84	11	56	285	18	794	0	0	0	0	0
	8:00 AM	25	83	102	15	76	18	3	90	12	48	279	16	767	0	0	0	0	0
	8:15 AM	21	70	88	17	96	18	5	69	5	49	329	13	780	0	0	0	0	0
	8:30 AM	25	69	98	16	91	9	1	55	6	32	257	14	673	0	0	0	0	0
	8:45 AM	24	74	93	13	98	13	8	73	8	47	307	21	779	0	0	0	0	0
	VOLUMES	189	571	713	112	643	165	41	572	58	376	2,439	108	5,987	0	0	0	0	0
	APPROACH %	13%	39%	48%	12%	70%	18%	6%	85%	9%	13%	83%	4%						
	APP/DEPART	1,473	/	720	920	/	1,077	671	/	1,397	2,923	/	2,793	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	98	319	366	56	340	109	22	320	36	204	1,226	58	3,154					
	APPROACH %	13%	41%	47%	11%	67%	22%	6%	85%	10%	14%	82%	4%						
	PEAK HR FACTOR		0.932			0.842			0.900			0.942		0.970					
	APP/DEPART	783	/	399	505	/	580	378	/	742	1,488	/	1,433	0					
PM	4:00 PM	24	106	139	17	61	14	9	158	5	21	207	19	780	0	0	0	0	0
	4:15 PM	25	100	188	17	70	14	10	133	5	29	199	16	806	0	0	0	0	0
	4:30 PM	23	102	180	21	92	12	7	160	9	32	216	13	867	0	0	0	0	0
	4:45 PM	25	96	199	14	91	17	9	167	12	32	158	22	842	0	0	0	0	0
	5:00 PM	24	100	185	8	67	14	10	198	7	29	155	12	809	0	0	0	0	0
	5:15 PM	25	118	191	15	79	20	11	190	11	37	173	12	882	0	0	0	0	0
	5:30 PM	22	96	182	16	82	11	8	152	13	33	166	13	794	0	0	0	0	0
	5:45 PM	26	103	184	20	75	17	4	165	5	29	162	20	810	0	0	0	0	0
	VOLUMES	194	821	1,448	128	617	119	68	1,323	67	242	1,436	127	6,590	0	0	0	0	0
	APPROACH %	8%	33%	59%	15%	71%	14%	5%	91%	5%	13%	80%	7%						
	APP/DEPART	2,463	/	1,016	864	/	926	1,458	/	2,899	1,805	/	1,749	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	97	416	755	58	329	63	37	715	39	130	702	59	3,400					
	APPROACH %	8%	33%	60%	13%	73%	14%	5%	90%	5%	15%	79%	7%						
	PEAK HR FACTOR		0.949			0.900			0.920			0.853		0.964					
	APP/DEPART	1,268	/	512	450	/	498	791	/	1,528	891	/	862	0					

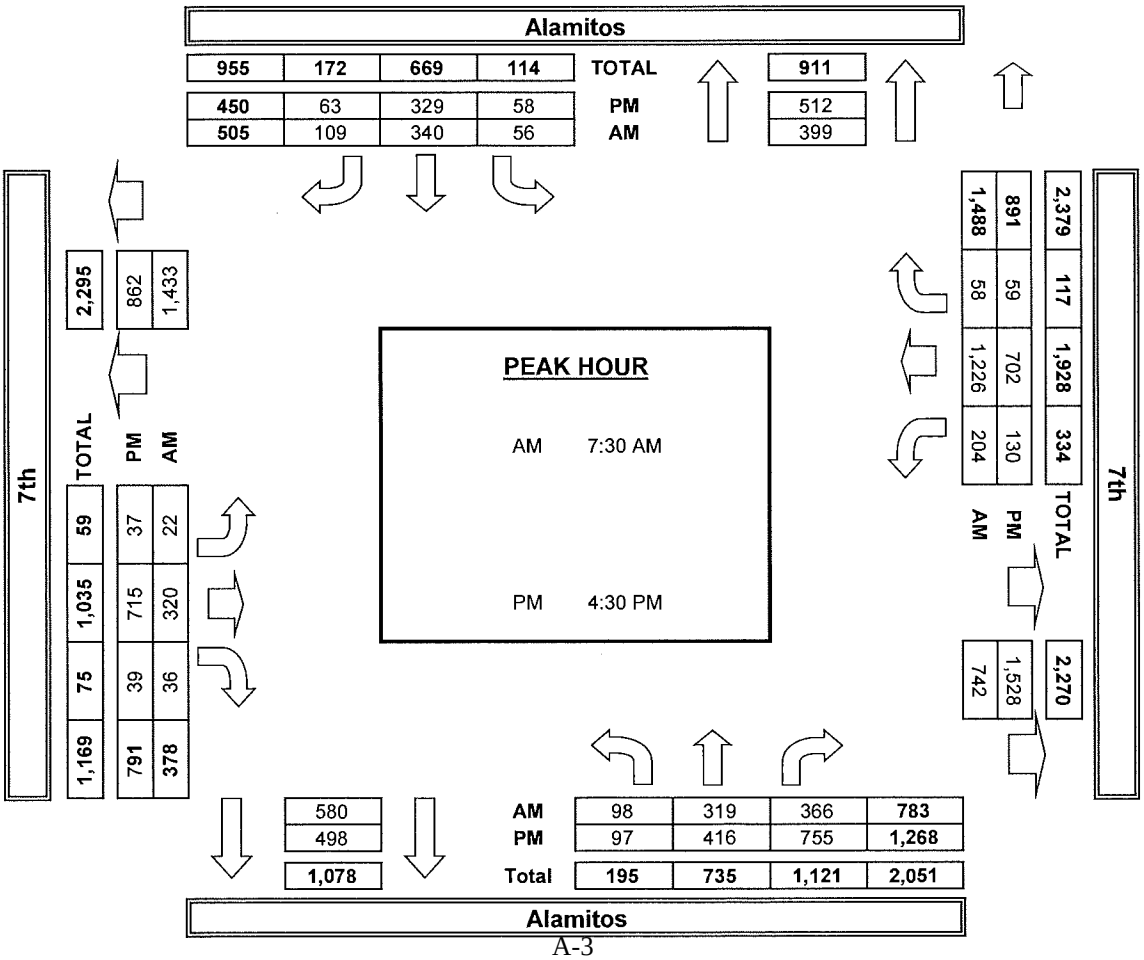


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

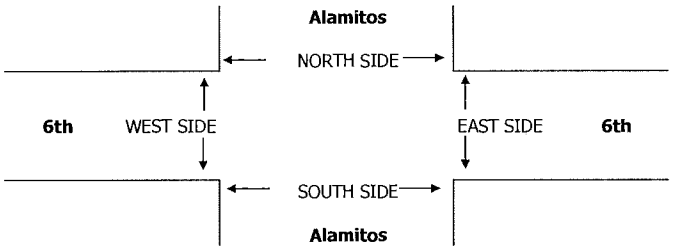
DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Thu, May 26, 16	NORTH & SOUTH:	Alamitos	LOCATION #:	28
	EAST & WEST:	6th	CONTROL:	SIGNAL

NOTES:

AM PM MD OTHER OTHER ◄ W E ► ▲ N S ▼

☑ Add U-Turns to Left Turns

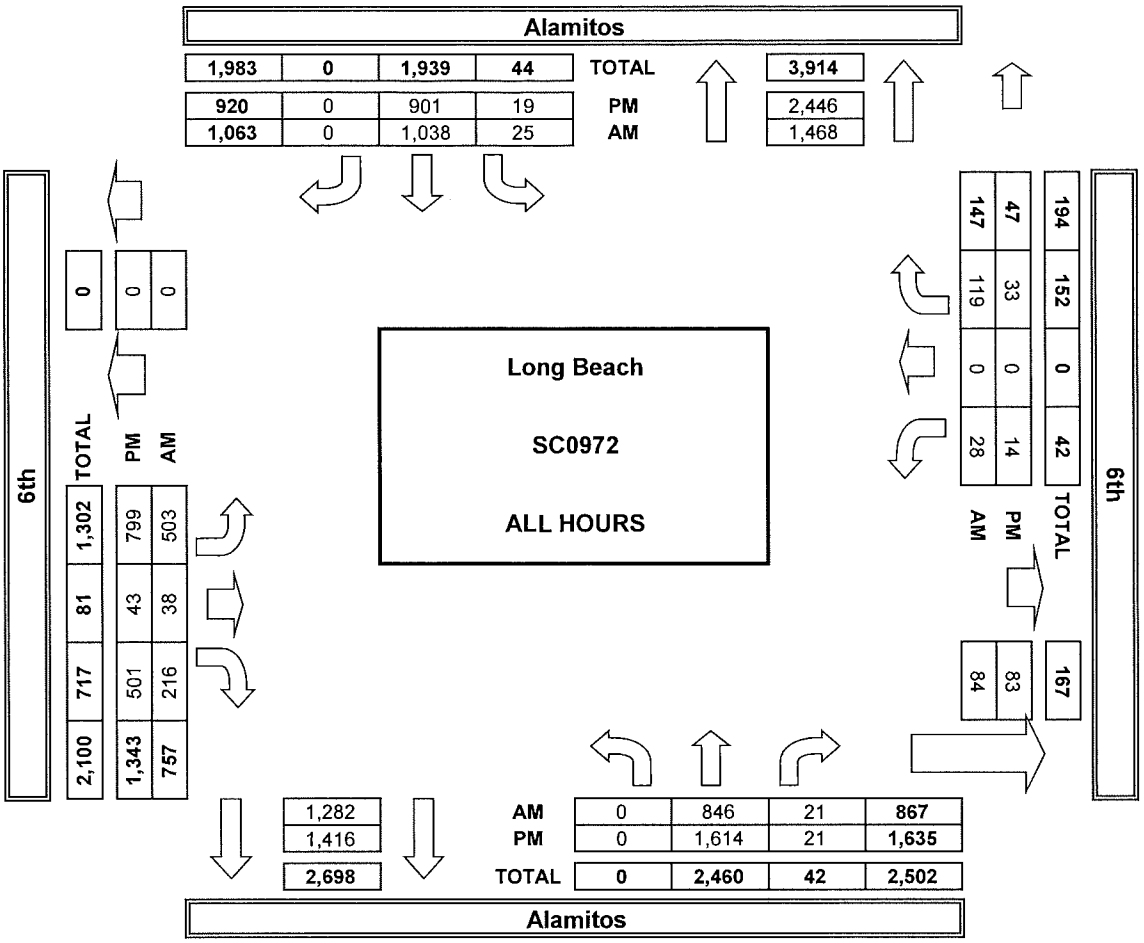
		NORTHBOUND Alamitos			SOUTHBOUND Alamitos			EASTBOUND 6th			WESTBOUND 6th				U-TURNS				
	LANES:	NL X	NT 2	NR 0	SL 0	ST 2	SR X	EL 0.5	ET 0.5	ER 1	WL 0.5	WT X	WR 0.5	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	0	77	1	0	88	0	52	0	17	0	0	6	241	0	0	0	0	0
	7:15 AM	0	90	6	0	129	0	50	0	26	0	0	3	304	0	0	0	0	0
	7:30 AM	0	131	2	0	131	0	77	0	20	2	0	4	367	0	0	0	0	0
	7:45 AM	0	123	2	1	162	0	66	4	46	7	0	6	417	0	0	0	0	0
	8:00 AM	0	120	2	2	131	0	80	4	35	1	0	9	384	0	0	0	0	0
	8:15 AM	0	102	3	2	150	0	66	5	19	0	0	6	353	0	0	0	0	0
	8:30 AM	0	108	3	9	113	0	56	8	24	5	0	26	352	0	0	0	0	0
	8:45 AM	0	95	2	11	134	0	56	17	29	13	0	59	416	0	0	0	0	0
	VOLUMES	0	846	21	25	1,038	0	503	38	216	28	0	119	2,834	0	0	0	0	0
	APPROACH %	0%	98%	2%	2%	98%	0%	66%	5%	29%	19%	0%	81%						
	APP/DEPART	867	/	1,468	1,063	/	1,282	757	/	84	147	/	0	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	476	9	5	574	0	289	13	120	10	0	25	1,521					
	APPROACH %	0%	98%	2%	1%	99%	0%	68%	3%	28%	29%	0%	71%						
	PEAK HR FACTOR		0.912			0.888			0.887			0.673		0.912					
	APP/DEPART	485	/	790	579	/	704	422	/	27	35	/	0	0					
PM	4:00 PM	0	192	3	2	89	0	87	3	61	1	0	7	445	0	0	0	0	0
	4:15 PM	0	185	2	3	94	0	95	6	54	1	0	2	442	0	0	0	0	0
	4:30 PM	0	208	2	3	128	0	87	9	66	1	0	6	510	0	0	0	0	0
	4:45 PM	0	214	1	0	124	0	105	7	63	2	0	2	518	0	0	0	0	0
	5:00 PM	0	217	4	4	109	0	110	2	62	3	0	1	512	0	0	0	0	0
	5:15 PM	0	208	2	1	127	0	105	6	75	1	0	3	528	0	0	0	0	0
	5:30 PM	0	196	2	3	129	0	98	7	67	3	0	7	512	0	0	0	0	0
	5:45 PM	0	194	5	3	101	0	112	3	53	2	0	5	478	0	0	0	0	0
	VOLUMES	0	1,614	21	19	901	0	799	43	501	14	0	33	3,945	0	0	0	0	0
	APPROACH %	0%	99%	1%	2%	98%	0%	59%	3%	37%	30%	0%	70%						
	APP/DEPART	1,635	/	2,446	920	/	1,416	1,343	/	83	47	/	0	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	835	9	8	489	0	418	22	267	9	0	13	2,070					
	APPROACH %	0%	99%	1%	2%	98%	0%	59%	3%	38%	41%	0%	59%						
	PEAK HR FACTOR		0.955			0.941			0.950			0.550		0.980					
	APP/DEPART	844	/	1,266	497	/	765	707	/	39	22	/	0	0					

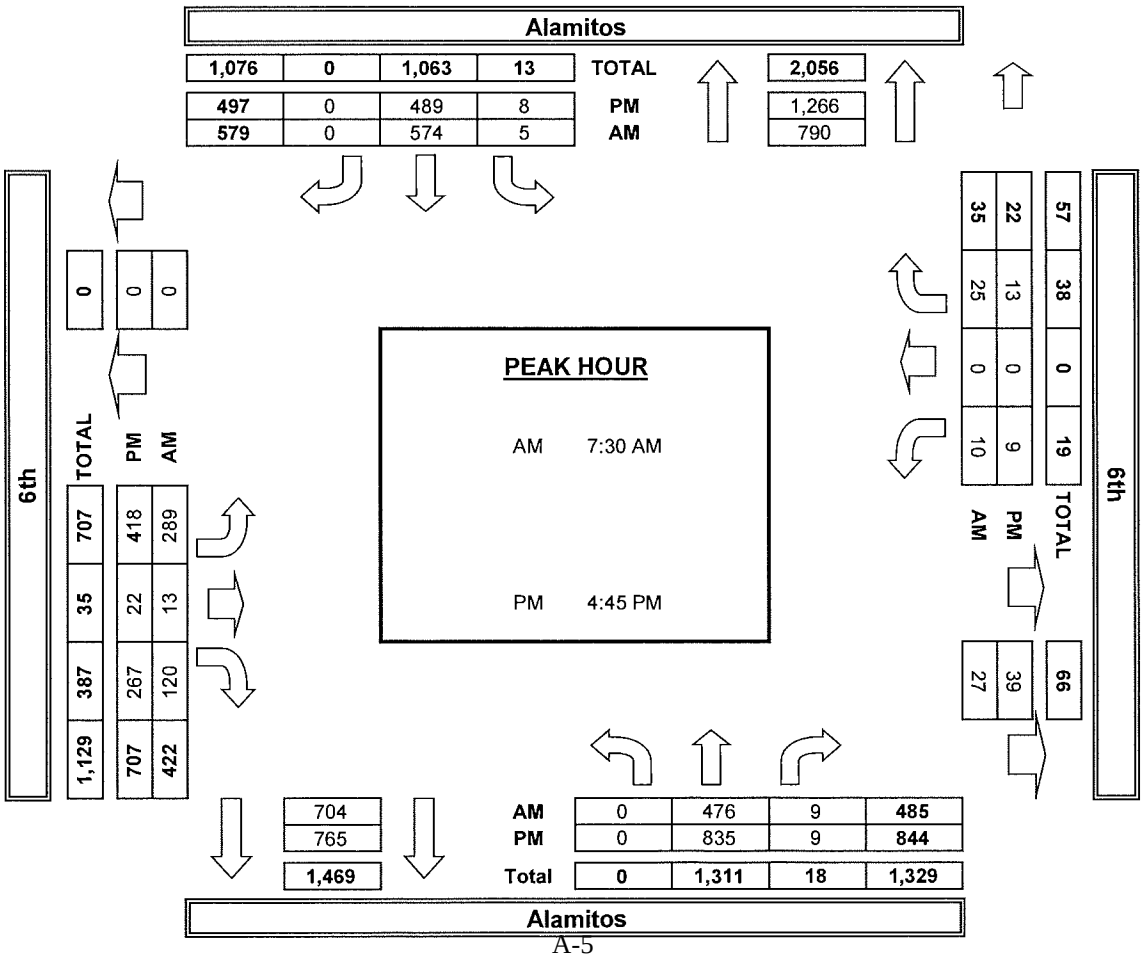


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T816

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
Wed, Sep 28, 16	LOCATION:	Long Beach	PROJECT #:	SC1093
	NORTH & SOUTH:	Alamitos	LOCATION #:	1
	EAST & WEST:	5th	CONTROL:	SIGNAL

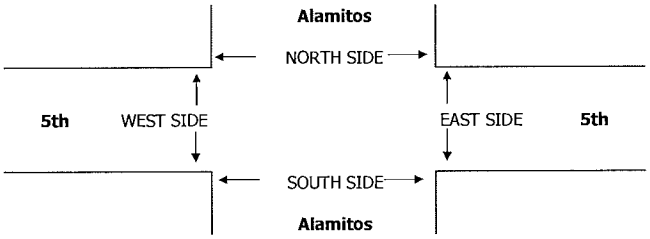
NOTES:

AM / PM / MD / OTHER / OTHER

N ▲ ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

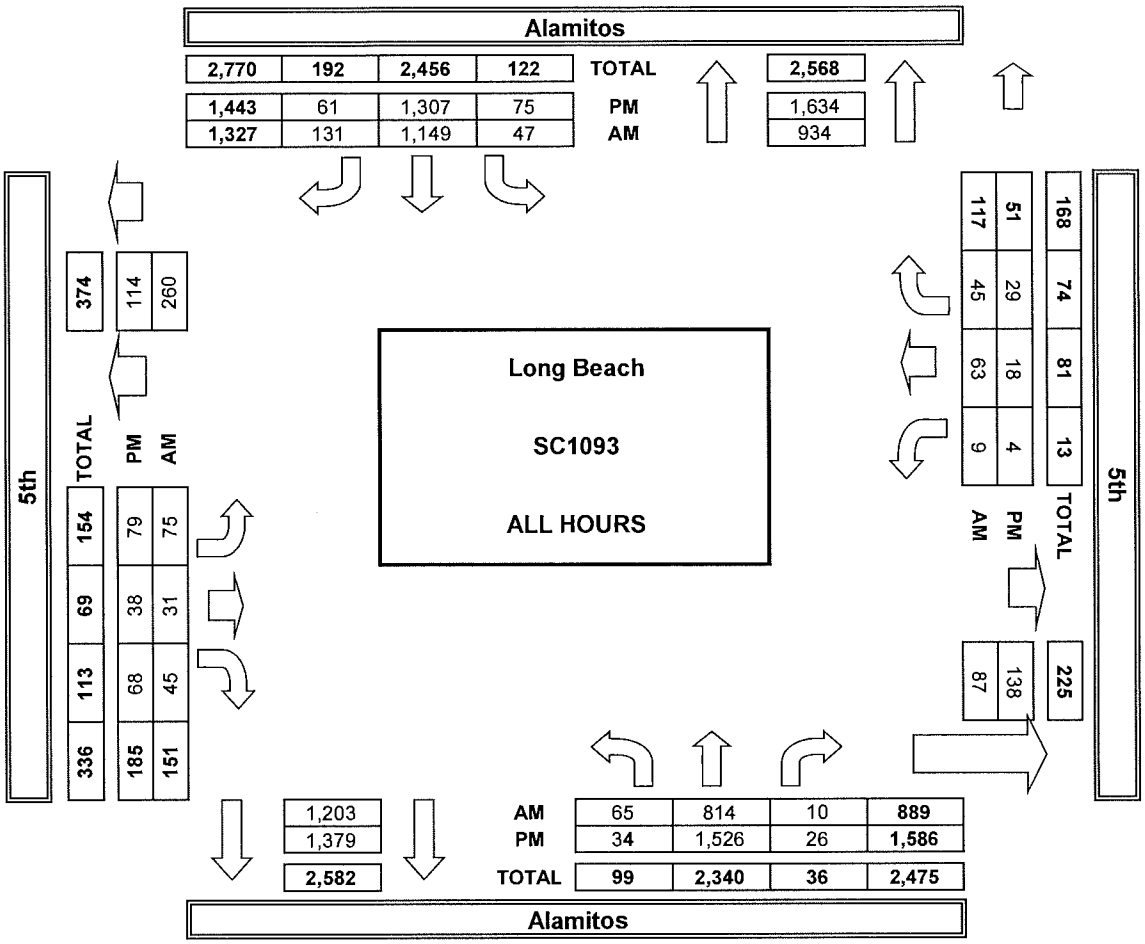
		NORTHBOUND Alamitos			SOUTHBOUND Alamitos			EASTBOUND 5th			WESTBOUND 5th				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	2	69	0	6	103	14	1	0	1	0	4	3	203	0	0	0	0	0
	7:15 AM	6	102	1	5	111	22	8	1	7	1	6	5	275	0	0	0	0	0
	7:30 AM	16	117	2	2	139	24	8	5	4	2	13	7	339	0	0	0	0	0
	7:45 AM	25	111	1	7	175	36	21	8	11	1	19	5	420	0	0	0	0	0
	8:00 AM	5	113	2	6	172	11	18	6	12	1	6	4	356	0	0	1	0	1
	8:15 AM	4	97	2	8	140	7	3	2	0	1	3	9	276	0	1	0	0	1
	8:30 AM	6	103	0	11	145	8	12	4	5	1	9	4	308	0	0	0	0	0
	8:45 AM	1	102	2	2	164	9	4	5	5	2	3	8	307	0	0	0	0	0
	VOLUMES	65	814	10	47	1,149	131	75	31	45	9	63	45	2,484	0	1	1	0	2
	APPROACH %	7%	92%	1%	4%	87%	10%	50%	21%	30%	8%	54%	38%						
	APP/DEPART	889	/	934	1,327	/	1,203	151	/	87	117	/	260	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	50	438	7	23	626	78	50	21	27	5	41	25	1,391					
	APPROACH %	10%	88%	1%	3%	86%	11%	51%	21%	28%	7%	58%	35%						
	PEAK HR FACTOR		0.903			0.834			0.613			0.710		0.828					
	APP/DEPART	495	/	513	727	/	658	98	/	50	71	/	170	0					
PM	4:00 PM	6	180	1	9	146	4	12	2	5	0	1	7	373	0	0	0	0	0
	4:15 PM	3	183	3	11	164	7	13	4	9	0	1	4	402	0	0	0	0	0
	4:30 PM	3	191	4	5	163	11	9	2	10	1	2	4	405	0	0	1	0	1
	4:45 PM	4	188	3	9	162	11	4	5	8	0	0	3	397	0	0	0	0	0
	5:00 PM	4	217	3	8	171	9	10	4	10	1	2	3	442	0	0	0	0	0
	5:15 PM	7	207	3	12	171	8	9	12	14	1	4	3	451	0	0	0	0	0
	5:30 PM	2	183	6	9	169	2	15	9	8	1	6	3	413	0	0	0	0	0
	5:45 PM	5	177	3	12	161	9	7	0	4	0	2	2	382	0	1	0	0	1
	VOLUMES	34	1,526	26	75	1,307	61	79	38	68	4	18	29	3,265	0	1	1	0	2
	APPROACH %	2%	96%	2%	5%	91%	4%	43%	21%	37%	8%	35%	57%						
	APP/DEPART	1,586	/	1,634	1,443	/	1,379	185	/	138	51	/	114	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	17	795	15	38	673	30	38	30	40	3	12	12	1,703					
	APPROACH %	2%	96%	2%	5%	91%	4%	35%	28%	37%	11%	44%	44%						
	PEAK HR FACTOR		0.923			0.970			0.771			0.675		0.944					
	APP/DEPART	827	/	845	741	/	716	108	/	83	27	/	59	0					

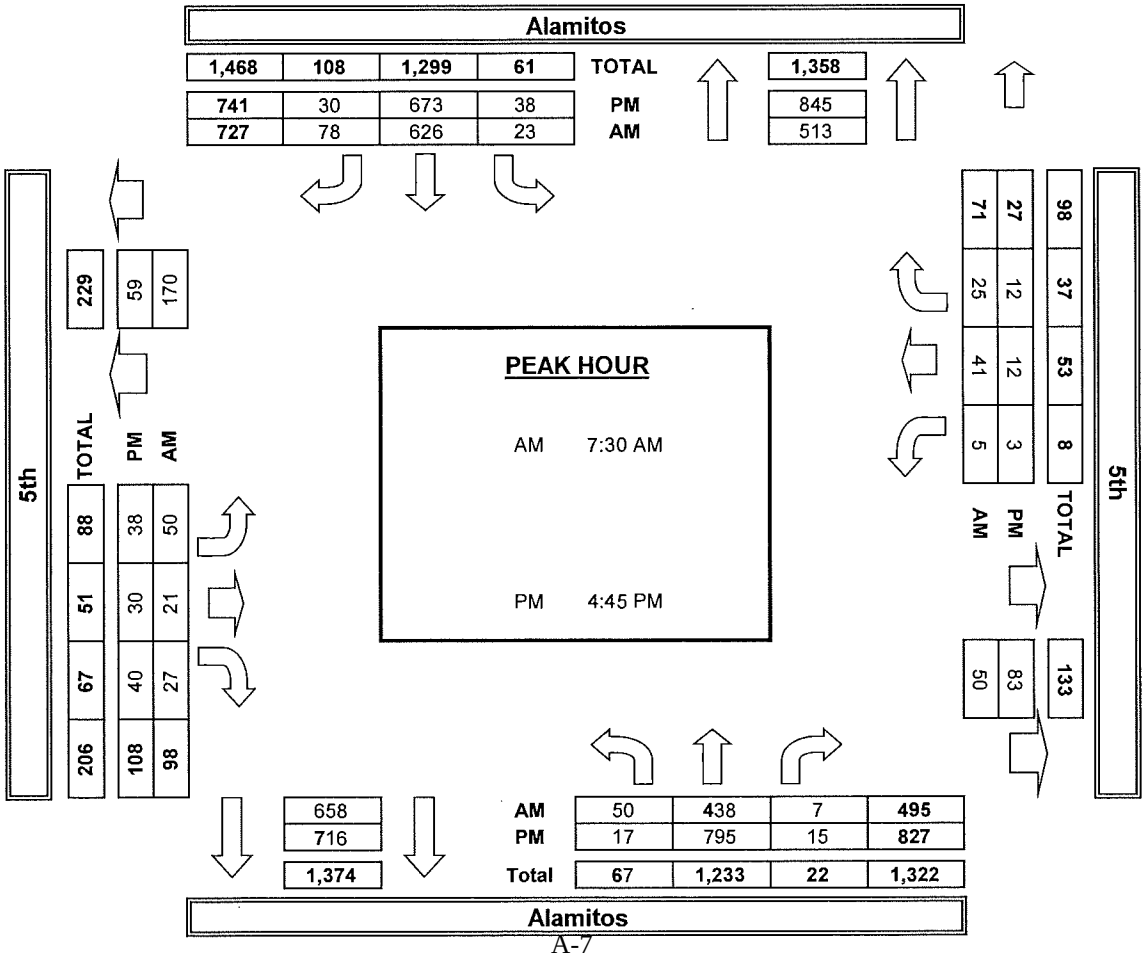


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T816

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

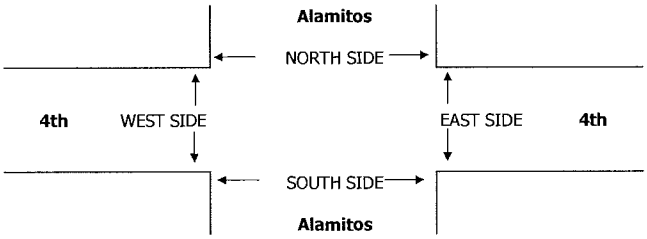
DATE:	LOCATION:	Long Beach	PROJECT #:	SC1093
Wed, Sep 28, 16	NORTH & SOUTH:	Alamitos	LOCATION #:	2
	EAST & WEST:	4th	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

☑ Add U-Turns to Left Turns

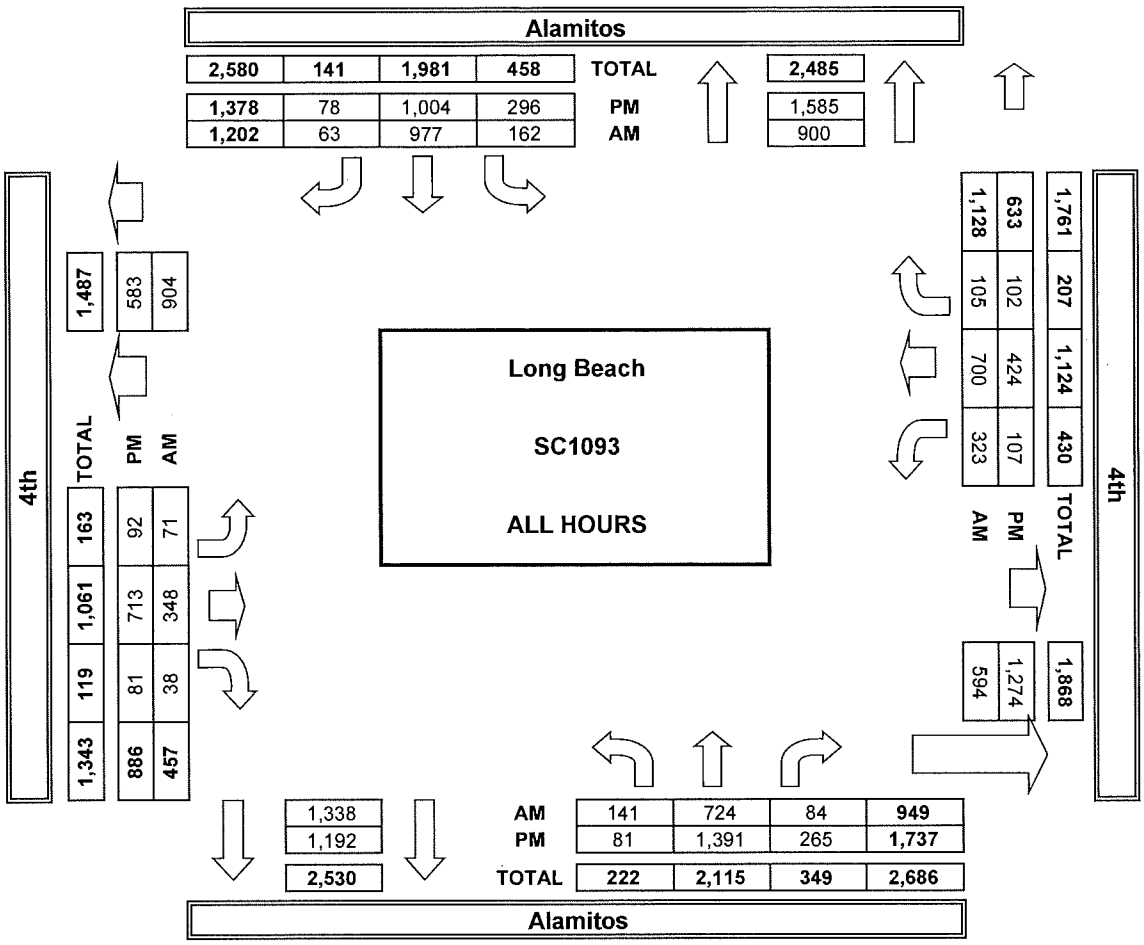
		NORTHBOUND Alamitos			SOUTHBOUND Alamitos			EASTBOUND 4th			WESTBOUND 4th				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	13	63	11	14	83	5	5	40	4	36	60	12	346	0	0	0	0	0
	7:15 AM	8	83	7	22	93	6	8	30	2	44	72	12	387	0	0	0	0	0
	7:30 AM	14	117	8	20	116	10	7	55	6	43	117	21	534	0	0	0	0	0
	7:45 AM	23	119	8	28	147	8	9	53	6	54	123	14	592	0	0	0	0	0
	8:00 AM	28	78	12	29	146	12	10	42	6	41	89	19	512	0	0	0	0	0
	8:15 AM	21	88	14	15	118	6	10	42	3	38	93	12	460	0	0	0	0	0
	8:30 AM	20	90	10	16	127	8	10	41	5	38	79	7	451	0	0	0	0	0
	8:45 AM	14	86	14	18	147	8	12	45	6	29	67	8	454	0	0	0	0	0
	VOLUMES	141	724	84	162	977	63	71	348	38	323	700	105	3,736	0	0	0	0	0
	APPROACH %	15%	76%	9%	13%	81%	5%	16%	76%	8%	29%	62%	9%						
	APP/DEPART	949	/	900	1,202	/	1,338	457	/	594	1,128	/	904	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	86	402	42	92	527	36	36	192	21	176	422	66	2,098					
	APPROACH %	16%	76%	8%	14%	80%	5%	14%	77%	8%	27%	64%	10%						
	PEAK HR FACTOR		0.883			0.876			0.915			0.869		0.886					
	APP/DEPART	530	/	504	655	/	724	249	/	326	664	/	544	0					
PM	4:00 PM	9	159	29	38	108	5	11	69	8	17	66	18	537	0	0	0	0	0
	4:15 PM	14	163	23	35	130	12	8	85	11	11	51	16	559	0	0	0	0	0
	4:30 PM	13	169	36	41	126	7	10	88	12	16	54	19	591	0	0	0	0	0
	4:45 PM	6	183	31	26	133	10	8	86	11	14	50	7	565	0	0	0	0	0
	5:00 PM	10	203	38	50	117	16	15	83	16	14	51	12	625	0	0	0	0	0
	5:15 PM	10	192	40	42	137	9	11	110	3	11	49	9	623	0	0	0	0	0
	5:30 PM	6	166	26	37	124	9	13	98	11	13	50	13	566	0	0	0	0	0
	5:45 PM	13	156	42	27	129	10	16	94	9	11	53	8	568	0	0	0	0	0
	VOLUMES	81	1,391	265	296	1,004	78	92	713	81	107	424	102	4,634	0	0	0	0	0
	APPROACH %	5%	80%	15%	21%	73%	6%	10%	80%	9%	17%	67%	16%						
	APP/DEPART	1,737	/	1,585	1,378	/	1,192	886	/	1,274	633	/	583	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	39	747	145	159	513	42	44	367	42	55	204	47	2,404					
	APPROACH %	4%	80%	16%	22%	72%	6%	10%	81%	9%	18%	67%	15%						
	PEAK HR FACTOR		0.927			0.949			0.913			0.860		0.962					
	APP/DEPART	931	/	838	714	/	610	453	/	671	306	/	285	0					

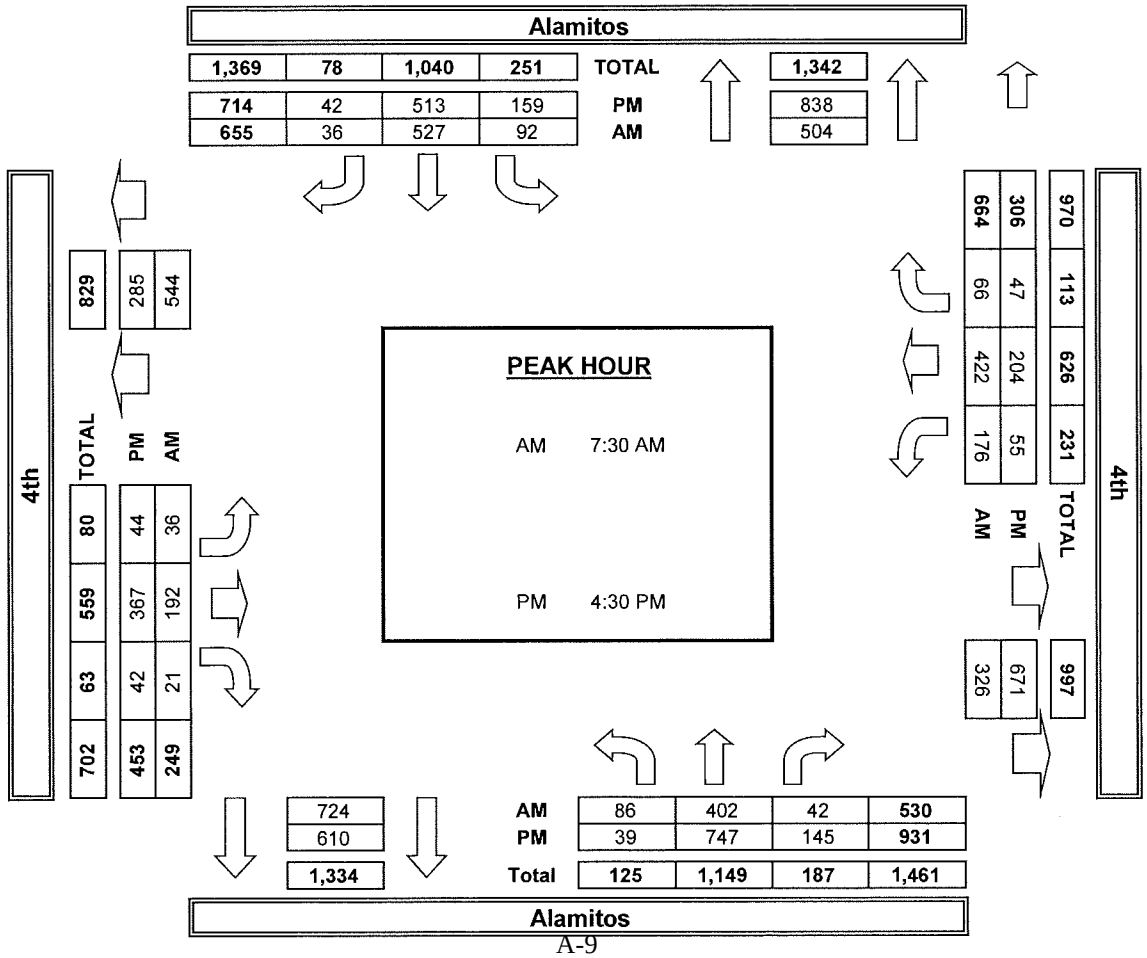


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

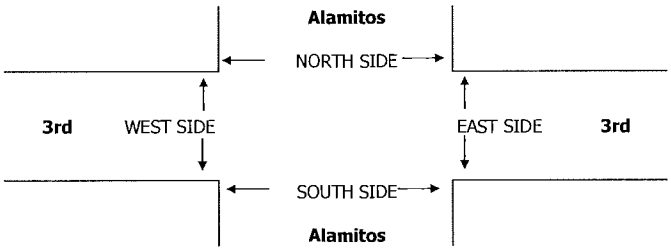
DATE:				
Thu, May 26, 16	LOCATION:	Long Beach	PROJECT #:	SC0972
	NORTH & SOUTH:	Alamitos	LOCATION #:	29
	EAST & WEST:	3rd	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ◄ W, E ►, ▲ N, S ▼

☑ Add U-Turns to Left Turns

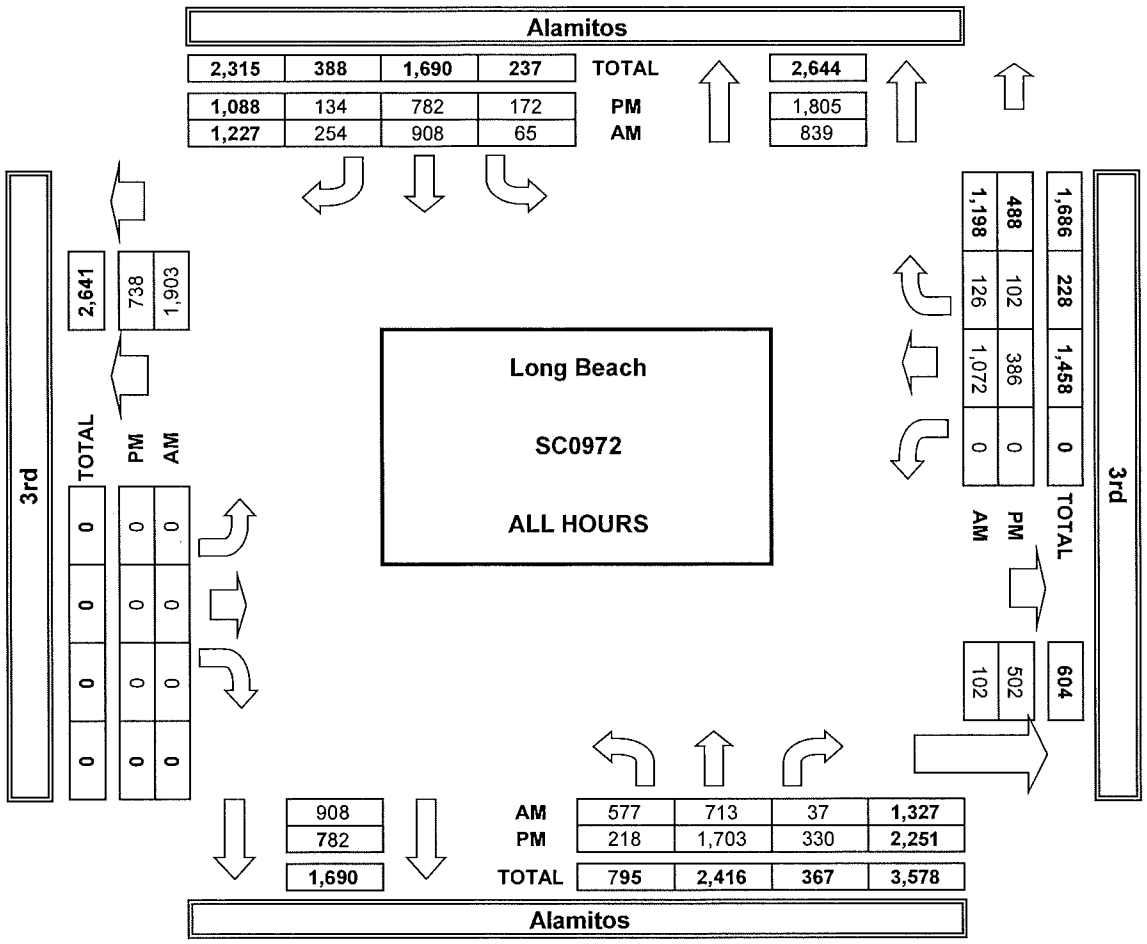
		NORTHBOUND Alamitos			SOUTHBOUND Alamitos			EASTBOUND 3rd			WESTBOUND 3rd				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	2	0	1	1	1	X	X	X	X	1.5	0.5		X	X	X	X	
AM	7:00 AM	63	60	3	6	88	14	0	0	0	0	130	10	374	0	0	0	0	0
AM	7:15 AM	76	77	3	8	99	32	0	0	0	0	133	17	445	0	0	0	0	0
AM	7:30 AM	63	102	6	9	114	36	0	0	0	0	162	23	515	0	0	0	0	0
AM	7:45 AM	81	99	5	9	137	51	0	0	0	0	168	21	571	0	0	0	0	0
AM	8:00 AM	72	85	9	8	110	31	0	0	0	0	151	12	478	0	0	0	0	0
AM	8:15 AM	94	92	2	4	137	31	0	0	0	0	142	13	515	0	0	0	0	0
AM	8:30 AM	58	96	4	11	101	34	0	0	0	0	97	14	415	0	0	0	0	0
AM	8:45 AM	70	102	5	10	122	25	0	0	0	0	89	16	439	0	0	0	0	0
AM	VOLUMES	577	713	37	65	908	254	0	0	0	0	1,072	126	3,752	0	0	0	0	0
AM	APPROACH %	43%	54%	3%	5%	74%	21%	0%	0%	0%	0%	89%	11%						
AM	APP/DEPART	1,327	/	839	1,227	/	908	0	/	102	1,198	/	1,903	0					
AM	BEGIN PEAK HR		7:30 AM																
AM	VOLUMES	310	378	22	30	498	149	0	0	0	0	623	69	2,079					
AM	APPROACH %	44%	53%	3%	4%	74%	22%	0%	0%	0%	0%	90%	10%						
AM	PEAK HR FACTOR		0.944			0.859			0.000			0.915		0.910					
AM	APP/DEPART	710	/	447	677	/	498	0	/	52	692	/	1,082	0					
PM	4:00 PM	24	188	16	21	86	18	0	0	0	0	37	13	403	0	0	0	0	0
PM	4:15 PM	32	207	25	20	100	15	0	0	0	0	47	17	463	0	0	0	0	0
PM	4:30 PM	27	229	51	26	98	21	0	0	0	0	58	20	530	0	0	0	0	0
PM	4:45 PM	28	211	35	15	96	18	0	0	0	0	50	10	463	0	0	0	0	0
PM	5:00 PM	33	251	61	26	97	20	0	0	0	0	55	12	555	0	0	0	0	0
PM	5:15 PM	29	230	43	25	113	12	0	0	0	0	42	9	503	0	0	0	0	0
PM	5:30 PM	16	186	59	25	104	13	0	0	0	0	44	14	461	0	0	0	0	0
PM	5:45 PM	29	201	40	14	88	17	0	0	0	0	53	7	449	0	0	0	0	0
PM	VOLUMES	218	1,703	330	172	782	134	0	0	0	0	386	102	3,827	0	0	0	0	0
PM	APPROACH %	10%	76%	15%	16%	72%	12%	0%	0%	0%	0%	79%	21%						
PM	APP/DEPART	2,251	/	1,805	1,088	/	782	0	/	502	488	/	738	0					
PM	BEGIN PEAK HR		4:30 PM																
PM	VOLUMES	117	921	190	92	404	71	0	0	0	0	205	51	2,051					
PM	APPROACH %	10%	75%	15%	16%	71%	13%	0%	0%	0%	0%	80%	20%						
PM	PEAK HR FACTOR		0.890			0.945			0.000			0.821		0.924					
PM	APP/DEPART	1,228	/	972	567	/	404	0	/	282	256	/	393	0					

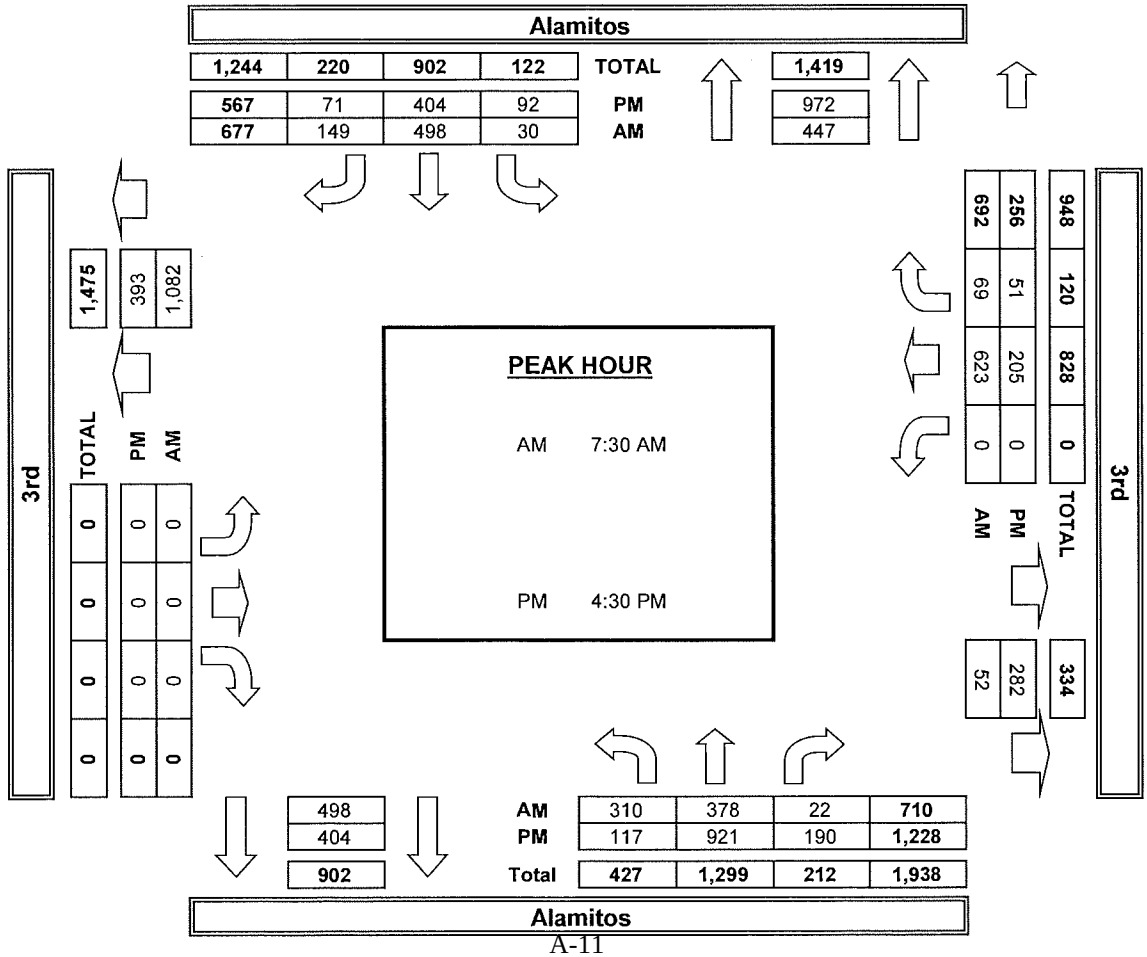


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	0	3	0	3	0	0	3	0	3	0	0	0	0	0
PM	TOTAL	0	0	3	0	3	0	0	3	0	3	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

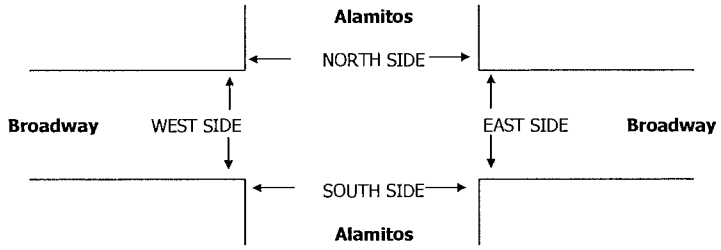
DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Thu, May 26, 16	NORTH & SOUTH:	Alamitos	LOCATION #:	7
	EAST & WEST:	Broadway	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

☑ Add U-Turns to Left Turns

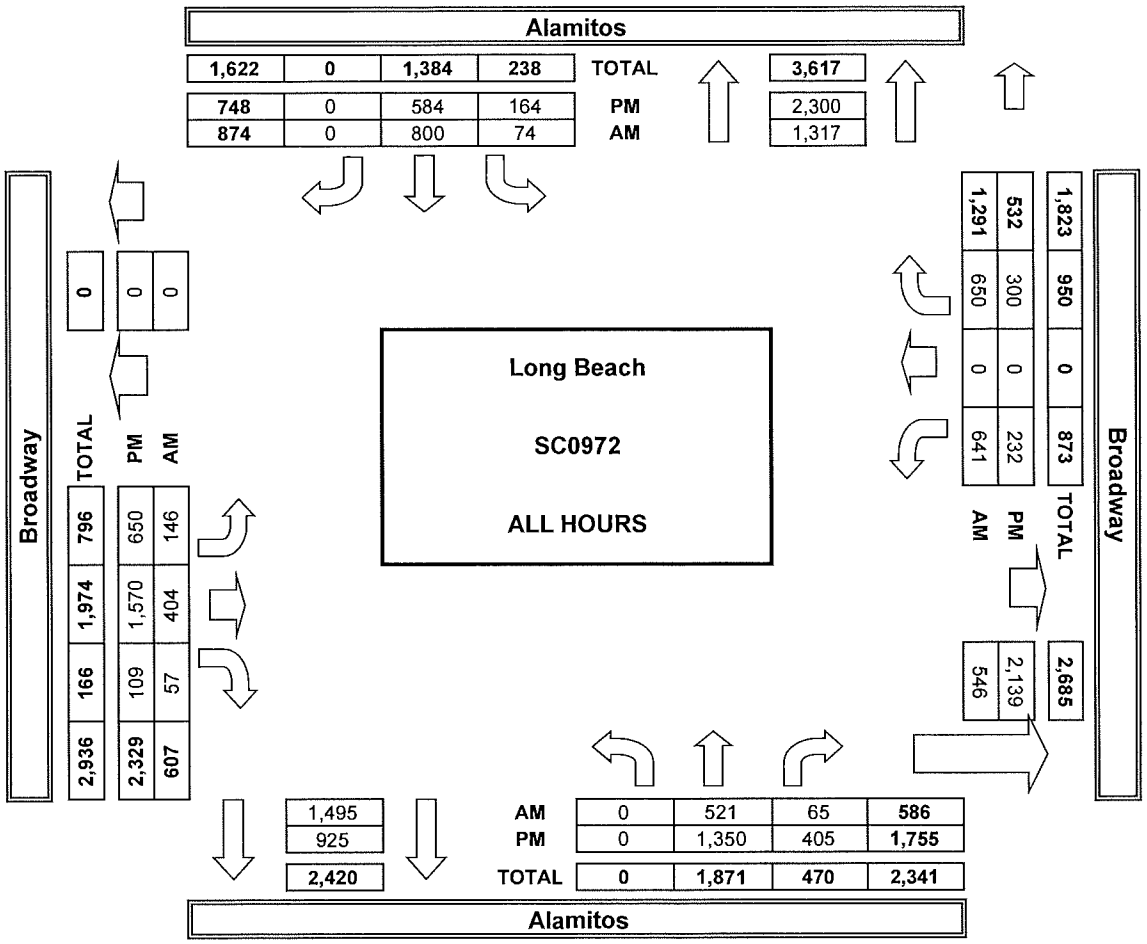
		NORTHBOUND Alamitos			SOUTHBOUND Alamitos			EASTBOUND Broadway			WESTBOUND Broadway				U-TURNS				
	LANES:	NL X	NT 2	NR 0	SL 1	ST 1	SR X	EL 2	ET 2	ER 1	WL 1	WT X	WR 1	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	0	39	4	8	69	0	14	45	6	49	0	69	303	0	0	0	1	1
	7:15 AM	0	69	9	5	99	0	18	39	6	76	0	84	405	0	0	0	1	1
	7:30 AM	0	69	5	8	99	0	12	43	4	82	0	89	411	0	0	0	0	0
	7:45 AM	0	65	7	15	122	0	17	61	10	110	0	92	499	0	0	0	1	1
	8:00 AM	0	72	12	10	102	0	16	44	6	89	0	73	424	0	0	0	0	0
	8:15 AM	0	70	6	4	118	0	20	60	4	87	0	79	448	0	0	0	0	0
	8:30 AM	0	76	12	9	87	0	22	59	9	74	0	70	418	0	0	0	0	0
	8:45 AM	0	61	10	15	104	0	27	53	12	74	0	94	450	0	0	0	0	0
	VOLUMES	0	521	65	74	800	0	146	404	57	641	0	650	3,358	0	0	0	3	3
	APPROACH %	0%	89%	11%	8%	92%	0%	24%	67%	9%	50%	0%	50%						
	APP/DEPART	586	/	1,317	874	/	1,495	607	/	546	1,291	/	0	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	0	283	37	38	429	0	75	224	29	360	0	314	1,789					
	APPROACH %	0%	88%	12%	8%	92%	0%	23%	68%	9%	53%	0%	47%						
	PEAK HR FACTOR		0.909			0.852			0.911			0.834		0.896					
	APP/DEPART	320	/	672	467	/	817	328	/	300	674	/	0	0					
PM	4:00 PM	0	138	46	16	67	0	61	171	14	28	0	29	570	0	0	0	0	0
	4:15 PM	0	148	47	25	71	0	72	164	11	26	0	43	607	0	0	0	0	0
	4:30 PM	0	196	52	21	69	0	93	193	10	25	0	35	694	0	0	0	0	0
	4:45 PM	0	145	46	26	68	0	89	218	13	29	0	32	666	0	0	0	0	0
	5:00 PM	0	206	69	17	67	0	94	208	17	35	0	50	763	0	0	0	0	0
	5:15 PM	0	190	56	23	80	0	89	230	10	37	0	39	754	0	0	0	0	0
	5:30 PM	0	160	55	21	87	0	92	198	13	27	0	32	685	0	0	0	0	0
	5:45 PM	0	167	34	15	75	0	60	188	21	25	0	40	625	0	0	0	0	0
	VOLUMES	0	1,350	405	164	584	0	650	1,570	109	232	0	300	5,364	0	0	0	0	0
	APPROACH %	0%	77%	23%	22%	78%	0%	28%	67%	5%	44%	0%	56%						
	APP/DEPART	1,755	/	2,300	748	/	925	2,329	/	2,139	532	/	0	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	737	223	87	284	0	365	849	50	126	0	156	2,877					
	APPROACH %	0%	77%	23%	23%	77%	0%	29%	67%	4%	45%	0%	55%						
	PEAK HR FACTOR		0.873			0.900			0.960			0.829		0.943					
	APP/DEPART	960	/	1,258	371	/	460	1,264	/	1,159	282	/	0	0					

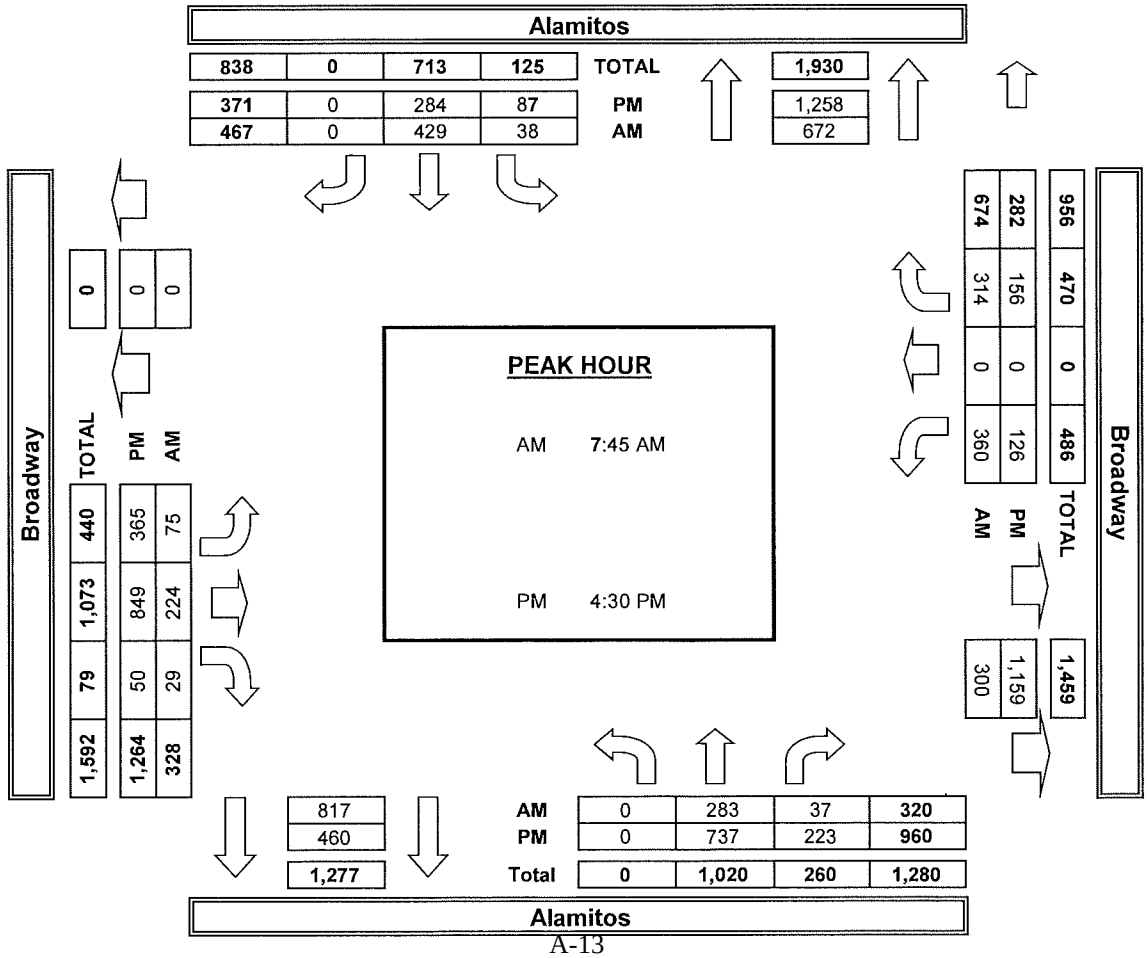


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

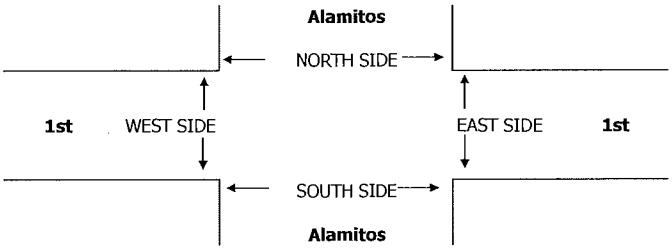
DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Thu, May 26, 16	NORTH & SOUTH:	Alamitos	LOCATION #:	10
	EAST & WEST:	1st	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ◄ W, E ►, ▲ N, S ▼

☑ Add U-Turns to Left Turns

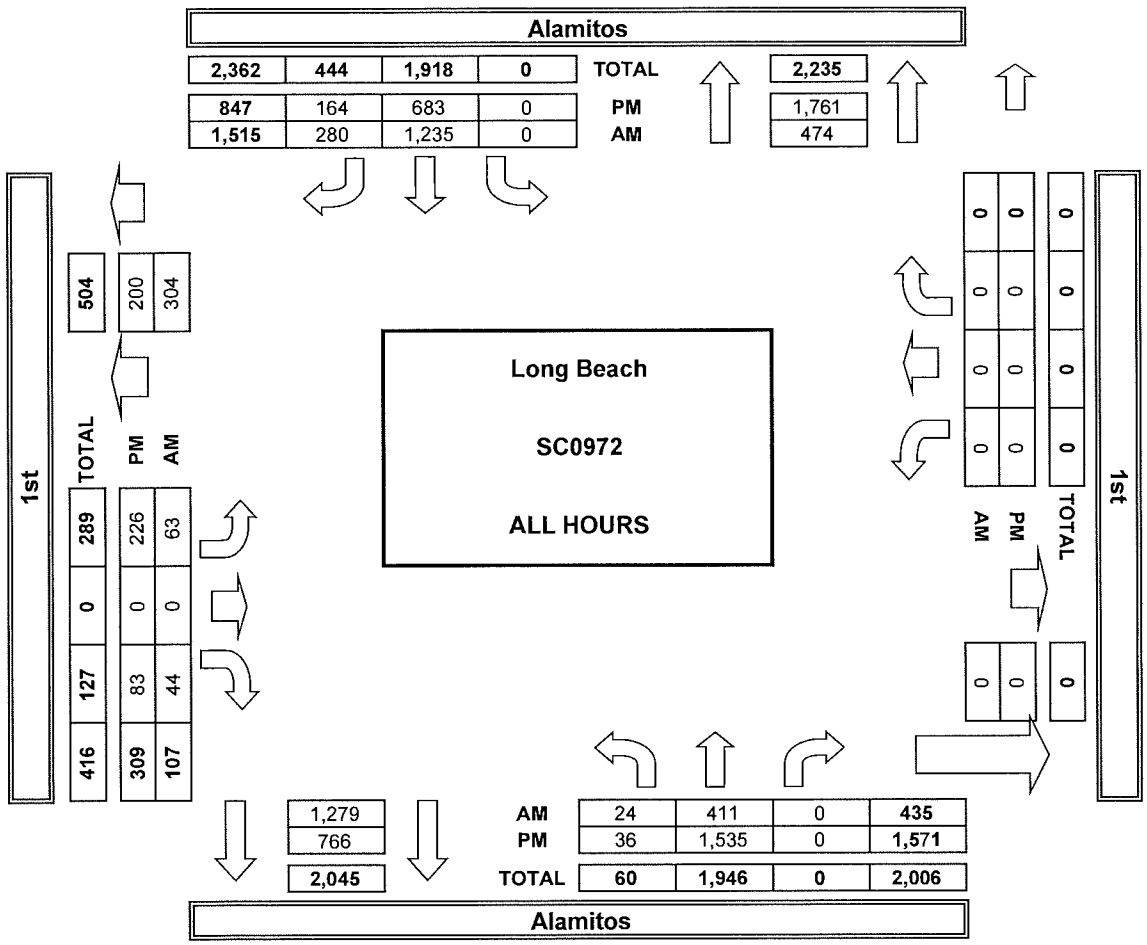
		NORTHBOUND Alamitos			SOUTHBOUND Alamitos			EASTBOUND 1st			WESTBOUND 1st				U-TURNS				
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 0	EL 0.5	ET X	ER 0.5	WL X	WT X	WR X	TOTAL	NB 0	SB X	EB 0	WB X	TTL
AM	7:00 AM	1	29	0	0	113	21	8	0	2	0	0	0	174	0	0	0	0	0
	7:15 AM	2	51	0	0	149	24	10	0	4	0	0	0	240	0	0	0	0	0
	7:30 AM	2	49	0	0	150	24	4	0	4	0	0	0	233	0	0	0	0	0
	7:45 AM	3	56	0	0	195	55	7	0	11	0	0	0	327	0	0	0	0	0
	8:00 AM	8	56	0	0	173	34	9	0	4	0	0	0	284	0	0	0	0	0
	8:15 AM	1	57	0	0	175	41	10	0	6	0	0	0	290	0	0	0	0	0
	8:30 AM	4	63	0	0	137	40	9	0	5	0	0	0	258	0	0	0	0	0
	8:45 AM	3	50	0	0	143	41	6	0	8	0	0	0	251	0	0	0	0	0
	VOLUMES	24	411	0	0	1,235	280	63	0	44	0	0	0	2,057	0	0	0	0	0
	APPROACH %	6%	94%	0%	0%	82%	18%	59%	0%	41%	0%	0%	0%						
	APP/DEPART	435	/	474	1,515	/	1,279	107	/	0	0	/	304	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	16	232	0	0	680	170	35	0	26	0	0	0	1,159					
	APPROACH %	6%	94%	0%	0%	80%	20%	57%	0%	43%	0%	0%	0%						
	PEAK HR FACTOR		0.925			0.850			0.847			0.000		0.886					
	APP/DEPART	248	/	267	850	/	706	61	/	0	0	/	186	0					
PM	4:00 PM	3	158	0	0	86	20	26	0	9	0	0	0	302	0	0	0	0	0
	4:15 PM	1	173	0	0	75	16	17	0	5	0	0	0	287	0	0	0	0	0
	4:30 PM	9	200	0	0	73	20	34	0	10	0	0	0	346	0	0	0	0	0
	4:45 PM	6	207	0	0	83	19	26	0	15	0	0	0	356	0	0	0	0	0
	5:00 PM	4	225	0	0	89	17	36	0	11	0	0	0	382	0	0	0	0	0
	5:15 PM	1	209	0	0	90	29	38	0	11	0	0	0	378	0	0	0	0	0
	5:30 PM	8	195	0	0	97	25	23	0	9	0	0	0	357	0	0	0	0	0
	5:45 PM	4	168	0	0	90	18	26	0	13	0	0	0	319	0	0	0	0	0
	VOLUMES	36	1,535	0	0	683	164	226	0	83	0	0	0	2,727	0	0	0	0	0
	APPROACH %	2%	98%	0%	0%	81%	19%	73%	0%	27%	0%	0%	0%						
	APP/DEPART	1,571	/	1,761	847	/	766	309	/	0	0	/	200	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	19	836	0	0	359	90	123	0	46	0	0	0	1,473					
	APPROACH %	2%	98%	0%	0%	80%	20%	73%	0%	27%	0%	0%	0%						
	PEAK HR FACTOR		0.933			0.920			0.862			0.000		0.964					
	APP/DEPART	855	/	959	449	/	405	169	/	0	0	/	109	0					

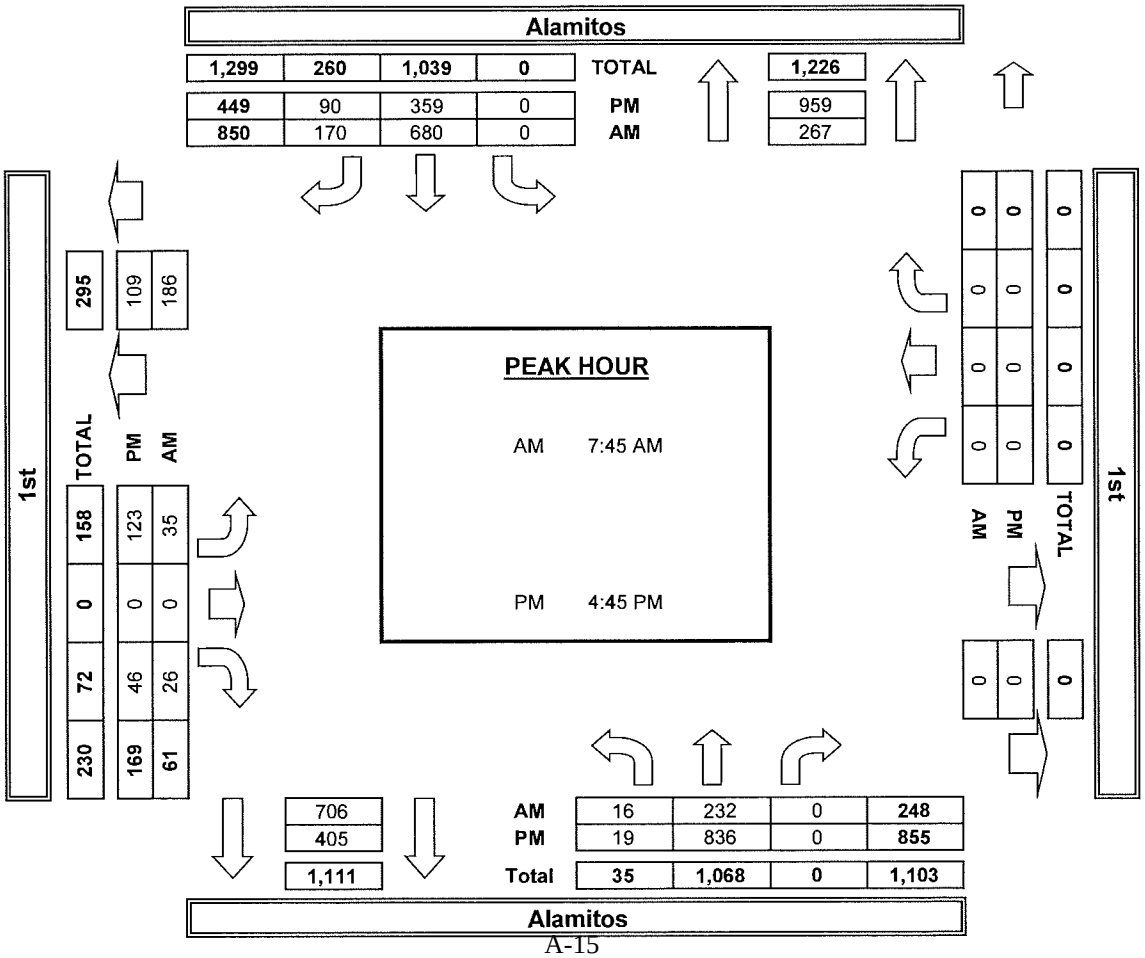


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
Wed, May 25, 16	LOCATION:	Long Beach	PROJECT #:	SC0972
	NORTH & SOUTH:	Alamitos	LOCATION #:	11
	EAST & WEST:	Medio	CONTROL:	STOP E/W

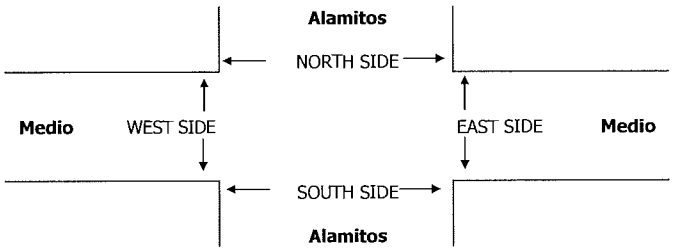
NOTES:

AM PM MD OTHER OTHER

N ◄ W E ► S

☑ Add U-Turns to Left Turns

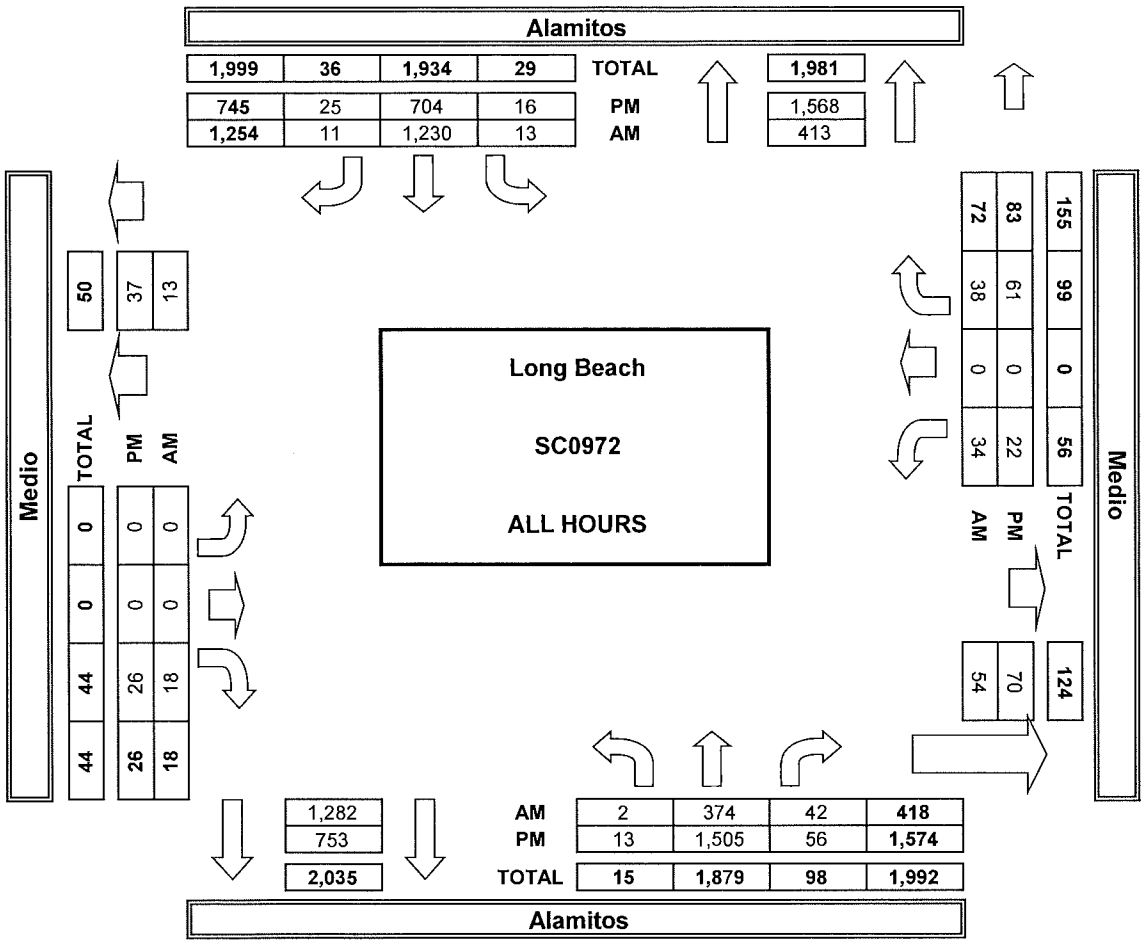
		NORTHBOUND Alamitos			SOUTHBOUND Alamitos			EASTBOUND Medio			WESTBOUND Medio				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	0	3	0	0	2	0	X	X	1	0	X	1		X	X	X	X	
AM	7:00 AM	0	25	9	2	107	0	0	0	2	2	0	2	149	0	0	0	0	0
	7:15 AM	0	38	5	3	144	2	0	0	5	4	0	3	204	0	0	0	0	0
	7:30 AM	0	40	2	1	132	0	0	0	1	7	0	9	192	0	0	0	0	0
	7:45 AM	0	48	3	2	188	2	0	0	4	4	0	5	256	0	0	0	0	0
	8:00 AM	0	67	7	3	157	2	0	0	1	6	0	4	247	0	1	0	0	1
	8:15 AM	0	45	4	2	195	1	0	0	1	4	0	6	258	0	0	0	0	0
	8:30 AM	1	53	8	0	148	2	0	0	1	4	0	6	223	0	0	0	0	0
	8:45 AM	1	58	4	0	159	2	0	0	3	3	0	3	233	0	0	0	0	0
	VOLUMES	2	374	42	13	1,230	11	0	0	18	34	0	38	1,762	0	1	0	0	1
	APPROACH %	0%	89%	10%	1%	98%	1%	0%	0%	100%	47%	0%	53%						
	APP/DEPART	418	/	413	1,254	/	1,282	18	/	54	72	/	13	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	1	213	22	7	688	7	0	0	7	18	0	21	984					
	APPROACH %	0%	90%	9%	1%	98%	1%	0%	0%	100%	46%	0%	54%						
	PEAK HR FACTOR		0.797			0.886			0.438			0.975		0.953					
	APP/DEPART	236	/	235	702	/	713	7	/	28	39	/	8	0					
PM	4:00 PM	0	160	6	2	94	1	0	0	3	4	0	5	275	0	0	0	0	0
	4:15 PM	1	168	8	1	79	1	0	0	1	3	0	9	271	0	0	0	0	0
	4:30 PM	1	190	6	1	62	4	0	0	1	5	0	6	276	0	0	0	0	0
	4:45 PM	3	191	5	4	97	3	0	0	3	2	0	12	320	1	1	0	0	2
	5:00 PM	3	221	6	3	87	0	0	0	6	2	0	8	336	0	0	0	0	0
	5:15 PM	2	214	7	1	107	4	0	0	3	3	0	10	351	0	0	0	0	0
	5:30 PM	0	190	10	1	87	3	0	0	3	1	0	7	302	0	1	0	0	1
	5:45 PM	3	171	8	3	91	9	0	0	6	2	0	4	297	0	0	0	0	0
	VOLUMES	13	1,505	56	16	704	25	0	0	26	22	0	61	2,428	1	2	0	0	3
	APPROACH %	1%	96%	4%	2%	94%	3%	0%	0%	100%	27%	0%	73%						
	APP/DEPART	1,574	/	1,568	745	/	753	26	/	70	83	/	37	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	8	816	28	9	378	10	0	0	15	8	0	37	1,309					
	APPROACH %	1%	96%	3%	2%	95%	3%	0%	0%	100%	18%	0%	82%						
	PEAK HR FACTOR		0.926			0.886			0.625			0.804		0.932					
	APP/DEPART	852	/	855	397	/	402	15	/	35	45	/	17	0					

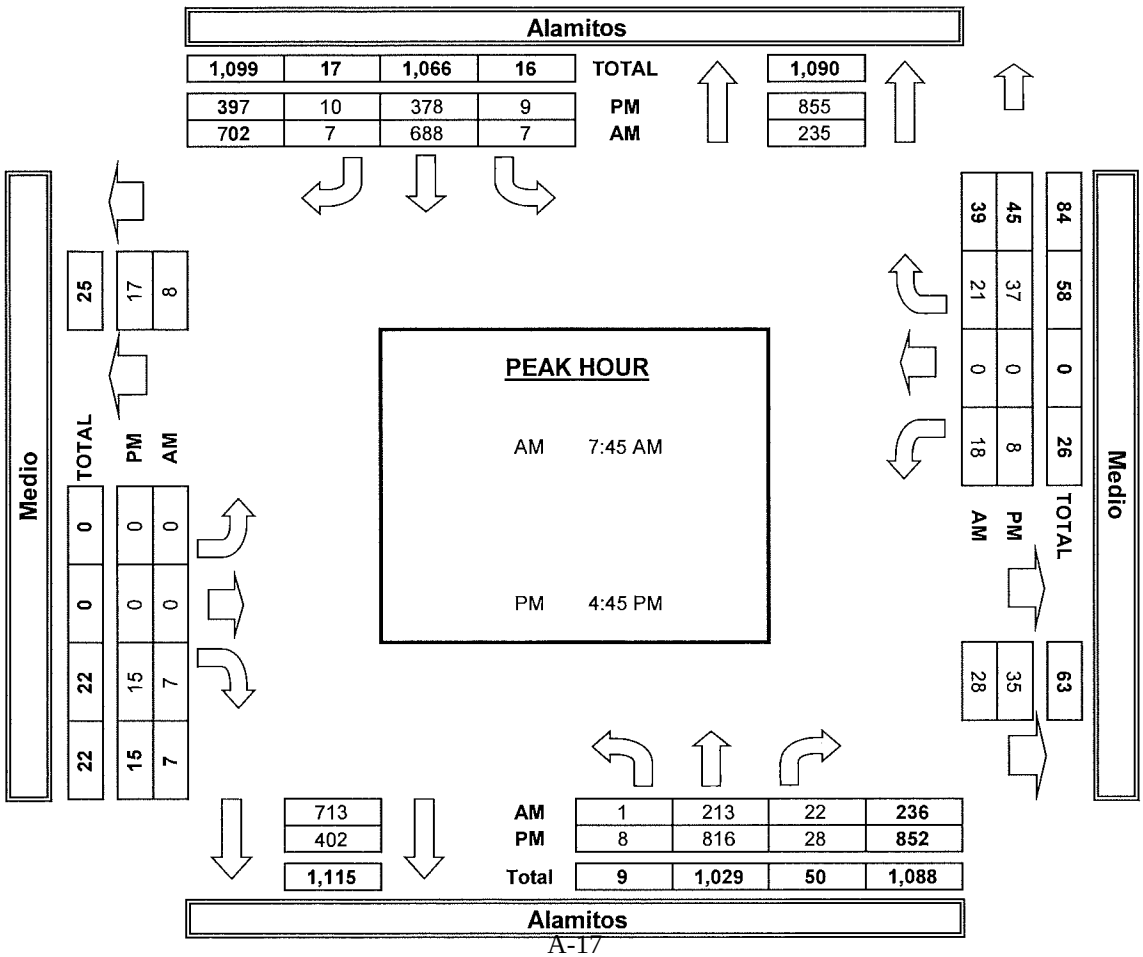


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

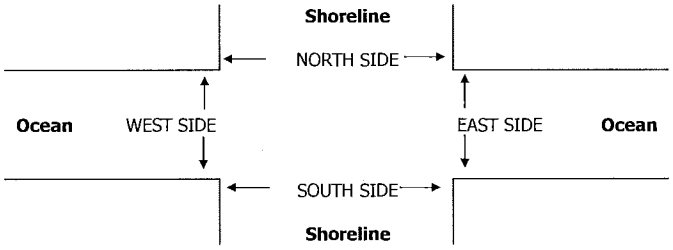
DATE:	LOCATION:	Long Beach	PROJECT #:	SC0972
Thu, May 26, 16	NORTH & SOUTH:	Shoreline	LOCATION #:	18
	EAST & WEST:	Ocean	CONTROL:	SIGNAL

NOTES:

AM PM MD OTHER OTHER ▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

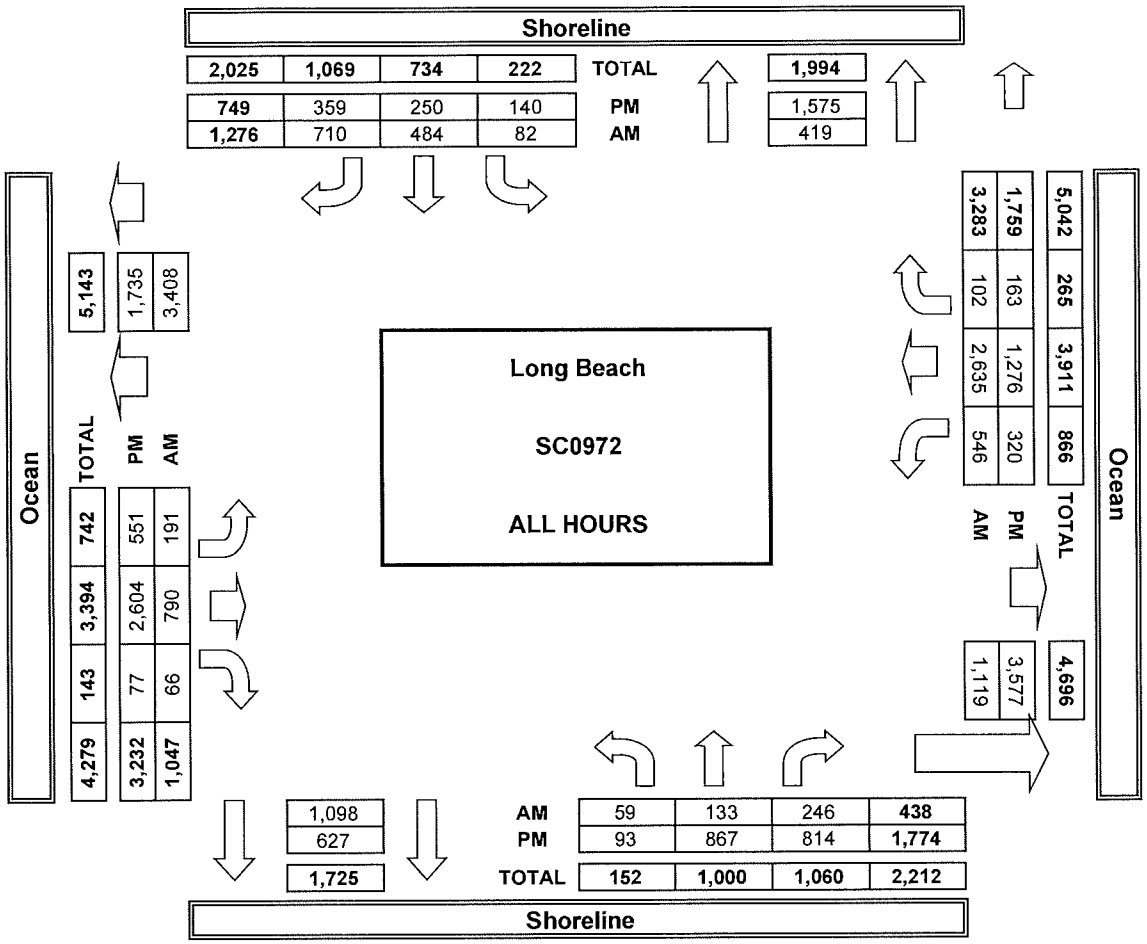
		NORTHBOUND Shoreline			SOUTHBOUND Shoreline			EASTBOUND Ocean			WESTBOUND Ocean				U-TURNS				
	LANES:	NL 2	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 3	ER 0	WL 2	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	3	10	26	4	40	64	18	101	6	37	333	6	648	0	0	0	0	0
	7:15 AM	4	14	25	8	52	92	21	101	1	56	334	9	717	0	0	1	1	2
	7:30 AM	9	13	31	10	49	80	17	108	3	67	369	13	769	3	0	0	1	4
	7:45 AM	2	18	41	11	80	111	18	101	6	100	340	11	839	0	1	0	0	1
	8:00 AM	12	23	34	13	66	83	41	98	14	76	340	15	815	0	0	3	0	3
	8:15 AM	9	15	33	8	82	109	24	107	15	76	342	11	831	1	0	1	0	2
	8:30 AM	10	22	22	11	49	90	26	93	11	78	301	15	728	0	0	1	0	1
	8:45 AM	10	18	34	17	66	81	26	81	10	56	276	22	697	0	0	2	0	2
	VOLUMES	59	133	246	82	484	710	191	790	66	546	2,635	102	6,044	4	1	8	2	15
	APPROACH %	13%	30%	56%	6%	38%	56%	18%	75%	6%	17%	80%	3%						
	APP/DEPART	438	/	419	1,276	/	1,098	1,047	/	1,119	3,283	/	3,408	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	32	69	139	42	277	383	100	414	38	319	1,391	50	3,254					
	APPROACH %	13%	29%	58%	6%	39%	55%	18%	75%	7%	18%	79%	3%						
	PEAK HR FACTOR		0.870			0.869			0.902			0.976		0.970					
	APP/DEPART	240	/	216	702	/	637	552	/	595	1,760	/	1,806	0					
PM	4:00 PM	11	79	93	21	29	51	62	254	5	30	137	25	797	0	0	0	2	2
	4:15 PM	13	103	90	17	26	40	57	270	10	42	143	17	828	0	0	0	3	3
	4:30 PM	13	105	99	17	32	17	74	369	7	34	183	19	969	0	0	1	1	2
	4:45 PM	14	127	110	20	41	45	58	304	4	36	121	15	895	0	0	0	2	2
	5:00 PM	12	132	109	20	23	51	71	396	10	48	170	27	1,069	0	2	2	3	7
	5:15 PM	9	125	109	19	33	59	76	359	12	33	187	23	1,044	1	0	1	3	5
	5:30 PM	9	100	101	9	32	48	83	341	16	38	187	19	983	0	0	2	2	4
	5:45 PM	12	96	103	17	34	48	70	311	13	59	148	18	929	0	0	2	5	7
	VOLUMES	93	867	814	140	250	359	551	2,604	77	320	1,276	163	7,514	1	2	8	21	32
	APPROACH %	5%	49%	46%	19%	33%	48%	17%	81%	2%	18%	73%	9%						
	APP/DEPART	1,774	/	1,575	749	/	627	3,232	/	3,577	1,759	/	1,735	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	42	453	422	65	122	206	300	1,407	51	178	692	87	4,025					
	APPROACH %	5%	49%	46%	17%	31%	52%	17%	80%	3%	19%	72%	9%						
	PEAK HR FACTOR		0.906			0.885			0.921			0.977		0.941					
	APP/DEPART	917	/	835	393	/	339	1,758	/	1,905	957	/	946	0					

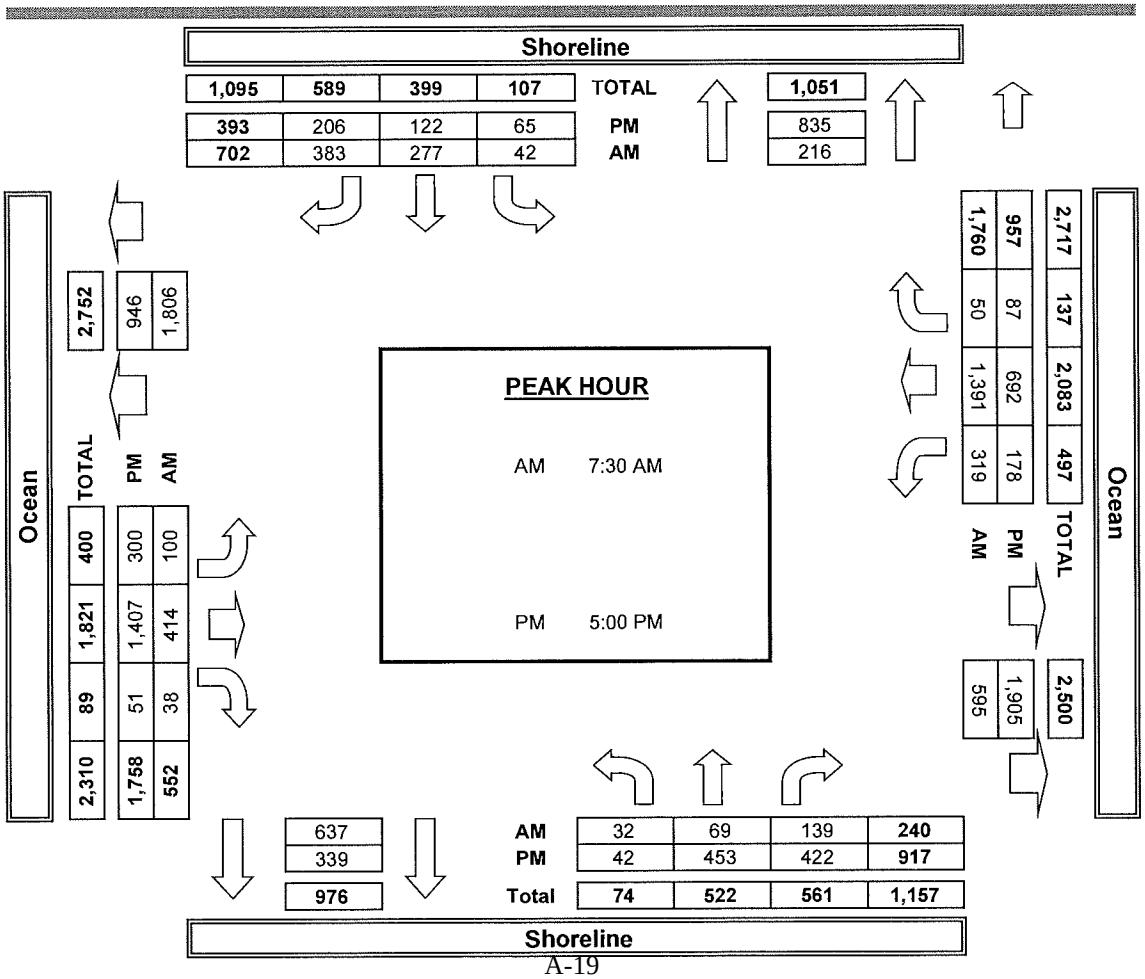


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





APPENDIX B

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

APPENDIX B-I

EXISTING TRAFFIC CONDITIONS (ICU METHODOLOGY)

AM Existing Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Alamitos Avenue at 7th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.825
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	126	Level Of Service:	D

Street Name:	Alamitos Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Permitted			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	98	319	366	56	340	109	22	320	36	204	1226	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	319	366	56	340	109	22	320	36	204	1226	58
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	98	319	366	56	340	109	22	320	36	204	1226	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	319	366	56	340	109	22	320	36	204	1226	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	319	366	56	340	109	22	320	36	204	1226	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	98	319	366	56	340	109	22	320	36	204	1226	58
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.80	0.20	1.00	1.91	0.09
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	2876	324	1600	3055	145
Capacity Analysis Module:												
Vol/Sat:	0.06	0.20	0.23	0.04	0.21	0.07	0.01	0.11	0.11	0.13	0.40	0.40
Crit Moves:	****				****						****	

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AM Existing Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Alamitos Avenue at 6th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.502
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	A

Street Name:	Alamitos Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Prot+Permit			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 1	0	1 0	2 0	0	1 0	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	0	476	9	5	574	0	289	0	120	10	0	25
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	476	9	5	574	0	289	0	120	10	0	25
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	476	9	5	574	0	289	0	120	10	0	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	476	9	5	574	0	289	0	120	10	0	25
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	476	9	5	574	0	289	0	120	10	0	25
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	476	9	5	574	0	289	0	120	10	0	25
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.96	0.04	1.00	2.00	0.00	1.00	0.00	1.00	0.29	0.00	0.71
Final Sat.:	0	3141	59	1600	3200	0	1600	0	1600	457	0	1143
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.15	0.00	0.18	0.00	0.18	0.00	0.08	0.02	0.00	0.02
Crit Moves:	****				****		****					****

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AM Existing Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Alamitos Avenue at 5th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.427
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Street Name:	Alamitos Avenue						5th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	50	438	7	23	626	78	50	21	27	5	41	25
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	438	7	23	626	78	50	21	27	5	41	25
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	438	7	23	626	78	50	21	27	5	41	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	438	7	23	626	78	50	21	27	5	41	25
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	438	7	23	626	78	50	21	27	5	41	25
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	438	7	23	626	78	50	21	27	5	41	25
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.97	0.03	1.00	1.78	0.22	0.51	0.21	0.28	0.07	0.58	0.35
Final Sat.:	1600	3150	50	1600	2845	355	816	343	441	113	924	563
Capacity Analysis Module:												
Vol/Sat:	0.03	0.14	0.14	0.01	0.22	0.22	0.03	0.06	0.06	0.00	0.04	0.04
Crit Moves:	****				****		****				****	

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AM Existing Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Alamitos Avenue at 4th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.657
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	B

Street Name:	Alamitos Avenue						4th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	0 1	1 0	0 1	0
Volume Module:												
Base Vol:	86	402	42	92	527	36	36	192	21	176	422	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	86	402	42	92	527	36	36	192	21	176	422	66
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	86	402	42	92	527	36	36	192	21	176	422	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	86	402	42	92	527	36	36	192	21	176	422	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	402	42	92	527	36	36	192	21	176	422	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	86	402	42	92	527	36	36	192	21	176	422	66
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.81	0.19	1.00	1.87	0.13	1.00	1.00	1.00	1.00	0.86	0.14
Final Sat.:	1600	2897	303	1600	2995	205	1600	1600	1600	1600	1384	216
Capacity Analysis Module:												
Vol/Sat:	0.05	0.14	0.14	0.06	0.18	0.18	0.02	0.12	0.01	0.11	0.30	0.31
Crit Moves:	****				****		****					****

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AM Existing Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alamitos Avenue at 3rd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.853
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	91	Level Of Service:	D

Street Name:	Alamitos Avenue						3rd Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	0 1	0 0	0	0 0	0 0	1	1 0
Volume Module:												
Base Vol:	310	378	22	30	468	149	0	0	0	0	623	69
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	310	378	22	30	468	149	0	0	0	0	623	69
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	310	378	22	30	468	149	0	0	0	0	623	69
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	310	378	22	30	468	149	0	0	0	0	623	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	310	378	22	30	468	149	0	0	0	0	623	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	310	378	22	30	468	149	0	0	0	0	623	69
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.89	0.11	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.80	0.20
Final Sat.:	1600	3024	176	1600	1600	1600	0	0	0	0	2881	319
Capacity Analysis Module:												
Vol/Sat:	0.19	0.13	0.13	0.02	0.29	0.09	0.00	0.00	0.00	0.00	0.22	0.22
Crit Moves:	****				****							****

AM Existing Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Alamitos Avenue at Broadway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.713
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	62	Level Of Service:	C

Street Name:	Alamitos Avenue						Broadway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 1	0	1 0	1 0	0	2 0	2 0	1	1 0	0 0	1
Volume Module:												
Base Vol:	0	283	37	38	429	0	75	224	29	360	0	314
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	283	37	38	429	0	75	224	29	360	0	314
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	283	37	38	429	0	75	224	29	360	0	314
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	283	37	38	429	0	75	224	29	360	0	314
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	283	37	38	429	0	75	224	29	360	0	314
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	283	37	38	429	0	75	224	29	360	0	314
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.77	0.23	1.00	1.00	0.00	2.00	2.00	1.00	1.00	0.00	1.00
Final Sat.:	0	2830	370	1600	1600	0	2880	3200	1600	1600	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.10	0.10	0.02	0.27	0.00	0.03	0.07	0.02	0.23	0.00	0.20
Crit Moves:	****				****			****		****		

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AM Existing Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Alamitos Avenue at 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.573
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	A

Street Name:	Alamitos Avenue						1st Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	1 0	1	0 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	16	232	0	0	680	170	35	0	26	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	232	0	0	680	170	35	0	26	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	232	0	0	680	170	35	0	26	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	232	0	0	680	170	35	0	26	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	232	0	0	680	170	35	0	26	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	232	0	0	680	170	35	0	26	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.00	1.00	0.57	0.00	0.43	0.00	0.00	0.00
Final Sat.:	1600	3200	0	0	1600	1600	918	0	682	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.07	0.00	0.00	0.43	0.11	0.04	0.00	0.04	0.00	0.00	0.00
Crit Moves:	****				****				****			

AM Existing Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Alamitos Avenue/Shoreline Drive at Ocean Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.779
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	82	Level Of Service:	C

Street Name:	Alamitos Avenue/Shoreline Drive						Ocean Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 1	0	1 0	3 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	32	69	139	42	277	383	100	414	38	319	1391	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	69	139	42	277	383	100	414	38	319	1391	50
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	69	139	42	277	383	100	414	38	319	1391	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	32	69	139	42	277	383	100	414	38	319	1391	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	69	139	42	277	383	100	414	38	319	1391	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	32	69	139	42	277	383	100	414	38	319	1391	50
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	2.00	1.93	0.07
Final Sat.:	1600	3200	1600	1600	3200	1600	1600	4800	1600	2880	3089	111
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.09	0.03	0.09	0.24	0.06	0.09	0.02	0.11	0.45	0.45
OvlAdjV/S:			0.00									
Crit Moves:					****		****				****	

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PM Existing Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Alamitos Avenue at 7th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.975
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	154	Level Of Service:	E

Street Name:	Alamitos Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	97	416	755	58	329	63	37	715	39	130	702	59
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	97	416	755	58	329	63	37	715	39	130	702	59
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	97	416	755	58	329	63	37	715	39	130	702	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	97	416	755	58	329	63	37	715	39	130	702	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	97	416	755	58	329	63	37	715	39	130	702	59
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	97	416	755	58	329	63	37	715	39	130	702	59
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.90	0.10	1.00	1.84	0.16
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	3034	166	1600	2952	248
Capacity Analysis Module:												
Vol/Sat:	0.06	0.26	0.47	0.04	0.21	0.04	0.02	0.24	0.24	0.08	0.24	0.24
Crit Moves:			****	****				****		****		

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PM Existing Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Alamitos Avenue at 6th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.664
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	B

Street Name:	Alamitos Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Prot+Permit			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 1	0	1 0	2 0	0	1 0	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	0	835	9	8	489	0	418	0	267	9	0	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	835	9	8	489	0	418	0	267	9	0	13
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	835	9	8	489	0	418	0	267	9	0	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	835	9	8	489	0	418	0	267	9	0	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	835	9	8	489	0	418	0	267	9	0	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	835	9	8	489	0	418	0	267	9	0	13
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.98	0.02	1.00	2.00	0.00	1.00	0.00	1.00	0.41	0.00	0.59
Final Sat.:	0	3166	34	1600	3200	0	1600	0	1600	655	0	945
Capacity Analysis Module:												
Vol/Sat:	0.00	0.26	0.26	0.01	0.15	0.00	0.26	0.00	0.17	0.01	0.00	0.01
Crit Moves:		****		****			****					****

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PM Existing Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Alamitos Avenue at 5th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.446
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Street Name:	Alamitos Avenue						5th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	17	795	15	38	673	30	38	30	40	3	12	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	795	15	38	673	30	38	30	40	3	12	12
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	17	795	15	38	673	30	38	30	40	3	12	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	17	795	15	38	673	30	38	30	40	3	12	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	795	15	38	673	30	38	30	40	3	12	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	795	15	38	673	30	38	30	40	3	12	12
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.96	0.04	1.00	1.91	0.09	0.35	0.28	0.37	0.11	0.45	0.44
Final Sat.:	1600	3141	59	1600	3063	137	563	444	593	178	711	711
Capacity Analysis Module:												
Vol/Sat:	0.01	0.25	0.25	0.02	0.22	0.22	0.02	0.07	0.07	0.00	0.02	0.02
Crit Moves:		****		****				****		****		

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PM Existing Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Alamitos Avenue at 4th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.742
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	56	Level Of Service:	C

Street Name:	Alamitos Avenue						4th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	0 1	1 0	0	1 0
Volume Module:												
Base Vol:	39	747	145	159	513	42	44	367	42	55	204	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	747	145	159	513	42	44	367	42	55	204	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	747	145	159	513	42	44	367	42	55	204	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	39	747	145	159	513	42	44	367	42	55	204	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	747	145	159	513	42	44	367	42	55	204	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	39	747	145	159	513	42	44	367	42	55	204	47
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.67	0.33	1.00	1.85	0.15	1.00	1.00	1.00	1.00	0.81	0.19
Final Sat.:	1600	2680	520	1600	2958	242	1600	1600	1600	1600	1300	300
Capacity Analysis Module:												
Vol/Sat:	0.02	0.28	0.28	0.10	0.17	0.17	0.03	0.23	0.03	0.03	0.16	0.16
Crit Moves:		****		****				****		****		

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PM Existing Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alamitos Avenue at 3rd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.577
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	84	Level Of Service:	A

Street Name:	Alamitos Avenue						3rd Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	1 0	1	0 0	0 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	117	921	190	92	404	71	0	0	0	0	205	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	117	921	190	92	404	71	0	0	0	0	205	51
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	117	921	190	92	404	71	0	0	0	0	205	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	117	921	190	92	404	71	0	0	0	0	205	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	117	921	190	92	404	71	0	0	0	0	205	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	117	921	190	92	404	71	0	0	0	0	205	51
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.66	0.34	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.60	0.40
Final Sat.:	1600	2653	547	1600	1600	1600	0	0	0	0	2563	638
Capacity Analysis Module:												
Vol/Sat:	0.07	0.35	0.35	0.06	0.25	0.04	0.00	0.00	0.00	0.00	0.08	0.08
Crit Moves:		****									****	

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PM Existing Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Alamitos Avenue at Broadway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.867
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	95	Level Of Service:	D

Street Name:	Alamitos Avenue						Broadway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 1	0	1 0	1 0	0	2 0	2 0	1	1 0	0 0	1
Volume Module:												
Base Vol:	0	737	223	87	284	0	365	849	50	126	0	156
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	737	223	87	284	0	365	849	50	126	0	156
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	737	223	87	284	0	365	849	50	126	0	156
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	737	223	87	284	0	365	849	50	126	0	156
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	737	223	87	284	0	365	849	50	126	0	156
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	737	223	87	284	0	365	849	50	126	0	156
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.54	0.46	1.00	1.00	0.00	2.00	2.00	1.00	1.00	0.00	1.00
Final Sat.:	0	2457	743	1600	1600	0	2880	3200	1600	1600	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.30	0.05	0.18	0.00	0.13	0.27	0.03	0.08	0.00	0.10
Crit Moves:		****		****				****				****

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PM Existing Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Alamitos Avenue at 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.467
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	A

Street Name:	Alamitos Avenue						1st Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	1 0	1	0 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	19	836	0	0	359	90	123	0	46	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	836	0	0	359	90	123	0	46	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	836	0	0	359	90	123	0	46	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	19	836	0	0	359	90	123	0	46	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	836	0	0	359	90	123	0	46	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	836	0	0	359	90	123	0	46	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.00	1.00	0.73	0.00	0.27	0.00	0.00	0.00
Final Sat.:	1600	3200	0	0	1600	1600	1164	0	436	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.26	0.00	0.00	0.22	0.06	0.11	0.00	0.11	0.00	0.00	0.00
Crit Moves:		****		****			****					

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PM Existing Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Alamitos Avenue/Shoreline Drive at Ocean Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.854
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	96	Level Of Service:	D

Street Name:	Alamitos Avenue/Shoreline Drive						Ocean Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 1	0	1 0	3 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	42	453	422	65	122	206	300	1407	51	178	692	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	453	422	65	122	206	300	1407	51	178	692	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	453	422	65	122	206	300	1407	51	178	692	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	42	453	422	65	122	206	300	1407	51	178	692	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	453	422	65	122	206	300	1407	51	178	692	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	453	422	65	122	206	300	1407	51	178	692	87
OvlAdjVol:			323									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	2.00	1.78	0.22
Final Sat.:	1600	3200	1600	1600	3200	1600	1600	4800	1600	2880	2843	357
Capacity Analysis Module:												
Vol/Sat:	0.03	0.14	0.26	0.04	0.04	0.13	0.19	0.29	0.03	0.06	0.24	0.24
OvlAdjV/S:			0.20									
Crit Moves:			****	****			****				****	

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APPENDIX B-II

EXISTING TRAFFIC CONDITIONS (HCM METHODOLOGY)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	320	36	204	1226	58	98	319	366	56	340	109
Future Volume (veh/h)	22	320	36	204	1226	58	98	319	366	56	340	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	320	36	204	1226	58	98	319	366	56	340	109
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	887	99	239	1539	73	386	860	944	372	860	731
Arrive On Green	0.28	0.28	0.28	0.13	0.45	0.45	0.77	0.77	0.77	0.46	0.46	0.46
Sat Flow, veh/h	429	3211	358	1774	3441	163	937	1863	1583	754	1863	1583
Grp Volume(v), veh/h	22	175	181	204	630	654	98	319	366	56	340	109
Grp Sat Flow(s),veh/h/ln	429	1770	1799	1774	1770	1834	937	1863	1583	754	1863	1583
Q Serve(g_s), s	5.1	8.8	8.9	12.4	33.6	33.7	6.0	6.0	7.1	5.2	13.2	4.4
Cycle Q Clear(g_c), s	20.0	8.8	8.9	12.4	33.6	33.7	19.2	6.0	7.1	11.3	13.2	4.4
Prop In Lane	1.00		0.20	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	126	489	497	239	791	820	386	860	944	372	860	731
V/C Ratio(X)	0.17	0.36	0.36	0.85	0.80	0.80	0.25	0.37	0.39	0.15	0.40	0.15
Avail Cap(c_a), veh/h	126	489	497	452	997	1034	386	860	944	372	860	731
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	32.0	32.0	46.5	26.1	26.1	12.4	7.5	4.4	20.9	19.5	17.1
Incr Delay (d2), s/veh	0.7	0.4	0.4	8.5	3.6	3.5	1.5	1.1	1.1	0.9	1.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.3	4.5	6.6	17.2	17.9	1.7	3.2	3.2	1.2	7.1	2.0
LnGrp Delay(d),s/veh	43.5	32.4	32.5	55.0	29.7	29.6	13.9	8.6	5.5	21.7	20.8	17.5
LnGrp LOS	D	C	C	E	C	C	B	A	A	C	C	B
Approach Vol, veh/h		378			1488			783			505	
Approach Delay, s/veh		33.1			33.2			7.8			20.2	
Approach LOS		C			C			A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		55.8	18.8	35.4		55.8		54.2
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0		5.0
Max Green Setting (Gmax), s		38.0	28.0	30.0		38.0		62.0
Max Q Clear Time (g_c+I1), s		21.2	14.4	22.0		15.2		35.7
Green Ext Time (p_c), s		6.4	0.5	5.9		7.2		13.5

Intersection Summary	
HCM 2010 Ctrl Delay	24.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	289	0	120	10	0	25	0	476	9	5	574	0
Future Volume (veh/h)	289	0	120	10	0	25	0	476	9	5	574	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	289	0	120	10	0	25	0	476	9	5	574	0
Adj No. of Lanes	1	1	0	0	1	0	0	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	0
Cap, veh/h	431	0	471	102	19	90	0	1850	35	603	1843	0
Arrive On Green	0.11	0.00	0.30	0.10	0.00	0.10	0.00	1.00	1.00	1.00	1.00	0.00
Sat Flow, veh/h	1774	0	1583	176	189	914	0	3647	67	907	3632	0
Grp Volume(v), veh/h	289	0	120	35	0	0	0	237	248	5	574	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1279	0	0	0	1770	1851	907	1770	0
Q Serve(g_s), s	0.7	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	0.0	3.2	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	0.29		0.71	0.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	431	0	471	211	0	0	0	921	964	603	1843	0
V/C Ratio(X)	0.67	0.00	0.25	0.17	0.00	0.00	0.00	0.26	0.26	0.01	0.31	0.00
Avail Cap(c_a), veh/h	659	0	691	226	0	0	0	921	964	603	1843	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.99	0.99	0.83	0.83	0.00
Uniform Delay (d), s/veh	21.3	0.0	14.7	22.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.3	0.4	0.0	0.0	0.0	0.7	0.6	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	1.4	0.5	0.0	0.0	0.0	0.2	0.2	0.0	0.1	0.0
LnGrp Delay(d),s/veh	23.1	0.0	15.0	23.2	0.0	0.0	0.0	0.7	0.6	0.0	0.4	0.0
LnGrp LOS	C		B	C				A	A	A	A	
Approach Vol, veh/h		409			35			485			579	
Approach Delay, s/veh		20.7			23.2			0.7			0.4	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		33.6		21.4		33.6	10.9	10.4
Change Period (Y+Rc), s		5.0		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		21.0		24.0		21.0	13.0	6.0
Max Q Clear Time (g_c+I1), s		2.0		5.2		2.0	2.7	5.2
Green Ext Time (p_c), s		6.8		1.5		6.8	1.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	6.5
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	21	27	5	41	25	50	438	7	23	626	78
Future Volume (veh/h)	50	21	27	5	41	25	50	438	7	23	626	78
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	50	21	27	5	41	25	50	438	7	23	626	78
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	46	45	76	107	62	662	2558	41	806	2273	283
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	708	456	442	63	1065	613	740	3565	57	941	3169	394
Grp Volume(v), veh/h	98	0	0	71	0	0	50	217	228	23	349	355
Grp Sat Flow(s),veh/h/ln	1606	0	0	1740	0	0	740	1770	1853	941	1770	1793
Q Serve(g_s), s	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.51		0.28	0.07		0.35	1.00		0.03	1.00		0.22
Lane Grp Cap(c), veh/h	261	0	0	246	0	0	662	1269	1329	806	1269	1286
V/C Ratio(X)	0.38	0.00	0.00	0.29	0.00	0.00	0.08	0.17	0.17	0.03	0.28	0.28
Avail Cap(c_a), veh/h	787	0	0	851	0	0	662	1269	1329	806	1269	1286
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.98	0.98	0.98	0.96	0.96	0.96
Uniform Delay (d), s/veh	23.5	0.0	0.0	23.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.6	0.0	0.0	0.2	0.3	0.3	0.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	1.0	0.0	0.0	0.0	0.1	0.1	0.0	0.2	0.2
LnGrp Delay(d),s/veh	24.4	0.0	0.0	23.8	0.0	0.0	0.2	0.3	0.3	0.1	0.5	0.5
LnGrp LOS	C			C			A	A	A	A	A	A
Approach Vol, veh/h		98			71			495			727	
Approach Delay, s/veh		24.4			23.8			0.3			0.5	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		44.5		10.5		44.5		10.5
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		20.0		25.0		20.0		25.0
Max Q Clear Time (g_c+I1), s		2.0		5.0		2.0		4.1
Green Ext Time (p_c), s		7.4		0.9		7.4		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	3.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	192	21	176	422	66	86	402	42	92	527	36
Future Volume (veh/h)	36	192	21	176	422	66	86	402	42	92	527	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	36	192	21	176	422	66	86	402	42	92	527	36
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	645	549	381	545	85	540	1821	189	560	1892	129
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.75	0.75	0.75	1.00	1.00	1.00
Sat Flow, veh/h	904	1863	1583	1164	1573	246	844	3237	336	942	3363	229
Grp Volume(v), veh/h	36	192	21	176	0	488	86	219	225	92	277	286
Grp Sat Flow(s),veh/h/ln	904	1863	1583	1164	0	1819	844	1770	1803	942	1770	1822
Q Serve(g_s), s	4.1	8.3	1.0	14.3	0.0	26.3	3.3	4.1	4.1	0.9	0.0	0.0
Cycle Q Clear(g_c), s	30.4	8.3	1.0	22.5	0.0	26.3	3.3	4.1	4.1	5.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.19	1.00		0.13
Lane Grp Cap(c), veh/h	162	645	549	381	0	630	540	996	1015	560	996	1025
V/C Ratio(X)	0.22	0.30	0.04	0.46	0.00	0.77	0.16	0.22	0.22	0.16	0.28	0.28
Avail Cap(c_a), veh/h	317	965	820	581	0	943	540	996	1015	560	996	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.99	0.99	0.99	0.96	0.96	0.96
Uniform Delay (d), s/veh	45.7	26.2	23.8	34.4	0.0	32.1	6.5	6.6	6.6	0.2	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.3	0.0	0.9	0.0	2.3	0.6	0.5	0.5	0.6	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.3	0.4	4.7	0.0	13.6	0.8	2.1	2.2	0.3	0.2	0.2
LnGrp Delay(d),s/veh	46.4	26.4	23.8	35.3	0.0	34.4	7.1	7.1	7.1	0.8	0.7	0.7
LnGrp LOS	D	C	C	D		C	A	A	A	A	A	A
Approach Vol, veh/h		249			664			530			655	
Approach Delay, s/veh		29.1			34.6			7.1			0.7	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		66.9		43.1		66.9		43.1
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		43.0		57.0		43.0		57.0
Max Q Clear Time (g_c+I1), s		6.1		32.4		7.0		28.3
Green Ext Time (p_c), s		8.9		5.7		8.8		5.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	623	69	310	378	22	30	468	149
Future Volume (veh/h)	0	0	0	0	623	69	310	378	22	30	468	149
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				0	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h				0	623	69	310	378	22	30	468	149
Adj No. of Lanes				0	2	0	1	2	0	1	1	1
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	2	0	2	2	2	2	2	2
Cap, veh/h				0	0	0	968	3246	188	422	677	576
Arrive On Green				0.00	0.00	0.00	1.00	1.00	1.00	0.73	0.73	0.73
Sat Flow, veh/h					0		1774	3400	197	981	1863	1583
Grp Volume(v), veh/h					0.0		310	196	204	30	468	149
Grp Sat Flow(s),veh/h/ln							1774	1770	1828	981	1863	1583
Q Serve(g_s), s							0.0	0.0	0.0	1.0	15.1	3.5
Cycle Q Clear(g_c), s							0.0	0.0	0.0	1.0	15.1	3.5
Prop In Lane							1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h							968	1689	1745	422	677	576
V/C Ratio(X)							0.32	0.12	0.12	0.07	0.69	0.26
Avail Cap(c_a), veh/h							968	1689	1745	422	677	576
HCM Platoon Ratio							2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)							0.96	0.96	0.96	0.96	0.96	0.96
Uniform Delay (d), s/veh							0.0	0.0	0.0	9.7	11.6	10.0
Incr Delay (d2), s/veh							0.2	0.1	0.1	0.3	5.5	1.0
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							0.0	0.1	0.1	0.3	8.6	1.7
LnGrp Delay(d),s/veh							0.2	0.1	0.1	10.0	17.1	11.1
LnGrp LOS							A	A	A	A	B	B
Approach Vol, veh/h								710			647	
Approach Delay, s/veh								0.2			15.4	
Approach LOS								A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		
Phs Duration (G+Y+Rc), s		110.0			65.0	45.0		
Change Period (Y+Rc), s		5.0			5.0	5.0		
Max Green Setting (Gmax), s		73.0			28.0	40.0		
Max Q Clear Time (g_c+I1), s		2.0			2.0	17.1		
Green Ext Time (p_c), s		3.6			3.4	3.7		

Intersection Summary	
HCM 2010 Ctrl Delay	7.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	224	29	360	0	314	0	283	37	38	429	0
Future Volume (veh/h)	75	224	29	360	0	314	0	283	37	38	429	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	0	1863	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	75	224	29	360	0	314	0	283	37	38	429	0
Adj No. of Lanes	2	2	1	1	0	1	0	2	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	310	319	143	0	0	0	0	2581	334	911	1525	0
Arrive On Green	0.09	0.09	0.09	0.00	0.00	0.00	0.00	0.82	0.82	1.00	1.00	0.00
Sat Flow, veh/h	3442	3539	1583		0		0	3245	408	1055	1863	0
Grp Volume(v), veh/h	75	224	29		0.0		0	158	162	38	429	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583				0	1770	1791	1055	1863	0
Q Serve(g_s), s	2.2	6.8	1.9				0.0	1.9	2.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	2.2	6.8	1.9				0.0	1.9	2.0	2.1	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	310	319	143				0	1449	1466	911	1525	0
V/C Ratio(X)	0.24	0.70	0.20				0.00	0.11	0.11	0.04	0.28	0.00
Avail Cap(c_a), veh/h	563	579	259				0	1449	1466	911	1525	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.69	0.69	0.00
Uniform Delay (d), s/veh	46.5	48.6	46.4				0.0	2.0	2.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	2.8	0.7				0.0	0.2	0.2	0.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.4	0.8				0.0	1.0	1.0	0.0	0.1	0.0
LnGrp Delay(d),s/veh	46.9	51.4	47.1				0.0	2.1	2.1	0.1	0.3	0.0
LnGrp LOS	D	D	D					A	A	A	A	
Approach Vol, veh/h		328						320			467	
Approach Delay, s/veh		50.0						2.1			0.3	
Approach LOS		D						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		95.1		14.9		95.1		
Change Period (Y+Rc), s		5.0		5.0		5.0		
Max Green Setting (Gmax), s		41.0		18.0		41.0		
Max Q Clear Time (g_c+I1), s		4.0		8.8		4.1		
Green Ext Time (p_c), s		5.5		1.2		5.5		

Intersection Summary	
HCM 2010 Ctrl Delay	15.4
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	26	16	232	680	170
Future Volume (vph)	35	26	16	232	680	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	0.95	1.00	1.00
Frt	0.94		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1707		1770	3539	1863	1583
Flt Permitted	0.97		0.38	1.00	1.00	1.00
Satd. Flow (perm)	1707		704	3539	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	26	16	232	680	170
RTOR Reduction (vph)	24	0	0	0	0	29
Lane Group Flow (vph)	37	0	16	232	680	141
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	8.8		91.2	91.2	91.2	91.2
Effective Green, g (s)	8.8		91.2	91.2	91.2	91.2
Actuated g/C Ratio	0.08		0.83	0.83	0.83	0.83
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	136		583	2934	1544	1312
v/s Ratio Prot				0.07	c0.37	
v/s Ratio Perm	c0.02		0.02			0.09
v/c Ratio	0.27		0.03	0.08	0.44	0.11
Uniform Delay, d1	47.6		1.6	1.7	2.5	1.8
Progression Factor	1.00		0.29	0.28	0.93	1.16
Incremental Delay, d2	1.1		0.1	0.0	0.8	0.1
Delay (s)	48.7		0.5	0.5	3.2	2.2
Level of Service	D		A	A	A	A
Approach Delay (s)	48.7			0.5	3.0	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱		↑↑↑	↑↑↳	
Traffic Vol, veh/h	0	7	0	213	688	7
Future Vol, veh/h	0	7	0	213	688	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	0	213	688	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	348	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	648	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	648	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	648	-	-
HCM Lane V/C Ratio	-	0.011	-	-
HCM Control Delay (s)	-	10.6	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	414	38	319	1391	50	32	69	139	42	277	383
Future Volume (veh/h)	100	414	38	319	1391	50	32	69	139	42	277	383
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	100	414	0	319	1391	50	32	69	139	42	277	383
Adj No. of Lanes	1	3	1	2	2	0	1	2	1	1	3	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	1942	605	388	1470	53	166	1030	639	295	1705	796
Arrive On Green	0.06	0.38	0.00	0.11	0.42	0.42	0.29	0.29	0.29	0.17	0.50	0.50
Sat Flow, veh/h	1774	5085	1583	3442	3485	125	771	3539	1583	1774	3390	1583
Grp Volume(v), veh/h	100	414	0	319	705	736	32	69	139	42	277	383
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1770	1841	771	1770	1583	1774	1695	1583
Q Serve(g_s), s	6.2	6.0	0.0	10.0	42.1	42.3	4.1	1.6	4.5	2.2	4.9	17.4
Cycle Q Clear(g_c), s	6.2	6.0	0.0	10.0	42.1	42.3	21.9	1.6	4.5	2.2	4.9	17.4
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	113	1942	605	388	747	777	166	1030	639	295	1705	796
V/C Ratio(X)	0.89	0.21	0.00	0.82	0.94	0.95	0.19	0.07	0.22	0.14	0.16	0.48
Avail Cap(c_a), veh/h	113	1942	605	501	756	786	166	1030	639	295	1705	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	22.9	0.0	47.7	30.6	30.6	43.4	28.2	13.7	39.1	14.8	17.9
Incr Delay (d2), s/veh	51.0	0.1	0.0	8.4	20.3	20.2	2.6	0.1	0.8	0.2	0.2	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	2.8	0.0	5.2	24.8	25.8	1.0	0.8	2.1	1.1	2.3	8.0
LnGrp Delay(d),s/veh	102.1	22.9	0.0	56.1	50.9	50.8	46.0	28.3	14.5	39.4	15.0	20.0
LnGrp LOS	F	C		E	D	D	D	C	B	D	B	C
Approach Vol, veh/h		514			1760			240			702	
Approach Delay, s/veh		38.3			51.8			22.7			19.2	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	23.7	37.0	16.4	47.0		60.7	12.0	51.4
Change Period (Y+Rc), s	5.0	* 5	4.0	5.0		5.0	5.0	* 5
Max Green Setting (Gmax), s	6.0	* 32	16.0	38.0		42.0	7.0	* 47
Max Q Clear Time (g_c+I1), s	4.2	23.9	12.0	8.0		19.4	8.2	44.3
Green Ext Time (p_c), s	0.8	0.6	0.4	3.3		4.8	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	40.4
HCM 2010 LOS	D

Notes

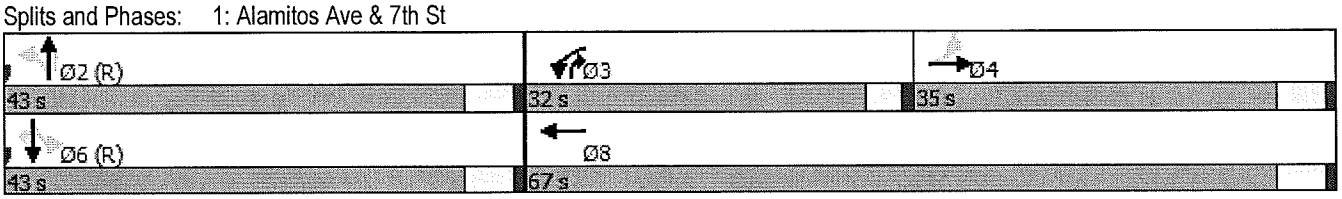
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	320	36	204	1226	58	98	319	366	56	340	109
Future Volume (vph)	22	320	36	204	1226	58	98	319	366	56	340	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	300		0	145		0	130		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.993				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3486	0	1770	3514	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.166			0.950			0.441			0.463		
Satd. Flow (perm)	309	3486	0	1770	3514	0	821	1863	1583	862	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			7				236			60
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		507			578			527			677	
Travel Time (s)		11.5			13.1			12.0			15.4	
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
Adj. Flow (vph)	22	320	36	204	1226	58	98	319	366	56	340	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	356	0	204	1284	0	98	319	366	56	340	109
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4						2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		3	8		2	2	3	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	33.0	33.0		10.0	26.0		30.0	30.0	10.0	30.0	30.0	30.0
Total Split (s)	35.0	35.0		32.0	67.0		43.0	43.0	32.0	43.0	43.0	43.0
Total Split (%)	31.8%	31.8%		29.1%	60.9%		39.1%	39.1%	29.1%	39.1%	39.1%	39.1%
Maximum Green (s)	30.0	30.0		28.0	62.0		38.0	38.0	28.0	38.0	38.0	38.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0			14.0		18.0	18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)	5	5			5		5	5		5	5	5
Act Effct Green (s)	31.0	31.0		18.1	53.1		46.9	46.9	70.0	46.9	46.9	46.9
Actuated g/C Ratio	0.28	0.28		0.16	0.48		0.43	0.43	0.64	0.43	0.43	0.43
v/c Ratio	0.26	0.36		0.70	0.76		0.28	0.40	0.33	0.15	0.43	0.15
Control Delay	38.9	31.5		55.8	25.8		21.4	21.2	4.0	23.7	25.9	11.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	31.5		55.8	25.8		21.4	21.2	4.0	23.7	25.9	11.7
LOS	D	C		E	C		C	C	A	C	C	B
Approach Delay		31.9			29.9			13.2			22.6	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	12	101		138	370		39	129	0	24	166	20
Queue Length 95th (ft)	37	143		201	389		84	226	59	59	279	62
Internal Link Dist (ft)		427			498			447			597	
Turn Bay Length (ft)	55			300			145			130		
Base Capacity (vph)	87	1002		450	1983		349	794	1214	367	794	709
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.36		0.45	0.65		0.28	0.40	0.30	0.15	0.43	0.15

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 19 (17%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 24.8 Intersection LOS: C
Intersection Capacity Utilization 80.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Alamitos Ave & 7th St



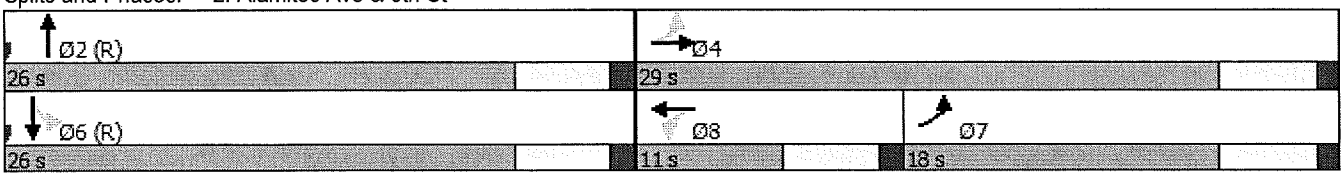
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	289	0	120	10	0	25	0	476	9	5	574	0
Future Volume (vph)	289	0	120	10	0	25	0	476	9	5	574	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	225		0
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.850			0.904			0.997				
Flt Protected	0.950				0.986					0.950		
Satd. Flow (prot)	1770	1583	0	0	1660	0	0	3529	0	1770	3539	0
Flt Permitted	0.734									0.476		
Satd. Flow (perm)	1367	1583	0	0	1684	0	0	3529	0	887	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		151			139			4				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		536			543			380			527	
Travel Time (s)		12.2			12.3			8.6			12.0	
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
Adj. Flow (vph)	289	0	120	10	0	25	0	476	9	5	574	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	289	120	0	0	35	0	0	485	0	5	574	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA			NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8						6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8			2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Minimum Split (s)	11.0	26.0		11.0	11.0			19.0		11.0	11.0	
Total Split (s)	18.0	29.0		11.0	11.0			26.0		26.0	26.0	
Total Split (%)	32.7%	52.7%		20.0%	20.0%			47.3%		47.3%	47.3%	
Maximum Green (s)	13.0	24.0		6.0	6.0			21.0		21.0	21.0	
Yellow Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0			1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0		5.0	5.0	
Lead/Lag	Lag			Lead	Lead							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			C-Max		C-Max	C-Max	
Walk Time (s)		7.0						7.0				
Flash Dont Walk (s)		14.0						7.0				
Pedestrian Calls (#/hr)		5						5				
Act Effct Green (s)	16.0	16.0			6.0			29.0		29.0	29.0	
Actuated g/C Ratio	0.29	0.29			0.11			0.53		0.53	0.53	
v/c Ratio	0.60	0.21			0.11			0.26		0.01	0.31	
Control Delay	21.5	2.6			0.7			6.4		4.4	4.7	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	21.5	2.6			0.7			6.4		4.4	4.7	
LOS	C	A			A			A		A	A	
Approach Delay		15.9			0.7			6.4			4.7	
Approach LOS		B			A			A			A	
Queue Length 50th (ft)	83	0			0			23		0	18	
Queue Length 95th (ft)	123	18			0			35		m1	85	
Internal Link Dist (ft)		456			463			300			447	
Turn Bay Length (ft)										225		
Base Capacity (vph)	536	775			307			1860		467	1863	
Starvation Cap Reductn	0	0			0			0		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.54	0.15			0.11			0.26		0.01	0.31	

Intersection Summary

Area Type: Other
Cycle Length: 55
Actuated Cycle Length: 55
Offset: 34 (62%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 8.2 Intersection LOS: A
Intersection Capacity Utilization 46.9% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Alamitos Ave & 6th St



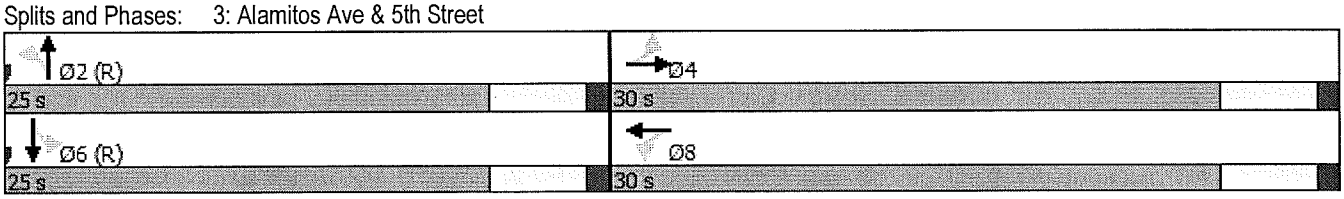
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	21	27	5	41	25	50	438	7	23	626	78
Future Volume (vph)	50	21	27	5	41	25	50	438	7	23	626	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.963			0.952			0.998			0.983	
Flt Protected		0.975			0.996		0.950			0.950		
Satd. Flow (prot)	0	1749	0	0	1766	0	1770	3532	0	1770	3479	0
Flt Permitted		0.802			0.976		0.383			0.494		
Satd. Flow (perm)	0	1439	0	0	1731	0	713	3532	0	920	3479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			25			3			27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			618			468			380	
Travel Time (s)		12.0			14.0			10.6			8.6	
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
Adj. Flow (vph)	50	21	27	5	41	25	50	438	7	23	626	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	0	0	71	0	50	445	0	23	704	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	11.0		30.0	30.0		19.0	19.0		19.0	19.0	
Total Split (s)	30.0	30.0		30.0	30.0		25.0	25.0		25.0	25.0	
Total Split (%)	54.5%	54.5%		54.5%	54.5%		45.5%	45.5%		45.5%	45.5%	
Maximum Green (s)	25.0	25.0		25.0	25.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				18.0	18.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)				5	5		5	5		5	5	
Act Effct Green (s)		11.0			11.0		37.2	37.2		37.2	37.2	
Actuated g/C Ratio		0.20			0.20		0.68	0.68		0.68	0.68	
v/c Ratio		0.32			0.19		0.10	0.19		0.04	0.30	
Control Delay		15.0			11.9		7.0	5.3		6.5	4.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		15.0			11.9		7.0	5.3		6.5	4.7	
LOS		B			B		A	A		A	A	
Approach Delay		15.0			11.9			5.5			4.8	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)		21			14		8	39		1	22	
Queue Length 95th (ft)		34			25		m31	91		14	100	
Internal Link Dist (ft)		450			538			388			300	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		668			800		482	2392		623	2364	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.15			0.09		0.10	0.19		0.04	0.30	

Intersection Summary

Area Type: Other
Cycle Length: 55
Actuated Cycle Length: 55
Offset: 30 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.32
Intersection Signal Delay: 6.1 Intersection LOS: A
Intersection Capacity Utilization 49.5% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Alamitos Ave & 5th Street



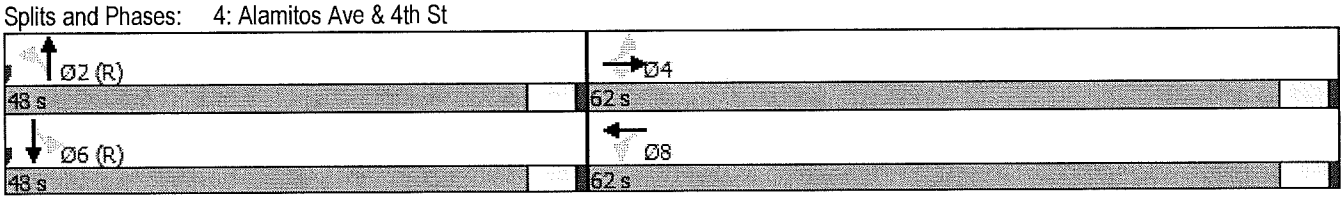
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	192	21	176	422	66	86	402	42	92	527	36
Future Volume (vph)	36	192	21	176	422	66	86	402	42	92	527	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	50		0	115		0	155		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.980			0.986			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1825	0	1770	3490	0	1770	3504	0
Flt Permitted	0.201			0.575			0.410			0.478		
Satd. Flow (perm)	374	1863	1583	1071	1825	0	764	3490	0	890	3504	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			21		11			12			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		549			626			397			468	
Travel Time (s)		12.5			14.2			9.0			10.6	
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
Adj. Flow (vph)	36	192	21	176	422	66	86	402	42	92	527	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	192	21	176	488	0	86	444	0	92	563	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		23.0	23.0		26.0	26.0	
Total Split (s)	62.0	62.0	62.0	62.0	62.0		48.0	48.0		48.0	48.0	
Total Split (%)	56.4%	56.4%	56.4%	56.4%	56.4%		43.6%	43.6%		43.6%	43.6%	
Maximum Green (s)	57.0	57.0	57.0	57.0	57.0		43.0	43.0		43.0	43.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0		11.0	11.0		14.0	14.0	
Pedestrian Calls (#/hr)	5	5	5	5	5		5	5		5	5	
Act Effct Green (s)	37.5	37.5	37.5	37.5	37.5		62.5	62.5		62.5	62.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34		0.57	0.57		0.57	0.57	
v/c Ratio	0.28	0.30	0.04	0.48	0.78		0.20	0.22		0.18	0.28	
Control Delay	29.4	26.2	7.6	31.6	39.8		16.1	13.6		14.0	13.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.4	26.2	7.6	31.6	39.8		16.1	13.6		14.0	13.3	
LOS	C	C	A	C	D		B	B		B	B	
Approach Delay		25.1			37.6			14.0			13.4	
Approach LOS		C			D			B			B	
Queue Length 50th (ft)	18	98	0	97	299		30	80		30	96	
Queue Length 95th (ft)	41	131	14	138	356		m58	m113		45	102	
Internal Link Dist (ft)		469			546			317			388	
Turn Bay Length (ft)	55			50			115			155		
Base Capacity (vph)	193	965	830	554	950		434	1988		505	1994	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	18	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.19	0.20	0.03	0.32	0.51		0.20	0.22		0.18	0.28	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 92 (84%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 22.6 Intersection LOS: C
Intersection Capacity Utilization 68.6% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Alamitos Ave & 4th St



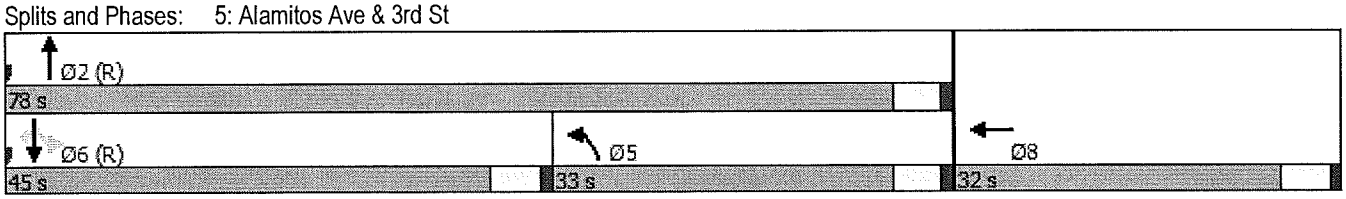
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	623	69	310	378	22	30	468	149
Future Volume (vph)	0	0	0	0	623	69	310	378	22	30	468	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	60		0	205		0	110		0
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt					0.985			0.992				0.850
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	0	0	3486	0	1770	3511	0	1770	1863	1583
Flt Permitted							0.950			0.516		
Satd. Flow (perm)	0	0	0	0	3486	0	1770	3511	0	961	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					10			11				130
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			470			551			397	
Travel Time (s)		12.0			10.7			12.5			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
Adj. Flow (vph)	0	0	0	0	623	69	310	378	22	30	468	149
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	692	0	310	400	0	30	468	149
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					2		1	2		1	2	1
Detector Template					Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)					100		20	100		20	100	20
Trailing Detector (ft)					0		0	0		0	0	0
Detector 1 Position(ft)					0		0	0		0	0	0
Detector 1 Size(ft)					6		20	6		20	6	20
Detector 1 Type					Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)					0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)					0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)					0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type					NA		Prot	NA		Perm	NA	Perm
Protected Phases					8		5	2			6	
Permitted Phases										6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase					8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)					6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)					30.0		11.0	23.0		19.0	19.0	19.0
Total Split (s)					32.0		33.0	78.0		45.0	45.0	45.0
Total Split (%)					29.1%		30.0%	70.9%		40.9%	40.9%	40.9%
Maximum Green (s)					27.0		28.0	73.0		40.0	40.0	40.0
Yellow Time (s)					4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)					1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)					0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)					5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lag			Lead	Lead	Lead
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)					3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode					None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)					7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)					18.0			11.0		7.0	7.0	7.0
Pedestrian Calls (#/hr)					5			5		5	5	5
Act Effct Green (s)					25.6		28.0	74.4		41.4	41.4	41.4
Actuated g/C Ratio					0.23		0.25	0.68		0.38	0.38	0.38
v/c Ratio					0.85		0.69	0.17		0.08	0.67	0.22
Control Delay					50.4		36.0	4.0		11.7	21.1	2.8
Queue Delay					0.0		0.0	0.0		0.0	1.2	0.0
Total Delay					50.4		36.0	4.0		11.7	22.2	2.8
LOS					D		D	A		B	C	A
Approach Delay					50.4			18.0			17.3	
Approach LOS					D			B			B	
Queue Length 50th (ft)					238		147	24		8	257	6
Queue Length 95th (ft)					310		266	51		16	139	14
Internal Link Dist (ft)		450			390			471			317	
Turn Bay Length (ft)							205			110		
Base Capacity (vph)					863		450	2379		362	701	677
Starvation Cap Reductn					0		0	0		0	85	0
Spillback Cap Reductn					0		0	0		0	0	0
Storage Cap Reductn					0		0	0		0	0	0
Reduced v/c Ratio					0.80		0.69	0.17		0.08	0.76	0.22

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 84 (76%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 28.7 Intersection LOS: C
Intersection Capacity Utilization 73.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 5: Alamitos Ave & 3rd St



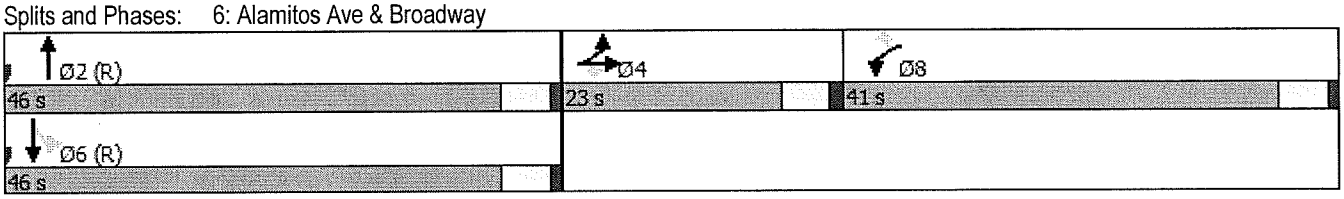
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	224	29	360	0	314	0	283	37	38	429	0
Future Volume (vph)	75	224	29	360	0	314	0	283	37	38	429	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		50	0		0	0		0	120		0
Storage Lanes	2		1	1		1	0		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850			0.850		0.983				
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	3433	3539	1583	1770	0	1583	0	3479	0	1770	1863	0
Flt Permitted	0.950			0.950						0.550		
Satd. Flow (perm)	3433	3539	1583	1770	0	1583	0	3479	0	1025	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69			314		15				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			630			215			551	
Travel Time (s)		13.9			14.3			4.9			12.5	
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
Adj. Flow (vph)	75	224	29	360	0	314	0	283	37	38	429	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	224	29	360	0	314	0	320	0	38	429	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1		1		2		1	2	
Detector Template	Left	Thru	Right	Left		Right		Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20		20		100		20	100	
Trailing Detector (ft)	0	0	0	0		0		0		0	0	
Detector 1 Position(ft)	0	0	0	0		0		0		0	0	
Detector 1 Size(ft)	20	6	20	20		20		6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm	Prot		Perm		NA		Perm	NA	
Protected Phases	4	4		8				2			6	
Permitted Phases			4			8				6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8		8		2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0		6.0		6.0		6.0	6.0	
Minimum Split (s)	23.0	23.0	23.0	11.0		11.0		26.0		30.0	30.0	
Total Split (s)	23.0	23.0	23.0	41.0		41.0		46.0		46.0	46.0	
Total Split (%)	20.9%	20.9%	20.9%	37.3%		37.3%		41.8%		41.8%	41.8%	
Maximum Green (s)	18.0	18.0	18.0	36.0		36.0		41.0		41.0	41.0	
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0		4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0		1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0		5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0		3.0		3.0	3.0	
Recall Mode	None	None	None	None		None		C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0					14.0		18.0	18.0	
Pedestrian Calls (#/hr)	5	5	5					5		5	5	
Act Effct Green (s)	12.7	12.7	12.7	27.8		27.8		54.4		54.4	54.4	
Actuated g/C Ratio	0.12	0.12	0.12	0.25		0.25		0.49		0.49	0.49	
v/c Ratio	0.19	0.55	0.12	0.80		0.49		0.19		0.07	0.47	
Control Delay	43.8	50.5	1.0	52.0		6.0		8.7		0.6	1.6	
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Total Delay	43.8	50.5	1.0	52.0		6.0		8.7		0.6	1.6	
LOS	D	D	A	D		A		A		A	A	
Approach Delay		44.6			30.6			8.7			1.5	
Approach LOS		D			C			A			A	
Queue Length 50th (ft)	25	80	0	239		0		33		0	1	
Queue Length 95th (ft)	44	114	2	315		61		64		m0	1	
Internal Link Dist (ft)		530			550			135			471	
Turn Bay Length (ft)	120		50							120		
Base Capacity (vph)	561	579	316	579		729		1728		507	921	
Starvation Cap Reductn	0	0	0	0		0		0		0	21	
Spillback Cap Reductn	0	0	0	0		0		0		0	0	
Storage Cap Reductn	0	0	0	0		0		0		0	0	
Reduced v/c Ratio	0.13	0.39	0.09	0.62		0.43		0.19		0.07	0.48	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 95 (86%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 21.6 Intersection LOS: C
Intersection Capacity Utilization 60.4% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Alamitos Ave & Broadway



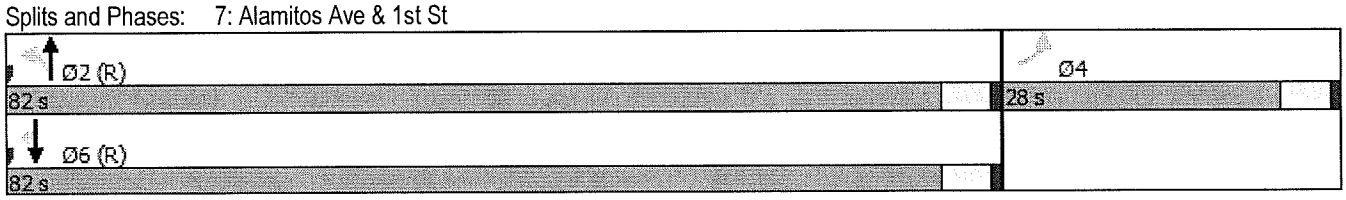
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	26	16	232	680	170
Future Volume (vph)	35	26	16	232	680	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	60			0
Storage Lanes	1	0	1			1
Taper Length (ft)	60		60			
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	0.942					0.850
Flt Protected	0.972		0.950			
Satd. Flow (prot)	1706	0	1770	3539	1863	1583
Flt Permitted	0.972		0.378			
Satd. Flow (perm)	1706	0	704	3539	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	26					170
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			219	212	
Travel Time (s)	12.5			5.0	4.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	26	16	232	680	170
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	16	232	680	170
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (ft)	20		20	100	100	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	26.0		11.0	11.0	19.0	19.0
Total Split (s)	28.0		82.0	82.0	82.0	82.0
Total Split (%)	25.5%		74.5%	74.5%	74.5%	74.5%
Maximum Green (s)	23.0		77.0	77.0	77.0	77.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	14.0				7.0	7.0
Pedestrian Calls (#/hr)	5				5	5
Act Effct Green (s)	10.0		93.2	93.2	93.2	93.2
Actuated g/C Ratio	0.09		0.85	0.85	0.85	0.85
v/c Ratio	0.34		0.03	0.08	0.43	0.12
Control Delay	33.2		0.9	0.7	4.0	0.9
Queue Delay	0.0		0.0	0.0	0.4	0.0
Total Delay	33.2		0.9	0.7	4.4	0.9
LOS	C		A	A	A	A
Approach Delay	33.2			0.7	3.7	
Approach LOS	C			A	A	
Queue Length 50th (ft)	24		0	1	148	4
Queue Length 95th (ft)	58		m2	m11	278	21
Internal Link Dist (ft)	470			139	132	
Turn Bay Length (ft)			60			
Base Capacity (vph)	377		596	2997	1578	1366
Starvation Cap Reductn	0		0	0	399	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.16		0.03	0.08	0.58	0.12

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 82 (75%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 4.6 Intersection LOS: A
Intersection Capacity Utilization 49.1% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Alamitos Ave & 1st St



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	7	0	213	688	7
Future Volume (vph)	0	7	0	213	688	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.95	0.95
Frt		0.865			0.998	
Flt Protected						
Satd. Flow (prot)	0	1611	0	5085	3532	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	5085	3532	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	472			224	231	
Travel Time (s)	10.7			5.1	5.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	7	0	213	688	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	7	0	213	695	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 29.2% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	414	38	319	1391	50	32	69	139	42	277	383
Future Volume (vph)	100	414	38	319	1391	50	32	69	139	42	277	383
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		50	230		0	220		0	60		0
Storage Lanes	1		1	2		0	1		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.91	0.91
Frt			0.850		0.995				0.850		0.913	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	3433	3522	0	1770	3539	1583	1770	4643	0
Flt Permitted	0.950			0.950			0.327			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	3522	0	609	3539	1583	1770	4643	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		4				139		145	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		542			607			703			224	
Travel Time (s)		12.3			13.8			16.0			5.1	
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
Adj. Flow (vph)	100	414	38	319	1391	50	32	69	139	42	277	383
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	414	38	319	1441	0	32	69	139	42	660	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases			4				2		2			

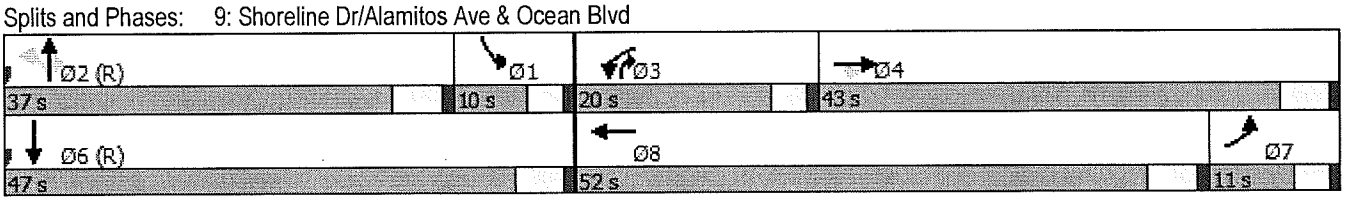
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	36.0	36.0	10.0	36.0		36.0	36.0	10.0	10.0	36.0	
Total Split (s)	11.0	43.0	43.0	20.0	52.0		37.0	37.0	20.0	10.0	47.0	
Total Split (%)	10.0%	39.1%	39.1%	18.2%	47.3%		33.6%	33.6%	18.2%	9.1%	42.7%	
Maximum Green (s)	7.0	38.0	38.0	16.0	47.0		32.0	32.0	16.0	6.0	42.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0		5.0	5.0	4.0	4.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	None	None	C-Max	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		24.0	24.0		24.0		24.0	24.0			24.0	
Pedestrian Calls (#/hr)		5	5		5		5	5			5	
Act Effct Green (s)	7.0	39.5	39.5	14.5	47.0		36.0	36.0	53.1	6.0	42.0	
Actuated g/C Ratio	0.06	0.36	0.36	0.13	0.43		0.33	0.33	0.48	0.05	0.38	
v/c Ratio	0.89	0.23	0.06	0.71	0.96		0.16	0.06	0.17	0.44	0.35	
Control Delay	112.2	25.3	0.2	54.6	45.9		31.4	27.5	2.4	50.1	9.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	112.2	25.3	0.2	54.6	45.9		31.4	27.5	2.4	50.1	9.6	
LOS	F	C	A	D	D		C	C	A	D	A	
Approach Delay		39.3			47.5			13.5			12.0	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	71	75	0	111	506		17	18	0	29	72	
Queue Length 95th (ft)	#175	102	0	158	#671		44	36	26	65	61	
Internal Link Dist (ft)		462			527			623			144	
Turn Bay Length (ft)	225		50	230			220			60		
Base Capacity (vph)	112	1826	638	499	1507		199	1158	856	96	1862	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.89	0.23	0.06	0.64	0.96		0.16	0.06	0.16	0.44	0.35	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 108 (98%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 35.9 Intersection LOS: D
Intersection Capacity Utilization 80.4% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	715	39	130	702	59	97	416	755	58	329	63
Future Volume (veh/h)	37	715	39	130	702	59	97	416	755	58	329	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	37	715	39	130	702	59	97	416	755	58	329	63
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	879	48	206	1400	118	432	887	938	265	887	754
Arrive On Green	0.26	0.26	0.26	0.12	0.42	0.42	0.80	0.80	0.80	0.48	0.48	0.48
Sat Flow, veh/h	702	3413	186	1774	3306	278	988	1863	1583	477	1863	1583
Grp Volume(v), veh/h	37	371	383	130	376	385	97	416	755	58	329	63
Grp Sat Flow(s),veh/h/ln	702	1770	1830	1774	1770	1814	988	1863	1583	477	1863	1583
Q Serve(g_s), s	5.0	19.7	19.7	7.0	15.5	15.6	4.6	7.3	0.0	8.3	11.2	2.2
Cycle Q Clear(g_c), s	20.5	19.7	19.7	7.0	15.5	15.6	15.8	7.3	0.0	15.5	11.2	2.2
Prop In Lane	1.00		0.10	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	456	471	206	750	768	432	887	938	265	887	754
V/C Ratio(X)	0.26	0.81	0.81	0.63	0.50	0.50	0.22	0.47	0.80	0.22	0.37	0.08
Avail Cap(c_a), veh/h	180	549	567	284	903	925	432	887	938	265	887	754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	34.9	34.9	42.2	21.1	21.1	9.6	6.1	4.0	20.2	16.6	14.3
Incr Delay (d2), s/veh	0.9	7.7	7.5	3.2	0.5	0.5	1.0	1.5	6.2	1.9	1.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	10.5	10.9	3.6	7.6	7.9	1.4	4.0	5.6	1.2	6.1	1.0
LnGrp Delay(d),s/veh	43.5	42.6	42.4	45.3	21.6	21.6	10.6	7.6	10.2	22.1	17.8	14.5
LnGrp LOS	D	D	D	D	C	C	B	A	B	C	B	B
Approach Vol, veh/h		791			891			1268			450	
Approach Delay, s/veh		42.5			25.1			9.3			17.9	
Approach LOS		D			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		52.6	16.6	30.8		52.6		47.4
Change Period (Y+Rc), s		5.0	5.0	* 5		5.0		5.0
Max Green Setting (Gmax), s		39.0	16.0	* 31		39.0		51.0
Max Q Clear Time (g_c+I1), s		17.8	9.0	22.5		17.5		17.6
Green Ext Time (p_c), s		10.1	2.9	3.2		10.2		5.9

Intersection Summary	
HCM 2010 Ctrl Delay	22.3
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	418	0	267	9	0	13	0	835	9	8	489	0
Future Volume (veh/h)	418	0	267	9	0	13	0	835	9	8	489	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	418	0	267	9	0	13	0	835	9	8	489	0
Adj No. of Lanes	1	1	0	0	1	0	0	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	0
Cap, veh/h	487	0	506	51	18	25	0	2082	22	449	2054	0
Arrive On Green	0.19	0.00	0.32	0.08	0.00	0.08	0.00	1.00	1.00	0.77	0.77	0.00
Sat Flow, veh/h	1774	0	1583	0	219	316	0	3680	39	650	3632	0
Grp Volume(v), veh/h	418	0	267	22	0	0	0	412	432	8	489	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583	535	0	0	0	1770	1856	650	1770	0
Q Serve(g_s), s	13.9	0.0	13.8	0.0	0.0	0.0	0.0	0.0	0.0	0.3	3.9	0.0
Cycle Q Clear(g_c), s	13.9	0.0	13.8	8.0	0.0	0.0	0.0	0.0	0.0	0.3	3.9	0.0
Prop In Lane	1.00		1.00	0.41		0.59	0.00		0.02	1.00		0.00
Lane Grp Cap(c), veh/h	487	0	506	94	0	0	0	1027	1077	449	2054	0
V/C Ratio(X)	0.86	0.00	0.53	0.24	0.00	0.00	0.00	0.40	0.40	0.02	0.24	0.00
Avail Cap(c_a), veh/h	789	0	776	94	0	0	0	1027	1077	449	2054	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.97	0.97	0.91	0.91	0.00
Uniform Delay (d), s/veh	35.4	0.0	27.8	43.0	0.0	0.0	0.0	0.0	0.0	4.8	5.2	0.0
Incr Delay (d2), s/veh	5.5	0.0	0.9	1.3	0.0	0.0	0.0	1.1	1.1	0.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	0.0	6.1	0.6	0.0	0.0	0.0	0.3	0.3	0.1	1.9	0.0
LnGrp Delay(d),s/veh	40.9	0.0	28.7	44.3	0.0	0.0	0.0	1.1	1.1	4.9	5.5	0.0
LnGrp LOS	D		C	D				A	A	A	A	
Approach Vol, veh/h		685			22			844			497	
Approach Delay, s/veh		36.1			44.3			1.1			5.5	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		63.0		37.0		63.0	24.0	13.0
Change Period (Y+Rc), s		5.0		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		41.0		49.0		41.0	36.0	8.0
Max Q Clear Time (g_c+I1), s		2.0		15.8		5.9	15.9	10.0
Green Ext Time (p_c), s		11.6		3.3		11.2	3.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	30	40	3	12	12	17	795	15	38	673	30
Future Volume (veh/h)	38	30	40	3	12	12	17	795	15	38	673	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	38	30	40	3	12	12	17	795	15	38	673	30
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	51	53	47	80	69	672	2878	54	615	2795	125
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	448	561	593	74	883	765	741	3553	67	671	3451	154
Grp Volume(v), veh/h	108	0	0	27	0	0	17	396	414	38	345	358
Grp Sat Flow(s),veh/h/ln	1602	0	0	1722	0	0	741	1770	1851	671	1770	1836
Q Serve(g_s), s	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.5	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.35		0.37	0.11		0.44	1.00		0.04	1.00		0.08
Lane Grp Cap(c), veh/h	193	0	0	195	0	0	672	1433	1499	615	1433	1487
V/C Ratio(X)	0.56	0.00	0.00	0.14	0.00	0.00	0.03	0.28	0.28	0.06	0.24	0.24
Avail Cap(c_a), veh/h	554	0	0	576	0	0	672	1433	1499	615	1433	1487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.93	0.93	0.93	0.98	0.98	0.98
Uniform Delay (d), s/veh	44.3	0.0	0.0	42.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.3	0.0	0.0	0.1	0.4	0.4	0.2	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.0	0.7	0.0	0.0	0.0	0.2	0.2	0.0	0.2	0.2
LnGrp Delay(d),s/veh	46.8	0.0	0.0	42.4	0.0	0.0	0.1	0.4	0.4	0.2	0.4	0.4
LnGrp LOS	D			D			A	A	A	A	A	A
Approach Vol, veh/h		108			27			827			741	
Approach Delay, s/veh		46.8			42.4			0.4			0.4	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		86.0		14.0		86.0		14.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		58.0		32.0		58.0		32.0
Max Q Clear Time (g_c+I1), s		2.0		8.5		2.0		3.4
Green Ext Time (p_c), s		15.0		0.7		15.0		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	4.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	367	42	55	204	47	39	747	145	159	513	42
Future Volume (veh/h)	44	367	42	55	204	47	39	747	145	159	513	42
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	44	367	42	55	204	47	39	747	145	159	513	42
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	511	434	166	402	93	604	1851	359	461	2074	169
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1124	1863	1583	973	1466	338	850	2957	574	621	3314	271
Grp Volume(v), veh/h	44	367	42	55	0	251	39	447	445	159	273	282
Grp Sat Flow(s),veh/h/ln	1124	1863	1583	973	0	1803	850	1770	1761	621	1770	1815
Q Serve(g_s), s	3.4	17.8	2.0	5.4	0.0	11.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	15.2	17.8	2.0	23.2	0.0	11.7	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.33	1.00		0.15
Lane Grp Cap(c), veh/h	248	511	434	166	0	494	604	1107	1102	461	1107	1136
V/C Ratio(X)	0.18	0.72	0.10	0.33	0.00	0.51	0.06	0.40	0.40	0.35	0.25	0.25
Avail Cap(c_a), veh/h	289	577	491	200	0	559	604	1107	1102	461	1107	1136
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.91	0.91	0.91	0.98	0.98	0.98
Uniform Delay (d), s/veh	37.0	32.8	27.1	43.3	0.0	30.6	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	3.7	0.1	1.2	0.0	0.8	0.2	1.0	1.0	2.0	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	9.7	0.9	1.5	0.0	6.0	0.0	0.3	0.3	0.3	0.2	0.2
LnGrp Delay(d),s/veh	37.3	36.5	27.2	44.5	0.0	31.4	0.2	1.0	1.0	2.0	0.5	0.5
LnGrp LOS	D	D	C	D		C	A	A	A	A	A	A
Approach Vol, veh/h		453			306			931			714	
Approach Delay, s/veh		35.7			33.8			1.0			0.8	
Approach LOS		D			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		67.6		32.4		67.6		32.4
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		59.0		31.0		59.0		31.0
Max Q Clear Time (g_c+I1), s		2.0		19.8		2.0		25.2
Green Ext Time (p_c), s		17.4		3.4		17.4		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	205	51	117	921	190	92	404	71
Future Volume (veh/h)	0	0	0	0	205	51	117	921	190	92	404	71
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				0	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h				0	205	51	117	921	190	92	404	71
Adj No. of Lanes				0	2	0	1	2	0	1	1	1
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	2	0	2	2	2	2	2	2
Cap, veh/h				0	0	0	710	2777	573	325	931	792
Arrive On Green				0.00	0.00	0.00	0.80	1.00	1.00	0.50	0.50	0.50
Sat Flow, veh/h					0		1774	2923	603	505	1863	1583
Grp Volume(v), veh/h					0.0		117	557	554	92	404	71
Grp Sat Flow(s),veh/h/ln							1774	1770	1756	505	1863	1583
Q Serve(g_s), s							1.5	0.0	0.0	11.1	13.8	2.3
Cycle Q Clear(g_c), s							1.5	0.0	0.0	11.1	13.8	2.3
Prop In Lane							1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h							710	1681	1669	325	931	792
V/C Ratio(X)							0.16	0.33	0.33	0.28	0.43	0.09
Avail Cap(c_a), veh/h							710	1681	1669	325	931	792
HCM Platoon Ratio							2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)							0.83	0.83	0.83	0.98	0.98	0.98
Uniform Delay (d), s/veh							6.2	0.0	0.0	15.3	16.0	13.1
Incr Delay (d2), s/veh							0.1	0.4	0.4	2.1	1.4	0.2
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							0.7	0.2	0.2	1.8	7.4	1.1
LnGrp Delay(d),s/veh							6.2	0.4	0.4	17.4	17.4	13.3
LnGrp LOS							A	A	A	B	B	B
Approach Vol, veh/h								1228			567	
Approach Delay, s/veh								1.0			16.9	
Approach LOS								A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		
Phs Duration (G+Y+Rc), s		100.0			45.0	55.0		
Change Period (Y+Rc), s		5.0			5.0	5.0		
Max Green Setting (Gmax), s		65.0			10.0	50.0		
Max Q Clear Time (g_c+I1), s		2.0			3.5	15.8		
Green Ext Time (p_c), s		10.7			3.9	4.4		

Intersection Summary	
HCM 2010 Ctrl Delay	6.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	365	849	50	126	0	156	0	737	223	87	284	0
Future Volume (veh/h)	365	849	50	126	0	156	0	737	223	87	284	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	0	1863	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	365	849	50	126	0	156	0	737	223	87	284	0
Adj No. of Lanes	2	2	1	1	0	1	0	2	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	961	989	442	0	0	0	0	1663	503	350	1156	0
Arrive On Green	0.28	0.28	0.28	0.00	0.00	0.00	0.00	0.62	0.62	1.00	1.00	0.00
Sat Flow, veh/h	3442	3539	1583		0		0	2772	811	583	1863	0
Grp Volume(v), veh/h	365	849	50		0.0		0	487	473	87	284	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583				0	1770	1720	583	1863	0
Q Serve(g_s), s	8.5	22.7	2.4				0.0	14.4	14.4	4.6	0.0	0.0
Cycle Q Clear(g_c), s	8.5	22.7	2.4				0.0	14.4	14.4	19.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.47	1.00		0.00
Lane Grp Cap(c), veh/h	961	989	442				0	1098	1067	350	1156	0
V/C Ratio(X)	0.38	0.86	0.11				0.00	0.44	0.44	0.25	0.25	0.00
Avail Cap(c_a), veh/h	1032	1062	475				0	1098	1067	350	1156	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.94	0.94	0.00
Uniform Delay (d), s/veh	29.0	34.2	26.8				0.0	9.9	9.9	2.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	6.9	0.1				0.0	1.3	1.3	1.6	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	12.0	1.0				0.0	7.4	7.2	0.9	0.2	0.0
LnGrp Delay(d),s/veh	29.3	41.0	26.9				0.0	11.2	11.3	3.8	0.5	0.0
LnGrp LOS	C	D	C					B	B	A	A	
Approach Vol, veh/h		1264						960			371	
Approach Delay, s/veh		37.1						11.2			1.3	
Approach LOS		D						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		67.1		32.9		67.1		
Change Period (Y+Rc), s		5.0		5.0		5.0		
Max Green Setting (Gmax), s		44.0		30.0		44.0		
Max Q Clear Time (g_c+I1), s		16.4		24.7		21.0		
Green Ext Time (p_c), s		10.7		3.2		9.9		

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	123	46	19	836	359	90
Future Volume (vph)	123	46	19	836	359	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	0.95	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1731		1770	3539	1863	1583
Flt Permitted	0.96		0.54	1.00	1.00	1.00
Satd. Flow (perm)	1731		1004	3539	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	123	46	19	836	359	90
RTOR Reduction (vph)	17	0	0	0	0	22
Lane Group Flow (vph)	152	0	19	836	359	68
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	14.3		75.7	75.7	75.7	75.7
Effective Green, g (s)	14.3		75.7	75.7	75.7	75.7
Actuated g/C Ratio	0.14		0.76	0.76	0.76	0.76
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	247		760	2679	1410	1198
v/s Ratio Prot				c0.24	0.19	
v/s Ratio Perm	c0.09		0.02			0.04
v/c Ratio	0.61		0.03	0.31	0.25	0.06
Uniform Delay, d1	40.3		3.0	3.9	3.7	3.1
Progression Factor	1.00		0.38	0.36	0.13	0.05
Incremental Delay, d2	4.5		0.0	0.2	0.4	0.1
Delay (s)	44.8		1.2	1.6	0.9	0.2
Level of Service	D		A	A	A	A
Approach Delay (s)	44.8			1.6	0.8	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱		↑↑↑	↑↑↳	
Traffic Vol, veh/h	0	15	0	816	378	10
Future Vol, veh/h	0	15	0	816	378	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	0	816	378	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	194	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	815	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	815	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	815	-	-
HCM Lane V/C Ratio	-	0.018	-	-
HCM Control Delay (s)	-	9.5	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	1407	51	178	692	87	42	453	422	65	122	206
Future Volume (veh/h)	300	1407	51	178	692	87	42	453	422	65	122	206
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	300	1407	0	178	692	87	42	453	422	65	122	206
Adj No. of Lanes	1	3	1	2	2	0	1	2	1	1	3	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	1716	534	245	819	103	311	1097	604	162	1530	715
Arrive On Green	0.14	0.34	0.00	0.07	0.26	0.26	0.31	0.31	0.31	0.09	0.45	0.45
Sat Flow, veh/h	1774	5085	1583	3442	3165	398	1048	3539	1583	1774	3390	1583
Grp Volume(v), veh/h	300	1407	0	178	387	392	42	453	422	65	122	206
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1770	1793	1048	1770	1583	1774	1695	1583
Q Serve(g_s), s	14.0	25.3	0.0	5.1	20.7	20.8	3.2	10.1	14.1	3.5	2.0	8.2
Cycle Q Clear(g_c), s	14.0	25.3	0.0	5.1	20.7	20.8	11.4	10.1	14.1	3.5	2.0	8.2
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	1716	534	245	458	464	311	1097	604	162	1530	715
V/C Ratio(X)	1.21	0.82	0.00	0.73	0.84	0.85	0.14	0.41	0.70	0.40	0.08	0.29
Avail Cap(c_a), veh/h	248	1831	570	310	549	556	311	1097	604	162	1530	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	30.3	0.0	45.5	35.2	35.2	31.0	27.3	11.6	42.9	15.6	17.3
Incr Delay (d2), s/veh	125.1	2.9	0.0	6.2	10.0	10.0	0.9	1.1	6.6	1.6	0.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.5	12.3	0.0	2.6	11.4	11.5	1.0	5.1	7.2	1.8	1.0	3.7
LnGrp Delay(d),s/veh	168.1	33.3	0.0	51.7	45.2	45.2	32.0	28.4	18.2	44.5	15.7	18.3
LnGrp LOS	F	C		D	D	D	C	C	B	D	B	B
Approach Vol, veh/h		1707			957			917			393	
Approach Delay, s/veh		57.0			46.4			23.9			21.8	
Approach LOS		E			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	14.1	36.0	11.1	38.8		50.1	19.0	30.9
Change Period (Y+Rc), s	5.0	* 5	4.0	5.0		5.0	5.0	* 5
Max Green Setting (Gmax), s	6.0	* 31	9.0	36.0		41.0	14.0	* 31
Max Q Clear Time (g_c+I1), s	5.5	16.1	7.1	27.3		10.2	16.0	22.8
Green Ext Time (p_c), s	0.1	4.3	0.1	6.2		2.4	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	43.3
HCM 2010 LOS	D

Notes

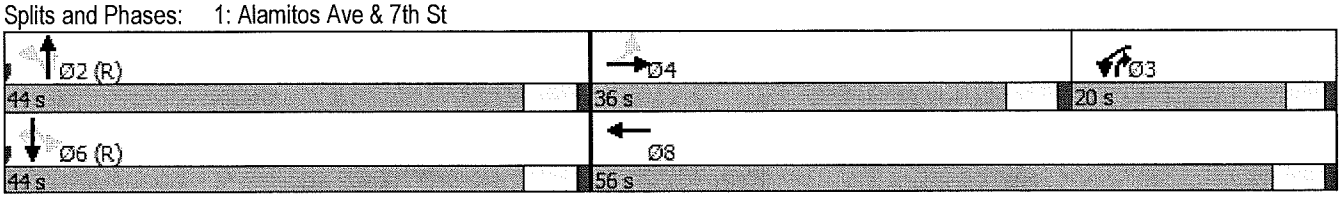
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	715	39	130	702	59	97	416	755	58	329	63
Future Volume (vph)	37	715	39	130	702	59	97	416	755	58	329	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	300		0	145		0	130		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.988				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3511	0	1770	3497	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.240			0.950			0.444			0.351		
Satd. Flow (perm)	447	3511	0	1770	3497	0	827	1863	1583	654	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			13				49			76
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		507			578			527			677	
Travel Time (s)		11.5			13.1			12.0			15.4	
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
Adj. Flow (vph)	37	715	39	130	702	59	97	416	755	58	329	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	754	0	130	761	0	97	416	755	58	329	63
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4						2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		3	8		2	2	3	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	33.0	33.0		10.0	26.0		30.0	30.0	10.0	30.0	30.0	30.0
Total Split (s)	36.0	36.0		20.0	56.0		44.0	44.0	20.0	44.0	44.0	44.0
Total Split (%)	36.0%	36.0%		20.0%	56.0%		44.0%	44.0%	20.0%	44.0%	44.0%	44.0%
Maximum Green (s)	31.0	31.0		16.0	51.0		39.0	39.0	16.0	39.0	39.0	39.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead		Lag					Lag			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0			14.0		18.0	18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)	5	5			5		5	5		5	5	5
Act Effct Green (s)	27.6	27.6		18.3	49.9		40.1	40.1	63.4	40.1	40.1	40.1
Actuated g/C Ratio	0.28	0.28		0.18	0.50		0.40	0.40	0.63	0.40	0.40	0.40
v/c Ratio	0.30	0.78		0.40	0.43		0.29	0.56	0.74	0.22	0.44	0.09
Control Delay	34.5	38.8		41.1	16.5		19.9	21.8	14.1	23.4	24.6	3.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.5	38.8		41.1	16.5		19.9	21.8	14.1	23.4	24.6	3.9
LOS	C	D		D	B		B	C	B	C	C	A
Approach Delay		38.6			20.1			17.1			21.5	
Approach LOS		D			C			B			C	
Queue Length 50th (ft)	18	227		74	150		32	155	216	24	153	0
Queue Length 95th (ft)	47	286		135	196		m74	246	0	56	232	20
Internal Link Dist (ft)		427			498			447			597	
Turn Bay Length (ft)	55			300			145			130		
Base Capacity (vph)	138	1092		324	1789		331	747	1021	262	747	680
Starvation Cap Reductn	0	0		0	0		0	0	2	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.69		0.40	0.43		0.29	0.56	0.74	0.22	0.44	0.09

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 6 (6%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 23.5 Intersection LOS: C
Intersection Capacity Utilization 84.4% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Alamitos Ave & 7th St



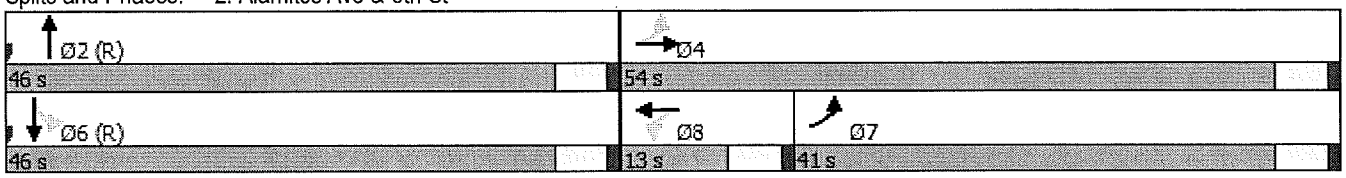
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	418	0	267	9	0	13	0	835	9	8	489	0
Future Volume (vph)	418	0	267	9	0	13	0	835	9	8	489	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	225		0
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.850			0.920			0.998				
Flt Protected	0.950				0.980					0.950		
Satd. Flow (prot)	1770	1583	0	0	1679	0	0	3532	0	1770	3539	0
Flt Permitted	0.743									0.277		
Satd. Flow (perm)	1384	1583	0	0	1714	0	0	3532	0	516	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		230			76			1				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		536			543			380			527	
Travel Time (s)		12.2			12.3			8.6			12.0	
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
Adj. Flow (vph)	418	0	267	9	0	13	0	835	9	8	489	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	418	267	0	0	22	0	0	844	0	8	489	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100			100		20	100	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Detector 1 Position(ft)	0	0		0	0			0		0	0	
Detector 1 Size(ft)	20	6		20	6			6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA			NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8						6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8			2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0			6.0		6.0	6.0	
Minimum Split (s)	11.0	26.0		11.0	11.0			19.0		11.0	11.0	
Total Split (s)	41.0	54.0		13.0	13.0			46.0		46.0	46.0	
Total Split (%)	41.0%	54.0%		13.0%	13.0%			46.0%		46.0%	46.0%	
Maximum Green (s)	36.0	49.0		8.0	8.0			41.0		41.0	41.0	
Yellow Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0			1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0		5.0	5.0	
Lead/Lag	Lag			Lead	Lead							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Recall Mode	None	None		None	None			C-Max		C-Max	C-Max	
Walk Time (s)		7.0						7.0				
Flash Dont Walk (s)		14.0						7.0				
Pedestrian Calls (#/hr)		5						5				
Act Effct Green (s)	31.4	31.4			6.0			58.6		58.6	58.6	
Actuated g/C Ratio	0.31	0.31			0.06			0.59		0.59	0.59	
v/c Ratio	0.78	0.41			0.13			0.41		0.03	0.24	
Control Delay	41.1	6.3			1.5			8.9		4.0	3.4	
Queue Delay	0.0	0.0			0.0			0.2		0.0	0.0	
Total Delay	41.1	6.3			1.5			9.1		4.0	3.4	
LOS	D	A			A			A		A	A	
Approach Delay		27.5			1.5			9.1			3.4	
Approach LOS		C			A			A			A	
Queue Length 50th (ft)	241	17			0			92		1	13	
Queue Length 95th (ft)	294	62			0			135		m3	71	
Internal Link Dist (ft)		456			463			300			447	
Turn Bay Length (ft)										225		
Base Capacity (vph)	698	892			207			2069		302	2073	
Starvation Cap Reductn	0	0			0			440		0	0	
Spillback Cap Reductn	0	0			0			0		0	0	
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.60	0.30			0.11			0.52		0.03	0.24	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 16 (16%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 13.8 Intersection LOS: B
Intersection Capacity Utilization 61.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Alamitos Ave & 6th St



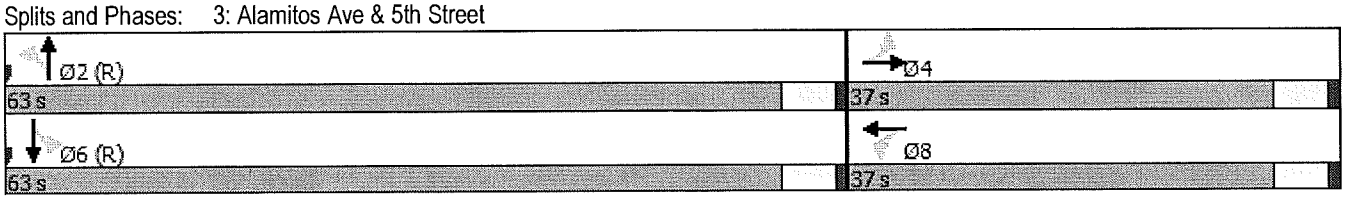
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	30	40	3	12	12	17	795	15	38	673	30
Future Volume (vph)	38	30	40	3	12	12	17	795	15	38	673	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.950			0.940			0.997			0.994	
Flt Protected		0.983			0.994		0.950			0.950		
Satd. Flow (prot)	0	1740	0	0	1740	0	1770	3529	0	1770	3518	0
Flt Permitted		0.873			0.968		0.380			0.337		
Satd. Flow (perm)	0	1545	0	0	1695	0	708	3529	0	628	3518	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			12			3			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			618			468			380	
Travel Time (s)		12.0			14.0			10.6			8.6	
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
Adj. Flow (vph)	38	30	40	3	12	12	17	795	15	38	673	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	108	0	0	27	0	17	810	0	38	703	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	11.0		30.0	30.0		19.0	19.0		19.0	19.0	
Total Split (s)	37.0	37.0		37.0	37.0		63.0	63.0		63.0	63.0	
Total Split (%)	37.0%	37.0%		37.0%	37.0%		63.0%	63.0%		63.0%	63.0%	
Maximum Green (s)	32.0	32.0		32.0	32.0		58.0	58.0		58.0	58.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				18.0	18.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)				5	5		5	5		5	5	
Act Effct Green (s)		12.4			12.4		77.6	77.6		77.6	77.6	
Actuated g/C Ratio		0.12			0.12		0.78	0.78		0.78	0.78	
v/c Ratio		0.50			0.12		0.03	0.30		0.08	0.26	
Control Delay		35.0			24.2		2.2	1.9		3.2	2.5	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.1	
Total Delay		35.0			24.2		2.2	2.0		3.2	2.6	
LOS		C			C		A	A		A	A	
Approach Delay		35.0			24.2			2.0			2.6	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		47			9		1	30		3	26	
Queue Length 95th (ft)		86			29		m4	48		13	66	
Internal Link Dist (ft)		450			538			388			300	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		515			550		549	2739		487	2732	
Starvation Cap Reductn		0			0		0	554		0	882	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.21			0.05		0.03	0.37		0.08	0.38	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 3 (3%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 4.7 Intersection LOS: A
Intersection Capacity Utilization 52.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Alamitos Ave & 5th Street



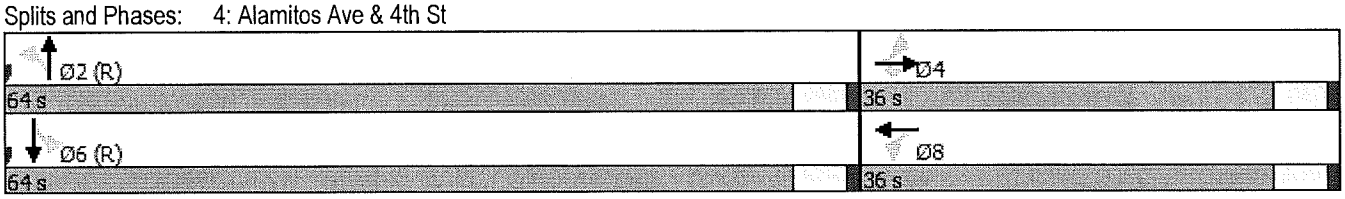
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	367	42	55	204	47	39	747	145	159	513	42
Future Volume (vph)	44	367	42	55	204	47	39	747	145	159	513	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	50		0	115		0	155		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.972			0.976			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1811	0	1770	3454	0	1770	3500	0
Flt Permitted	0.428			0.229			0.432			0.284		
Satd. Flow (perm)	797	1863	1583	427	1811	0	805	3454	0	529	3500	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			42		12			39			15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		549			626			397			468	
Travel Time (s)		12.5			14.2			9.0			10.6	
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
Adj. Flow (vph)	44	367	42	55	204	47	39	747	145	159	513	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	367	42	55	251	0	39	892	0	159	555	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		23.0	23.0		26.0	26.0	
Total Split (s)	36.0	36.0	36.0	36.0	36.0		64.0	64.0		64.0	64.0	
Total Split (%)	36.0%	36.0%	36.0%	36.0%	36.0%		64.0%	64.0%		64.0%	64.0%	
Maximum Green (s)	31.0	31.0	31.0	31.0	31.0		59.0	59.0		59.0	59.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0		11.0	11.0		14.0	14.0	
Pedestrian Calls (#/hr)	5	5	5	5	5		5	5		5	5	
Act Effct Green (s)	24.7	24.7	24.7	24.7	24.7		65.3	65.3		65.3	65.3	
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25		0.65	0.65		0.65	0.65	
v/c Ratio	0.22	0.80	0.10	0.52	0.55		0.07	0.39		0.46	0.24	
Control Delay	30.8	48.0	8.5	49.4	35.0		8.6	8.5		10.2	4.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.1		0.0	0.0	
Total Delay	30.8	48.0	8.5	49.4	35.0		8.6	8.6		10.2	4.5	
LOS	C	D	A	D	C		A	A		B	A	
Approach Delay		42.7			37.6			8.6			5.8	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)	22	219	0	30	132		9	120		19	32	
Queue Length 95th (ft)	49	299	24	69	194		23	137		36	49	
Internal Link Dist (ft)		469			546			317			388	
Turn Bay Length (ft)	55			50			115			155		
Base Capacity (vph)	247	577	519	132	569		525	2267		345	2289	
Starvation Cap Reductn	0	0	0	0	0		0	436		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.64	0.08	0.42	0.44		0.07	0.49		0.46	0.24	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 95 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 17.9 — Intersection LOS: B
Intersection Capacity Utilization 75.1% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 4: Alamitos Ave & 4th St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	205	51	117	921	190	92	404	71
Future Volume (vph)	0	0	0	0	205	51	117	921	190	92	404	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	60		0	205		0	110		0
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt					0.970			0.974				0.850
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	0	0	3433	0	1770	3447	0	1770	1863	1583
Flt Permitted							0.950			0.229		
Satd. Flow (perm)	0	0	0	0	3433	0	1770	3447	0	427	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					29			49				76
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			470			551			397	
Travel Time (s)		12.0			10.7			12.5			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
Adj. Flow (vph)	0	0	0	0	205	51	117	921	190	92	404	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	256	0	117	1111	0	92	404	71
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					2		1	2		1	2	1
Detector Template					Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)					100		20	100		20	100	20
Trailing Detector (ft)					0		0	0		0	0	0
Detector 1 Position(ft)					0		0	0		0	0	0
Detector 1 Size(ft)					6		20	6		20	6	20
Detector 1 Type					Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)					0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)					0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)					0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type					NA		Prot	NA		Perm	NA	Perm
Protected Phases					8		5	2			6	
Permitted Phases										6		6

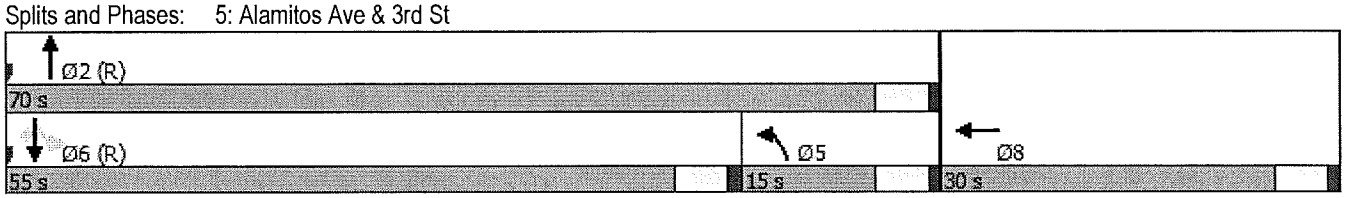
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase					8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)					6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)					30.0		11.0	23.0		19.0	19.0	19.0
Total Split (s)					30.0		15.0	70.0		55.0	55.0	55.0
Total Split (%)					30.0%		15.0%	70.0%		55.0%	55.0%	55.0%
Maximum Green (s)					25.0		10.0	65.0		50.0	50.0	50.0
Yellow Time (s)					4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)					1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)					0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)					5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lag			Lead	Lead	Lead
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)					3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode					None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)					7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)					18.0			11.0		7.0	7.0	7.0
Pedestrian Calls (#/hr)					5			5		5	5	5
Act Effct Green (s)					13.9		10.0	76.1		61.1	61.1	61.1
Actuated g/C Ratio					0.14		0.10	0.76		0.61	0.61	0.61
v/c Ratio					0.51		0.66	0.42		0.35	0.36	0.07
Control Delay					37.8		49.2	2.3		12.7	8.2	1.3
Queue Delay					0.0		0.0	0.1		0.0	0.3	0.0
Total Delay					37.8		49.2	2.4		12.7	8.5	1.3
LOS					D		D	A		B	A	A
Approach Delay					37.8			6.9			8.2	
Approach LOS					D			A			A	
Queue Length 50th (ft)					72		62	30		14	60	0
Queue Length 95th (ft)					96		m#140	82		67	160	1
Internal Link Dist (ft)		450			390			471			317	
Turn Bay Length (ft)							205			110		
Base Capacity (vph)					880		177	2636		261	1138	997
Starvation Cap Reductn					0		0	497		0	275	0
Spillback Cap Reductn					0		0	0		0	0	0
Storage Cap Reductn					0		0	0		0	0	0
Reduced v/c Ratio					0.29		0.66	0.52		0.35	0.47	0.07

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 6 (6%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 11.1 Intersection LOS: B
Intersection Capacity Utilization 56.4% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Alamitos Ave & 3rd St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	365	849	50	126	0	156	0	737	223	87	284	0
Future Volume (vph)	365	849	50	126	0	156	0	737	223	87	284	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		50	0		0	0		0	120		0
Storage Lanes	2		1	1		1	0		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850			0.850		0.965				
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	3433	3539	1583	1770	0	1583	0	3415	0	1770	1863	0
Flt Permitted	0.950			0.950						0.192		
Satd. Flow (perm)	3433	3539	1583	1770	0	1583	0	3415	0	358	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			156		51				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			630			215			551	
Travel Time (s)		13.9			14.3			4.9			12.5	
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
Adj. Flow (vph)	365	849	50	126	0	156	0	737	223	87	284	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	365	849	50	126	0	156	0	960	0	87	284	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1		1		2		1	2	
Detector Template	Left	Thru	Right	Left		Right		Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20		20		100		20	100	
Trailing Detector (ft)	0	0	0	0		0		0		0	0	
Detector 1 Position(ft)	0	0	0	0		0		0		0	0	
Detector 1 Size(ft)	20	6	20	20		20		6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm	Prot		Perm		NA		Perm	NA	
Protected Phases	4	4		8				2			6	
Permitted Phases			4			8				6		

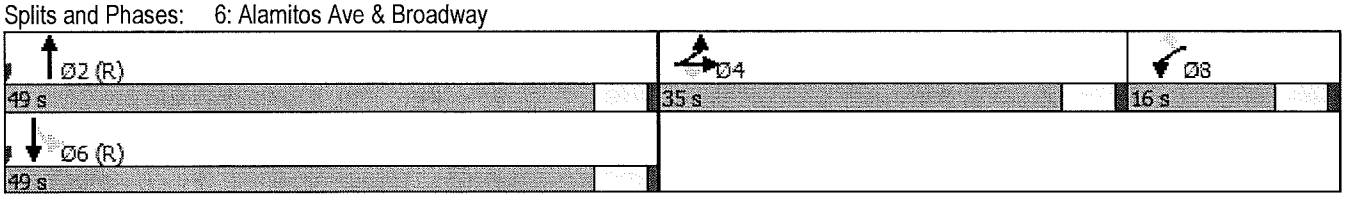
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8		8		2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0		6.0		6.0		6.0	6.0	
Minimum Split (s)	23.0	23.0	23.0	11.0		11.0		26.0		30.0	30.0	
Total Split (s)	35.0	35.0	35.0	16.0		16.0		49.0		49.0	49.0	
Total Split (%)	35.0%	35.0%	35.0%	16.0%		16.0%		49.0%		49.0%	49.0%	
Maximum Green (s)	30.0	30.0	30.0	11.0		11.0		44.0		44.0	44.0	
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0		4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0		1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0		5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0		3.0		3.0	3.0	
Recall Mode	None	None	None	None		None		C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0					14.0		18.0	18.0	
Pedestrian Calls (#/hr)	5	5	5					5		5	5	
Act Effct Green (s)	29.1	29.1	29.1	10.3		10.3		45.6		45.6	45.6	
Actuated g/C Ratio	0.29	0.29	0.29	0.10		0.10		0.46		0.46	0.46	
v/c Ratio	0.37	0.83	0.10	0.69		0.52		0.61		0.53	0.33	
Control Delay	29.1	40.8	3.1	63.4		13.4		7.3		31.6	16.8	
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.3		0.0	0.0	
Total Delay	29.1	40.8	3.1	63.4		13.4		7.6		31.6	16.8	
LOS	C	D	A	E		B		A		C	B	
Approach Delay		36.0			35.8			7.6			20.3	
Approach LOS		D			D			A			C	
Queue Length 50th (ft)	93	261	0	78		0		62		14	46	
Queue Length 95th (ft)	134	336	15	#154		58		74		#113	117	
Internal Link Dist (ft)		530			550			135			471	
Turn Bay Length (ft)	120		50							120		
Base Capacity (vph)	1029	1061	528	194		312		1585		163	849	
Starvation Cap Reductn	0	0	0	0		0		191		0	0	
Spillback Cap Reductn	0	0	0	0		0		0		0	0	
Storage Cap Reductn	0	0	0	0		0		0		0	0	
Reduced v/c Ratio	0.35	0.80	0.09	0.65		0.50		0.69		0.53	0.33	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 24.5 Intersection LOS: C
Intersection Capacity Utilization 78.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: Alamitos Ave & Broadway



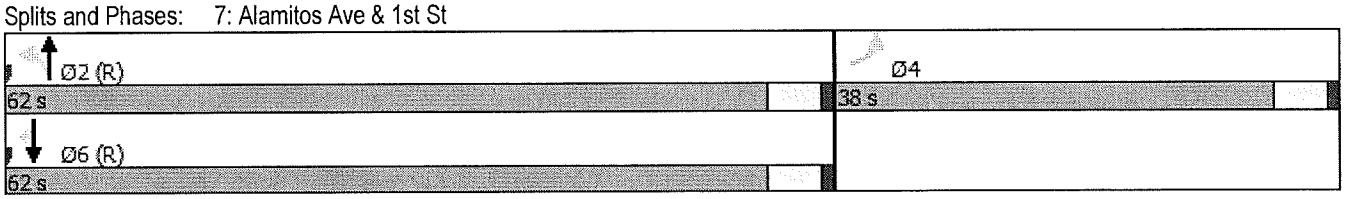
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	123	46	19	836	359	90
Future Volume (vph)	123	46	19	836	359	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	60			0
Storage Lanes	1	0	1			1
Taper Length (ft)	60		60			
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	0.963					0.850
Flt Protected	0.965		0.950			
Satd. Flow (prot)	1731	0	1770	3539	1863	1583
Flt Permitted	0.965		0.539			
Satd. Flow (perm)	1731	0	1004	3539	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	20					90
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			219	212	
Travel Time (s)	12.5			5.0	4.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	123	46	19	836	359	90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	169	0	19	836	359	90
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (ft)	20		20	100	100	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	26.0		11.0	11.0	19.0	19.0
Total Split (s)	38.0		62.0	62.0	62.0	62.0
Total Split (%)	38.0%		62.0%	62.0%	62.0%	62.0%
Maximum Green (s)	33.0		57.0	57.0	57.0	57.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	14.0				7.0	7.0
Pedestrian Calls (#/hr)	5				5	5
Act Effct Green (s)	14.3		75.7	75.7	75.7	75.7
Actuated g/C Ratio	0.14		0.76	0.76	0.76	0.76
v/c Ratio	0.64		0.03	0.31	0.25	0.07
Control Delay	45.7		1.6	1.8	1.0	0.2
Queue Delay	0.0		0.0	0.0	0.3	0.0
Total Delay	45.7		1.6	1.8	1.3	0.2
LOS	D		A	A	A	A
Approach Delay	45.7			1.8	1.0	
Approach LOS	D			A	A	
Queue Length 50th (ft)	91		1	24	5	0
Queue Length 95th (ft)	147		m2	m32	9	m0
Internal Link Dist (ft)	470			139	132	
Turn Bay Length (ft)			60			
Base Capacity (vph)	584		759	2678	1410	1220
Starvation Cap Reductn	0		0	0	523	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.29		0.03	0.31	0.40	0.07

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 9 (9%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 6.6 Intersection LOS: A
Intersection Capacity Utilization 41.1% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Alamitos Ave & 1st St



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	15	0	816	378	10
Future Volume (vph)	0	15	0	816	378	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.95	0.95
Frt		0.865			0.996	
Flt Protected						
Satd. Flow (prot)	0	1611	0	5085	3525	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	5085	3525	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	472			224	231	
Travel Time (s)	10.7			5.1	5.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	15	0	816	378	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	15	0	816	388	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 20.8% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	1407	51	178	692	87	42	453	422	65	122	206
Future Volume (vph)	300	1407	51	178	692	87	42	453	422	65	122	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		50	230		0	220		0	60		0
Storage Lanes	1		1	2		0	1		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.91	0.91
Frt			0.850		0.983				0.850		0.906	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	3433	3479	0	1770	3539	1583	1770	4607	0
Flt Permitted	0.950			0.950			0.546			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	3479	0	1017	3539	1583	1770	4607	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120		14				131		206	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		542			607			703			224	
Travel Time (s)		12.3			13.8			16.0			5.1	
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
Adj. Flow (vph)	300	1407	51	178	692	87	42	453	422	65	122	206
Shared Lane Traffic (%)												
Lane Group Flow (vph)	300	1407	51	178	779	0	42	453	422	65	328	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases			4				2		2			

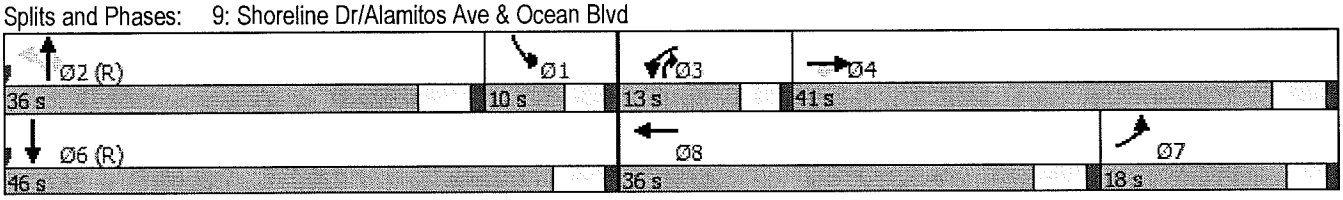
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	36.0	36.0	10.0	36.0		36.0	36.0	10.0	10.0	36.0	
Total Split (s)	18.0	41.0	41.0	13.0	36.0		36.0	36.0	13.0	10.0	46.0	
Total Split (%)	18.0%	41.0%	41.0%	13.0%	36.0%		36.0%	36.0%	13.0%	10.0%	46.0%	
Maximum Green (s)	14.0	36.0	36.0	9.0	31.0		31.0	31.0	9.0	6.0	41.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0		5.0	5.0	4.0	4.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	None	None	C-Max	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		24.0	24.0		24.0		24.0	24.0			24.0	
Pedestrian Calls (#/hr)		5	5		5		5	5			5	
Act Effct Green (s)	17.1	36.3	36.3	8.7	27.9		33.0	33.0	43.5	6.0	41.0	
Actuated g/C Ratio	0.17	0.36	0.36	0.09	0.28		0.33	0.33	0.44	0.06	0.41	
v/c Ratio	1.00	0.76	0.08	0.60	0.79		0.13	0.39	0.55	0.61	0.16	
Control Delay	95.2	31.5	0.2	52.7	39.1		26.2	27.6	12.8	65.9	6.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	95.2	31.5	0.2	52.7	39.1		26.2	27.6	12.8	65.9	6.6	
LOS	F	C	A	D	D		C	C	B	E	A	
Approach Delay		41.4			41.6			20.8			16.4	
Approach LOS		D			D			C			B	
Queue Length 50th (ft)	~216	286	0	57	232		19	119	100	35	1	
Queue Length 95th (ft)	#400	344	0	92	295		46	165	173	#108	37	
Internal Link Dist (ft)		462			527			623			144	
Turn Bay Length (ft)	225		50	230			220			60		
Base Capacity (vph)	301	1844	650	308	1088		335	1168	767	106	2010	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	1.00	0.76	0.08	0.58	0.72		0.13	0.39	0.55	0.61	0.16	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 34.3 Intersection LOS: C
Intersection Capacity Utilization 71.0% ICU Level of Service C
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd



APPENDIX B-III

EXISTING PLUS PROJECT TRAFFIC CONDITIONS (ICU METHODOLOGY)

AM Existing Plus Project Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Alamitos Avenue at 7th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.825
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	126	Level Of Service:	D

Street Name:	Alamitos Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	98	319	366	56	340	109	22	320	36	204	1226	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	319	366	56	340	109	22	320	36	204	1226	58
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	98	319	366	56	340	109	22	320	36	204	1226	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	319	366	56	340	109	22	320	36	204	1226	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	319	366	56	340	109	22	320	36	204	1226	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	98	319	366	56	340	109	22	320	36	204	1226	58
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.80	0.20	1.00	1.91	0.09
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	2876	324	1600	3055	145
Capacity Analysis Module:												
Vol/Sat:	0.06	0.20	0.23	0.04	0.21	0.07	0.01	0.11	0.11	0.13	0.40	0.40
Crit Moves:	****				****						****	

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AM Existing Plus Project Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Alamitos Avenue at 6th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.681
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	B

Street Name:	Alamitos Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Prot+Permit			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 0	1	1 0	1 0	0	1 0	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	0	476	9	5	574	0	289	0	120	10	0	25
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	476	9	5	574	0	289	0	120	10	0	25
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	476	9	5	574	0	289	0	120	10	0	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	476	9	5	574	0	289	0	120	10	0	25
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	476	9	5	574	0	289	0	120	10	0	25
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	476	9	5	574	0	289	0	120	10	0	25
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.29	0.00	0.71
Final Sat.:	0	1600	1600	1600	1600	0	1600	0	1600	457	0	1143
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.01	0.00	0.36	0.00	0.18	0.00	0.08	0.02	0.00	0.02
Crit Moves:	****				****		****					****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Alamitos Avenue at 5th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.647
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	B

Street Name:	Alamitos Avenue						5th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	50	438	7	23	626	78	50	21	27	5	41	25
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	438	7	23	626	78	50	21	27	5	41	25
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	438	7	23	626	78	50	21	27	5	41	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	438	7	23	626	78	50	21	27	5	41	25
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	438	7	23	626	78	50	21	27	5	41	25
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	438	7	23	626	78	50	21	27	5	41	25
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.98	0.02	1.00	0.89	0.11	0.51	0.21	0.28	0.07	0.58	0.35
Final Sat.:	1600	1575	25	1600	1423	177	816	343	441	113	924	563
Capacity Analysis Module:												
Vol/Sat:	0.03	0.28	0.28	0.01	0.44	0.44	0.03	0.06	0.06	0.00	0.04	0.04
Crit Moves:	****				****		****				****	

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AM Existing Plus Project Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Alamitos Avenue at 4th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.833
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	75	Level Of Service:	D

Street Name:	Alamitos Avenue						4th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	86	402	42	92	527	36	36	192	21	176	422	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	86	402	42	92	527	36	36	192	21	176	422	66
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	86	402	42	92	527	36	36	192	21	176	422	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	86	402	42	92	527	36	36	192	21	176	422	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	402	42	92	527	36	36	192	21	176	422	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	86	402	42	92	527	36	36	192	21	176	422	66
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.91	0.09	1.00	0.94	0.06	1.00	1.00	1.00	1.00	0.86	0.14
Final Sat.:	1600	1449	151	1600	1498	102	1600	1600	1600	1600	1384	216
Capacity Analysis Module:												
Vol/Sat:	0.05	0.28	0.28	0.06	0.35	0.35	0.02	0.12	0.01	0.11	0.30	0.31
Crit Moves:	****				****		****					****

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AM Existing Plus Project Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alamitos Avenue at 3rd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.946
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	132	Level Of Service:	E

Street Name:	Alamitos Avenue						3rd Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	0 0	0 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	310	378	22	30	468	149	0	0	0	0	623	69
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	310	378	22	30	468	149	0	0	0	0	623	69
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	310	378	22	30	468	149	0	0	0	0	623	69
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	310	378	22	30	468	149	0	0	0	0	623	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	310	378	22	30	468	149	0	0	0	0	623	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	310	378	22	30	468	149	0	0	0	0	623	69
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.76	0.24	0.00	0.00	0.00	0.00	1.80	0.20
Final Sat.:	1600	1600	1600	1600	1214	386	0	0	0	0	2881	319
Capacity Analysis Module:												
Vol/Sat:	0.19	0.24	0.01	0.02	0.39	0.39	0.00	0.00	0.00	0.00	0.22	0.22
Crit Moves:	****				****							****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Alamitos Avenue at Broadway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.713
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	62	Level Of Service:	C

Street Name:	Alamitos Avenue						Broadway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 0	1	1 0	1 0	0	1 0	2 0	1	1 0	0 0	1
Volume Module:												
Base Vol:	0	283	37	38	429	0	75	224	29	360	0	314
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	283	37	38	429	0	75	224	29	360	0	314
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	283	37	38	429	0	75	224	29	360	0	314
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	283	37	38	429	0	75	224	29	360	0	314
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	283	37	38	429	0	75	224	29	360	0	314
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	283	37	38	429	0	75	224	29	360	0	314
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	2.00	1.00	1.00	0.00	1.00
Final Sat.:	0	1600	1600	1600	1600	0	1600	3200	1600	1600	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.18	0.02	0.02	0.27	0.00	0.05	0.07	0.02	0.23	0.00	0.20
Crit Moves:	****				****			****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Alamitos Avenue at 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.573
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	A

Street Name:	Alamitos Avenue						1st Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	0	0 0	1 0	1	0 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	16	232	0	0	680	170	35	0	26	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	232	0	0	680	170	35	0	26	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	16	232	0	0	680	170	35	0	26	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	232	0	0	680	170	35	0	26	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	232	0	0	680	170	35	0	26	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	232	0	0	680	170	35	0	26	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.00	1.00	0.57	0.00	0.43	0.00	0.00	0.00
Final Sat.:	1600	1600	0	0	1600	1600	918	0	682	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.15	0.00	0.00	0.43	0.11	0.04	0.00	0.04	0.00	0.00	0.00
Crit Moves:	****				****				****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Alamitos Avenue/Shoreline Drive at Ocean Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.779
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	82	Level Of Service:	C

Street Name:	Alamitos Avenue/Shoreline Drive						Ocean Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	3 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	32	69	139	42	277	383	100	414	38	319	1391	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	32	69	139	42	277	383	100	414	38	319	1391	50
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	69	139	42	277	383	100	414	38	319	1391	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	32	69	139	42	277	383	100	414	38	319	1391	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	69	139	42	277	383	100	414	38	319	1391	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	32	69	139	42	277	383	100	414	38	319	1391	50
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	2.00	1.93	0.07
Final Sat.:	1600	3200	1600	1600	3200	1600	1600	4800	1600	2880	3089	111
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.09	0.03	0.09	0.24	0.06	0.09	0.02	0.11	0.45	0.45
OvlAdjV/S:			0.00									
Crit Moves:					****		****				****	

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PM Existing Plus Project Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Alamitos Avenue at 7th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.975
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	154	Level Of Service:	E

Street Name:	Alamitos Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	97	416	755	58	329	63	37	715	39	130	702	59
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	97	416	755	58	329	63	37	715	39	130	702	59
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	97	416	755	58	329	63	37	715	39	130	702	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	97	416	755	58	329	63	37	715	39	130	702	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	97	416	755	58	329	63	37	715	39	130	702	59
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	97	416	755	58	329	63	37	715	39	130	702	59
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.90	0.10	1.00	1.84	0.16
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	3034	166	1600	2952	248
Capacity Analysis Module:												
Vol/Sat:	0.06	0.26	0.47	0.04	0.21	0.04	0.02	0.24	0.24	0.08	0.24	0.24
Crit Moves:			****	****				****		****		

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PM Existing Plus Project Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Alamitos Avenue at 6th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.922
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	115	Level Of Service:	E

Street Name:	Alamitos Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Prot+Permit			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 0	1	1 0	1 0	0	1 0	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	0	835	9	8	489	0	418	0	267	9	0	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	835	9	8	489	0	418	0	267	9	0	13
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	835	9	8	489	0	418	0	267	9	0	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	835	9	8	489	0	418	0	267	9	0	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	835	9	8	489	0	418	0	267	9	0	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	835	9	8	489	0	418	0	267	9	0	13
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.41	0.00	0.59
Final Sat.:	0	1600	1600	1600	1600	0	1600	0	1600	655	0	945
Capacity Analysis Module:												
Vol/Sat:	0.00	0.52	0.01	0.01	0.31	0.00	0.26	0.00	0.17	0.01	0.00	0.01
Crit Moves:		****		****			****					****

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PM Existing Plus Project Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Alamitos Avenue at 5th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.699
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	B

Street Name:	Alamitos Avenue						5th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	17	795	15	38	673	30	38	30	40	3	12	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	795	15	38	673	30	38	30	40	3	12	12
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	17	795	15	38	673	30	38	30	40	3	12	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	17	795	15	38	673	30	38	30	40	3	12	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	795	15	38	673	30	38	30	40	3	12	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	795	15	38	673	30	38	30	40	3	12	12
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.98	0.02	1.00	0.96	0.04	0.35	0.28	0.37	0.11	0.45	0.44
Final Sat.:	1600	1570	30	1600	1532	68	563	444	593	178	711	711
Capacity Analysis Module:												
Vol/Sat:	0.01	0.51	0.51	0.02	0.44	0.44	0.02	0.07	0.07	0.00	0.02	0.02
Crit Moves:		****		****				****		****		

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PM Existing Plus Project Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Alamitos Avenue at 4th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.021
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Alamitos Avenue						4th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	39	747	145	159	513	42	44	367	42	55	204	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	39	747	145	159	513	42	44	367	42	55	204	47
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	747	145	159	513	42	44	367	42	55	204	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	39	747	145	159	513	42	44	367	42	55	204	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	39	747	145	159	513	42	44	367	42	55	204	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	39	747	145	159	513	42	44	367	42	55	204	47
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.84	0.16	1.00	0.92	0.08	1.00	1.00	1.00	1.00	0.81	0.19
Final Sat.:	1600	1340	260	1600	1479	121	1600	1600	1600	1600	1300	300
Capacity Analysis Module:												
Vol/Sat:	0.02	0.56	0.56	0.10	0.35	0.35	0.03	0.23	0.03	0.03	0.16	0.16
Crit Moves:		****		****				****		****		

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PM Existing Plus Project Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alamitos Avenue at 3rd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.806
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	D

Street Name:	Alamitos Avenue						3rd Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	0 0	0 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	117	921	190	92	404	71	0	0	0	0	205	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	117	921	190	92	404	71	0	0	0	0	205	51
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	117	921	190	92	404	71	0	0	0	0	205	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	117	921	190	92	404	71	0	0	0	0	205	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	117	921	190	92	404	71	0	0	0	0	205	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	117	921	190	92	404	71	0	0	0	0	205	51
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.85	0.15	0.00	0.00	0.00	0.00	1.60	0.40
Final Sat.:	1600	1600	1600	1600	1361	239	0	0	0	0	2563	638
Capacity Analysis Module:												
Vol/Sat:	0.07	0.58	0.12	0.06	0.30	0.30	0.00	0.00	0.00	0.00	0.08	0.08
Crit Moves:		****									****	

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PM Existing Plus Project Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Alamitos Avenue at Broadway

Cycle (sec):	100	Critical Vol./Cap.(X):	1.028
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Alamitos Avenue						Broadway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 0	1	1 0	1 0	0	1 0	2 0	1	1 0	0 0	1
Volume Module:												
Base Vol:	0	737	223	87	284	0	365	849	50	126	0	156
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	737	223	87	284	0	365	849	50	126	0	156
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	737	223	87	284	0	365	849	50	126	0	156
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	737	223	87	284	0	365	849	50	126	0	156
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	737	223	87	284	0	365	849	50	126	0	156
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	737	223	87	284	0	365	849	50	126	0	156
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	2.00	1.00	1.00	0.00	1.00
Final Sat.:	0	1600	1600	1600	1600	0	1600	3200	1600	1600	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.46	0.14	0.05	0.18	0.00	0.23	0.27	0.03	0.08	0.00	0.10
Crit Moves:		****		****				****				****

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PM Existing Plus Project Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Alamitos Avenue at 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.728
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	54	Level Of Service:	C

Street Name:	Alamitos Avenue						1st Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	0	0 0	1 0	1	0 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	19	836	0	0	359	90	123	0	46	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	836	0	0	359	90	123	0	46	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	836	0	0	359	90	123	0	46	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	19	836	0	0	359	90	123	0	46	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	836	0	0	359	90	123	0	46	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	836	0	0	359	90	123	0	46	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.00	1.00	0.73	0.00	0.27	0.00	0.00	0.00
Final Sat.:	1600	1600	0	0	1600	1600	1164	0	436	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.52	0.00	0.00	0.22	0.06	0.11	0.00	0.11	0.00	0.00	0.00
Crit Moves:		****		****			****					

PM Existing Plus Project Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Alamitos Avenue/Shoreline Drive at Ocean Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.854
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	96	Level Of Service:	D

Street Name:	Alamitos Avenue/Shoreline Drive						Ocean Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	3 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	42	453	422	65	122	206	300	1407	51	178	692	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	453	422	65	122	206	300	1407	51	178	692	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	453	422	65	122	206	300	1407	51	178	692	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	42	453	422	65	122	206	300	1407	51	178	692	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	453	422	65	122	206	300	1407	51	178	692	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	453	422	65	122	206	300	1407	51	178	692	87
OvlAdjVol:			323									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	2.00	1.78	0.22
Final Sat.:	1600	3200	1600	1600	3200	1600	1600	4800	1600	2880	2843	357
Capacity Analysis Module:												
Vol/Sat:	0.03	0.14	0.26	0.04	0.04	0.13	0.19	0.29	0.03	0.06	0.24	0.24
OvlAdjV/S:			0.20									
Crit Moves:			****	****			****				****	

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to LLG Costa Mesa, CA

APPENDIX B-IV

EXISTING PLUS PROJECT TRAFFIC CONDITIONS (HCM METHODOLOGY)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	320	36	204	1226	58	98	319	366	56	340	109
Future Volume (veh/h)	22	320	36	204	1226	58	98	319	366	56	340	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	320	36	204	1226	58	98	319	366	56	340	109
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	125	885	99	238	1535	73	387	863	946	373	863	733
Arrive On Green	0.28	0.28	0.28	0.13	0.45	0.45	0.77	0.77	0.77	0.46	0.46	0.46
Sat Flow, veh/h	429	3211	358	1774	3441	163	937	1863	1583	754	1863	1583
Grp Volume(v), veh/h	22	175	181	204	630	654	98	319	366	56	340	109
Grp Sat Flow(s),veh/h/ln	429	1770	1799	1774	1770	1834	937	1863	1583	754	1863	1583
Q Serve(g_s), s	5.1	8.8	8.9	12.4	33.7	33.8	5.9	6.0	7.0	5.2	13.2	4.4
Cycle Q Clear(g_c), s	20.1	8.8	8.9	12.4	33.7	33.8	19.1	6.0	7.0	11.2	13.2	4.4
Prop In Lane	1.00		0.20	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	125	488	496	238	789	818	387	863	946	373	863	733
V/C Ratio(X)	0.18	0.36	0.36	0.86	0.80	0.80	0.25	0.37	0.39	0.15	0.39	0.15
Avail Cap(c_a), veh/h	132	515	523	403	981	1017	387	863	946	373	863	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	32.0	32.1	46.6	26.2	26.2	12.3	7.4	4.4	20.8	19.4	17.0
Incr Delay (d2), s/veh	0.7	0.4	0.4	9.0	3.8	3.7	1.4	1.1	1.0	0.8	1.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.3	4.5	6.7	17.3	17.9	1.7	3.2	3.2	1.2	7.1	2.0
LnGrp Delay(d),s/veh	43.6	32.5	32.5	55.6	30.0	29.9	13.6	8.4	5.4	21.6	20.7	17.5
LnGrp LOS	D	C	C	E	C	C	B	A	A	C	C	B
Approach Vol, veh/h		378			1488			783			505	
Approach Delay, s/veh		33.2			33.5			7.7			20.1	
Approach LOS		C			C			A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		55.9	18.8	35.3		55.9		54.1
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0		5.0
Max Green Setting (Gmax), s		39.0	25.0	32.0		39.0		61.0
Max Q Clear Time (g_c+I1), s		21.1	14.4	22.1		15.2		35.8
Green Ext Time (p_c), s		6.6	0.4	7.0		7.4		13.3

Intersection Summary	
HCM 2010 Ctrl Delay	24.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	289	0	120	10	0	25	0	476	9	5	574	0
Future Volume (veh/h)	289	0	120	10	0	25	0	476	9	5	574	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	289	0	120	10	0	25	0	476	9	5	574	0
Adj No. of Lanes	1	1	0	0	1	0	0	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	0
Cap, veh/h	335	0	367	46	14	46	0	1262	1072	680	1262	0
Arrive On Green	0.11	0.00	0.23	0.07	0.00	0.07	0.00	1.00	1.00	1.00	1.00	0.00
Sat Flow, veh/h	1774	0	1583	56	196	632	0	1863	1583	907	1863	0
Grp Volume(v), veh/h	289	0	120	35	0	0	0	476	9	5	574	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583	884	0	0	0	1863	1583	907	1863	0
Q Serve(g_s), s	9.1	0.0	6.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.1	0.0	6.9	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	0.29		0.71	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	335	0	367	106	0	0	0	1262	1072	680	1262	0
V/C Ratio(X)	0.86	0.00	0.33	0.33	0.00	0.00	0.00	0.38	0.01	0.01	0.45	0.00
Avail Cap(c_a), veh/h	536	0	547	106	0	0	0	1262	1072	680	1262	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.96	0.96	0.83	0.83	0.00
Uniform Delay (d), s/veh	44.5	0.0	35.1	48.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	8.3	0.0	0.5	1.8	0.0	0.0	0.0	0.8	0.0	0.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	0.0	3.1	1.1	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.0
LnGrp Delay(d),s/veh	52.8	0.0	35.6	50.2	0.0	0.0	0.0	0.8	0.0	0.0	1.0	0.0
LnGrp LOS	D		D	D				A	A	A	A	
Approach Vol, veh/h		409			35			485			579	
Approach Delay, s/veh		47.8			50.2			0.8			1.0	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		79.5		30.5		79.5	17.5	13.0
Change Period (Y+Rc), s		5.0		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		62.0		38.0		62.0	25.0	8.0
Max Q Clear Time (g_c+I1), s		2.0		8.9		2.0	11.1	9.0
Green Ext Time (p_c), s		9.1		1.7		9.1	1.4	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	21	27	5	41	25	50	438	7	23	626	78
Future Volume (veh/h)	50	21	27	5	41	25	50	438	7	23	626	78
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	50	21	27	5	41	25	50	438	7	23	626	78
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	36	37	40	88	50	678	1513	24	844	1345	168
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	744	444	452	56	1081	618	740	1828	29	941	1625	202
Grp Volume(v), veh/h	98	0	0	71	0	0	50	0	445	23	0	704
Grp Sat Flow(s),veh/h/ln	1640	0	0	1755	0	0	740	0	1858	941	0	1827
Q Serve(g_s), s	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.1	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.51		0.28	0.07		0.35	1.00		0.02	1.00		0.11
Lane Grp Cap(c), veh/h	183	0	0	178	0	0	678	0	1538	844	0	1512
V/C Ratio(X)	0.54	0.00	0.00	0.40	0.00	0.00	0.07	0.00	0.29	0.03	0.00	0.47
Avail Cap(c_a), veh/h	440	0	0	474	0	0	678	0	1538	844	0	1512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.92	0.00	0.92	0.88	0.00	0.88
Uniform Delay (d), s/veh	49.1	0.0	0.0	48.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	2.4	0.0	0.0	1.4	0.0	0.0	0.2	0.0	0.4	0.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.4
LnGrp Delay(d),s/veh	51.5	0.0	0.0	49.8	0.0	0.0	0.2	0.0	0.4	0.1	0.0	0.9
LnGrp LOS	D			D			A		A	A		A
Approach Vol, veh/h		98			71			495			727	
Approach Delay, s/veh		51.5			49.8			0.4			0.9	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		96.0		14.0		96.0		14.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		72.0		28.0		72.0		28.0
Max Q Clear Time (g_c+I1), s		2.0		8.1		2.0		6.3
Green Ext Time (p_c), s		11.9		0.9		11.9		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	192	21	176	422	66	86	402	42	92	527	36
Future Volume (veh/h)	36	192	21	176	422	66	86	402	42	92	527	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	36	192	21	176	422	66	86	402	42	92	527	36
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	631	536	371	533	83	442	946	99	521	984	67
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.76	0.76	0.76	0.76	0.76	0.76
Sat Flow, veh/h	904	1863	1583	1164	1573	246	844	1659	173	942	1724	118
Grp Volume(v), veh/h	36	192	21	176	0	488	86	0	444	92	0	563
Grp Sat Flow(s),veh/h/ln	904	1863	1583	1164	0	1819	844	0	1832	942	0	1842
Q Serve(g_s), s	4.1	8.4	1.0	14.5	0.0	26.7	5.3	0.0	9.5	4.4	0.0	13.7
Cycle Q Clear(g_c), s	30.8	8.4	1.0	22.8	0.0	26.7	18.9	0.0	9.5	13.9	0.0	13.7
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.09	1.00		0.06
Lane Grp Cap(c), veh/h	152	631	536	371	0	616	442	0	1045	521	0	1051
V/C Ratio(X)	0.24	0.30	0.04	0.47	0.00	0.79	0.19	0.00	0.42	0.18	0.00	0.54
Avail Cap(c_a), veh/h	224	779	662	464	0	761	442	0	1045	521	0	1051
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.97	0.00	0.97	0.87	0.00	0.87
Uniform Delay (d), s/veh	46.8	26.8	24.4	35.2	0.0	32.9	11.2	0.0	6.8	9.3	0.0	7.4
Incr Delay (d2), s/veh	0.8	0.3	0.0	0.9	0.0	4.6	0.9	0.0	1.2	0.6	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.4	0.4	4.7	0.0	14.2	1.3	0.0	5.1	1.2	0.0	7.3
LnGrp Delay(d),s/veh	47.6	27.1	24.4	36.2	0.0	37.5	12.1	0.0	8.1	10.0	0.0	9.1
LnGrp LOS	D	C	C	D		D	B		A	A		A
Approach Vol, veh/h		249			664			530			655	
Approach Delay, s/veh		29.8			37.2			8.7			9.2	
Approach LOS		C			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		67.7		42.3		67.7		42.3
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		54.0		46.0		54.0		46.0
Max Q Clear Time (g_c+I1), s		20.9		32.8		15.9		28.7
Green Ext Time (p_c), s		9.5		4.5		9.8		5.1

Intersection Summary	
HCM 2010 Ctrl Delay	20.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	623	69	310	378	22	30	468	149
Future Volume (veh/h)	0	0	0	0	623	69	310	378	22	30	468	149
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				0	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				0	623	69	310	378	22	30	468	149
Adj No. of Lanes				0	2	0	1	1	1	1	1	0
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	2	0	2	2	2	2	2	2
Cap, veh/h				0	0	0	871	1778	1511	476	567	180
Arrive On Green				0.00	0.00	0.00	0.98	1.00	1.00	0.56	0.56	0.56
Sat Flow, veh/h					0		1774	1863	1583	981	1355	431
Grp Volume(v), veh/h					0.0		310	378	22	30	0	617
Grp Sat Flow(s),veh/h/ln							1774	1863	1583	981	0	1787
Q Serve(g_s), s							0.5	0.0	0.0	1.6	0.0	31.2
Cycle Q Clear(g_c), s							0.5	0.0	0.0	1.6	0.0	31.2
Prop In Lane							1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h							871	1778	1511	476	0	747
V/C Ratio(X)							0.36	0.21	0.01	0.06	0.00	0.83
Avail Cap(c_a), veh/h							871	1778	1511	476	0	747
HCM Platoon Ratio							2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)							0.92	0.92	0.92	0.85	0.00	0.85
Uniform Delay (d), s/veh							0.5	0.0	0.0	14.5	0.0	21.1
Incr Delay (d2), s/veh							0.2	0.3	0.0	0.2	0.0	8.8
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							0.2	0.1	0.0	0.4	0.0	17.0
LnGrp Delay(d),s/veh							0.7	0.3	0.0	14.8	0.0	29.9
LnGrp LOS							A	A	A	B		C
Approach Vol, veh/h								710			647	
Approach Delay, s/veh								0.5			29.2	
Approach LOS								A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		
Phs Duration (G+Y+Rc), s		110.0			59.0	51.0		
Change Period (Y+Rc), s		5.0			5.0	5.0		
Max Green Setting (Gmax), s		75.0			24.0	46.0		
Max Q Clear Time (g_c+I1), s		2.0			2.5	33.2		
Green Ext Time (p_c), s		3.7			3.4	3.6		

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	224	29	360	0	314	0	283	37	38	429	0
Future Volume (veh/h)	75	224	29	360	0	314	0	283	37	38	429	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	0	1863	0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	75	224	29	360	0	314	0	283	37	38	429	0
Adj No. of Lanes	1	2	1	1	0	1	0	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	159	318	142	0	0	0	0	1526	1297	896	1526	0
Arrive On Green	0.09	0.09	0.09	0.00	0.00	0.00	0.00	0.82	0.82	0.55	0.55	0.00
Sat Flow, veh/h	1774	3539	1583		0		0	1863	1583	1055	1863	0
Grp Volume(v), veh/h	75	224	29		0.0		0	283	37	38	429	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583				0	1863	1583	1055	1863	0
Q Serve(g_s), s	4.4	6.8	1.9				0.0	3.6	0.5	1.9	13.5	0.0
Cycle Q Clear(g_c), s	4.4	6.8	1.9				0.0	3.6	0.5	5.5	13.5	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	159	318	142				0	1526	1297	896	1526	0
V/C Ratio(X)	0.47	0.70	0.20				0.00	0.19	0.03	0.04	0.28	0.00
Avail Cap(c_a), veh/h	290	579	259				0	1526	1297	896	1526	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.67	0.67	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.50	0.50	0.00
Uniform Delay (d), s/veh	47.6	48.6	46.4				0.0	2.1	1.8	6.6	7.5	0.0
Incr Delay (d2), s/veh	2.1	2.8	0.7				0.0	0.3	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	3.4	0.8				0.0	1.9	0.2	0.6	7.1	0.0
LnGrp Delay(d),s/veh	49.7	51.5	47.1				0.0	2.4	1.9	6.6	7.8	0.0
LnGrp LOS	D	D	D					A	A	A	A	
Approach Vol, veh/h		328						320			467	
Approach Delay, s/veh		50.7						2.3			7.7	
Approach LOS		D						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		95.1		14.9		95.1		
Change Period (Y+Rc), s		5.0		5.0		5.0		
Max Green Setting (Gmax), s		41.0		18.0		41.0		
Max Q Clear Time (g_c+I1), s		5.6		8.8		15.5		
Green Ext Time (p_c), s		5.4		1.1		5.1		

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	26	16	232	680	170
Future Volume (vph)	35	26	16	232	680	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.94		1.00	1.00	1.00	0.85
Flt Protected	0.97		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1707		1770	1863	1863	1583
Flt Permitted	0.97		0.38	1.00	1.00	1.00
Satd. Flow (perm)	1707		704	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	26	16	232	680	170
RTOR Reduction (vph)	24	0	0	0	0	29
Lane Group Flow (vph)	37	0	16	232	680	141
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	8.8		91.2	91.2	91.2	91.2
Effective Green, g (s)	8.8		91.2	91.2	91.2	91.2
Actuated g/C Ratio	0.08		0.83	0.83	0.83	0.83
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	136		583	1544	1544	1312
v/s Ratio Prot				0.12	c0.37	
v/s Ratio Perm	c0.02		0.02			0.09
v/c Ratio	0.27		0.03	0.15	0.44	0.11
Uniform Delay, d1	47.6		1.6	1.8	2.5	1.8
Progression Factor	1.00		0.26	0.32	0.52	0.54
Incremental Delay, d2	1.1		0.1	0.2	0.8	0.1
Delay (s)	48.7		0.5	0.8	2.1	1.1
Level of Service	D		A	A	A	A
Approach Delay (s)	48.7			0.7	1.9	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱		↑↑	↑	
Traffic Vol, veh/h	0	7	0	213	688	7
Future Vol, veh/h	0	7	0	213	688	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	0	213	688	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	692	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	443	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	443	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	443	-	-
HCM Lane V/C Ratio	-	0.016	-	-
HCM Control Delay (s)	-	13.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	414	38	319	1391	50	32	69	139	42	277	383
Future Volume (veh/h)	100	414	38	319	1391	50	32	69	139	42	277	383
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	414	0	319	1391	50	32	69	139	42	277	383
Adj No. of Lanes	1	3	1	2	2	0	1	2	1	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	1946	606	386	1470	53	257	1030	638	295	1780	796
Arrive On Green	0.06	0.38	0.00	0.11	0.42	0.42	0.29	0.29	0.29	0.17	0.50	0.50
Sat Flow, veh/h	1774	5085	1583	3442	3485	125	771	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	100	414	0	319	705	736	32	69	139	42	277	383
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1770	1841	771	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.2	6.0	0.0	10.0	42.1	42.3	3.6	1.6	4.5	2.2	4.6	17.4
Cycle Q Clear(g_c), s	6.2	6.0	0.0	10.0	42.1	42.3	8.3	1.6	4.5	2.2	4.6	17.4
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	113	1946	606	386	747	777	257	1030	638	295	1780	796
V/C Ratio(X)	0.89	0.21	0.00	0.83	0.94	0.95	0.12	0.07	0.22	0.14	0.16	0.48
Avail Cap(c_a), veh/h	113	1946	606	469	756	786	257	1030	638	295	1780	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	22.8	0.0	47.8	30.6	30.6	32.4	28.2	13.8	39.1	14.7	17.9
Incr Delay (d2), s/veh	51.0	0.1	0.0	9.9	20.3	20.2	1.0	0.1	0.8	0.2	0.2	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	2.8	0.0	5.3	24.8	25.8	0.8	0.8	2.1	1.1	2.3	8.1
LnGrp Delay(d),s/veh	102.1	22.9	0.0	57.7	50.9	50.8	33.4	28.3	14.5	39.4	14.9	20.0
LnGrp LOS	F	C		E	D	D	C	C	B	D	B	C
Approach Vol, veh/h		514			1760			240			702	
Approach Delay, s/veh		38.3			52.1			21.0			19.2	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	23.7	37.0	16.3	47.1		60.7	12.0	51.4
Change Period (Y+Rc), s	5.0	* 5	4.0	5.0		5.0	5.0	* 5
Max Green Setting (Gmax), s	6.0	* 32	15.0	39.0		42.0	7.0	* 47
Max Q Clear Time (g_c+I1), s	4.2	10.3	12.0	8.0		19.4	8.2	44.3
Green Ext Time (p_c), s	0.7	1.0	0.3	3.3		3.3	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	40.4
HCM 2010 LOS	D

Notes

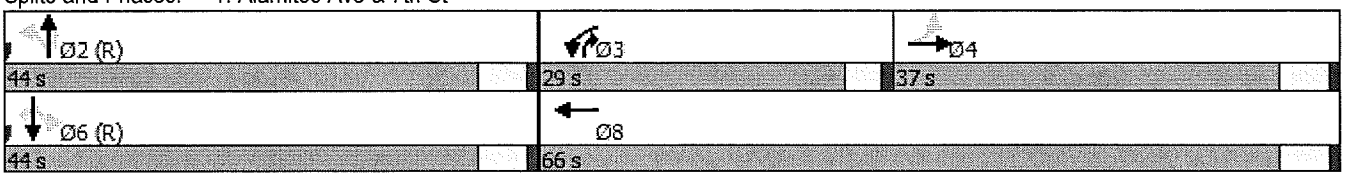
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	320	36	204	1226	58	98	319	366	56	340	109
Future Volume (vph)	22	320	36	204	1226	58	98	319	366	56	340	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	300		0	145		60	130		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.993				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3486	0	1770	3514	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.163			0.950			0.443			0.465		
Satd. Flow (perm)	304	3486	0	1770	3514	0	825	1863	1583	866	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			7				260			60
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		507			578			527			677	
Travel Time (s)		11.5			13.1			12.0			15.4	
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
Adj. Flow (vph)	22	320	36	204	1226	58	98	319	366	56	340	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	356	0	204	1284	0	98	319	366	56	340	109
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4						2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		3	8		2	2	3	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	33.0	33.0		10.0	26.0		30.0	30.0	10.0	30.0	30.0	30.0
Total Split (s)	37.0	37.0		29.0	66.0		44.0	44.0	29.0	44.0	44.0	44.0
Total Split (%)	33.6%	33.6%		26.4%	60.0%		40.0%	40.0%	26.4%	40.0%	40.0%	40.0%
Maximum Green (s)	32.0	32.0		25.0	61.0		39.0	39.0	25.0	39.0	39.0	39.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0			14.0		18.0	18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)	5	5			5		5	5		5	5	5
Act Effct Green (s)	30.7	30.7		18.0	52.7		47.3	47.3	70.3	47.3	47.3	47.3
Actuated g/C Ratio	0.28	0.28		0.16	0.48		0.43	0.43	0.64	0.43	0.43	0.43
v/c Ratio	0.26	0.36		0.70	0.76		0.28	0.40	0.33	0.15	0.42	0.15
Control Delay	39.7	31.8		56.0	26.2		20.3	19.9	4.9	23.3	25.5	11.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	31.8		56.0	26.2		20.3	19.9	4.9	23.3	25.5	11.5
LOS	D	C		E	C		C	B	A	C	C	B
Approach Delay		32.2			30.3			12.9			22.2	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	12	101		138	372		30	117	24	24	166	20
Queue Length 95th (ft)	37	144		202	394		99	267	124	58	276	61
Internal Link Dist (ft)		427			498			447			597	
Turn Bay Length (ft)	55			300			145		60	130		
Base Capacity (vph)	88	1023		402	1951		354	800	1189	372	800	714
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.35		0.51	0.66		0.28	0.40	0.31	0.15	0.42	0.15

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 77 (70%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 24.9 Intersection LOS: C
Intersection Capacity Utilization 80.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Alamitos Ave & 7th St



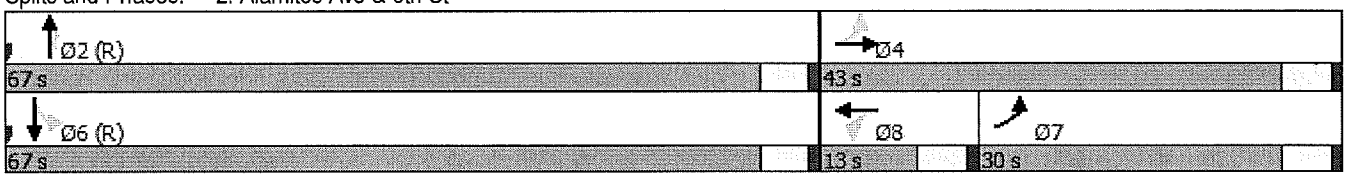
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	289	0	120	10	0	25	0	476	9	5	574	0
Future Volume (vph)	289	0	120	10	0	25	0	476	9	5	574	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		60	225		0
Storage Lanes	1		0	0		0	0		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.904				0.850			
Flt Protected	0.950				0.986					0.950		
Satd. Flow (prot)	1770	1583	0	0	1660	0	0	1863	1583	1770	1863	0
Flt Permitted	0.930				0.714					0.429		
Satd. Flow (perm)	1732	1583	0	0	1202	0	0	1863	1583	799	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		291			69				69			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		536			543			380			527	
Travel Time (s)		12.2			12.3			8.6			12.0	
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
Adj. Flow (vph)	289	0	120	10	0	25	0	476	9	5	574	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	289	120	0	0	35	0	0	476	9	5	574	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2	1	1	2	
Detector Template	Left	Thru		Left	Thru			Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100			100	20	20	100	
Trailing Detector (ft)	0	0		0	0			0	0	0	0	
Detector 1 Position(ft)	0	0		0	0			0	0	0	0	
Detector 1 Size(ft)	20	6		20	6			6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA			NA	Perm	Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8					2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8			2	2	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Minimum Split (s)	11.0	26.0		11.0	11.0			19.0	19.0	11.0	11.0	
Total Split (s)	30.0	43.0		13.0	13.0			67.0	67.0	67.0	67.0	
Total Split (%)	27.3%	39.1%		11.8%	11.8%			60.9%	60.9%	60.9%	60.9%	
Maximum Green (s)	25.0	38.0		8.0	8.0			62.0	62.0	62.0	62.0	
Yellow Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0			1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0	5.0	5.0	5.0	
Lead/Lag	Lag			Lead	Lead							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None			C-Max	C-Max	C-Max	C-Max	
Walk Time (s)		7.0						7.0	7.0			
Flash Dont Walk (s)		14.0						7.0	7.0			
Pedestrian Calls (#/hr)		5						5	5			
Act Effct Green (s)	26.8	26.8			6.0			73.2	73.2	73.2	73.2	
Actuated g/C Ratio	0.24	0.24			0.05			0.67	0.67	0.67	0.67	
v/c Ratio	0.67	0.20			0.27			0.38	0.01	0.01	0.46	
Control Delay	44.7	0.7			7.4			8.3	0.0	2.6	5.9	
Queue Delay	0.0	0.0			0.0			0.4	0.0	0.0	0.3	
Total Delay	44.7	0.7			7.4			8.7	0.0	2.6	6.3	
LOS	D	A			A			A	A	A	A	
Approach Delay		31.8			7.4			8.5			6.3	
Approach LOS		C			A			A			A	
Queue Length 50th (ft)	176	0			0			100	0	0	208	
Queue Length 95th (ft)	256	0			9			161	m0	m1	227	
Internal Link Dist (ft)		456			463			300			447	
Turn Bay Length (ft)									60	225		
Base Capacity (vph)	506	737			151			1238	1075	531	1238	
Starvation Cap Reductn	0	0			0			323	0	0	238	
Spillback Cap Reductn	0	2			0			0	0	0	19	
Storage Cap Reductn	0	0			0			0	0	0	0	
Reduced v/c Ratio	0.57	0.16			0.23			0.52	0.01	0.01	0.57	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 98 (89%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 13.9 Intersection LOS: B
Intersection Capacity Utilization 61.2% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Alamitos Ave & 6th St



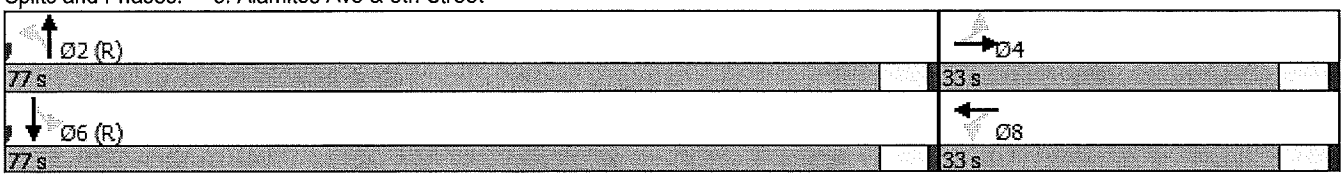
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	21	27	5	41	25	50	438	7	23	626	78
Future Volume (vph)	50	21	27	5	41	25	50	438	7	23	626	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.952			0.998			0.983	
Flt Protected		0.975			0.996		0.950			0.950		
Satd. Flow (prot)	0	1749	0	0	1766	0	1770	1859	0	1770	1831	0
Flt Permitted		0.810			0.978		0.353			0.490		
Satd. Flow (perm)	0	1453	0	0	1734	0	658	1859	0	913	1831	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			24			2			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			618			468			380	
Travel Time (s)		12.0			14.0			10.6			8.6	
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
Adj. Flow (vph)	50	21	27	5	41	25	50	438	7	23	626	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	0	0	71	0	50	445	0	23	704	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	11.0		30.0	30.0		19.0	19.0		19.0	19.0	
Total Split (s)	33.0	33.0		33.0	33.0		77.0	77.0		77.0	77.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	28.0	28.0		28.0	28.0		72.0	72.0		72.0	72.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				18.0	18.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)				5	5		5	5		5	5	
Act Effct Green (s)		13.0			13.0		87.0	87.0		87.0	87.0	
Actuated g/C Ratio		0.12			0.12		0.79	0.79		0.79	0.79	
v/c Ratio		0.52			0.31		0.10	0.30		0.03	0.49	
Control Delay		45.6			32.2		2.6	2.5		0.9	2.3	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.1	
Total Delay		45.6			32.2		2.6	2.6		0.9	2.4	
LOS		D			C		A	A		A	A	
Approach Delay		45.6			32.2			2.6			2.4	
Approach LOS		D			C			A			A	
Queue Length 50th (ft)		55			31		4	41		1	16	
Queue Length 95th (ft)		96			65		m13	79		m2	37	
Internal Link Dist (ft)		450			538			388			300	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		382			459		520	1469		721	1450	
Starvation Cap Reductn		0			0		0	287		0	102	
Spillback Cap Reductn		0			0		0	0		0	5	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.26			0.15		0.10	0.38		0.03	0.52	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 104 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 7.0 Intersection LOS: A
Intersection Capacity Utilization 62.1% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Alamitos Ave & 5th Street



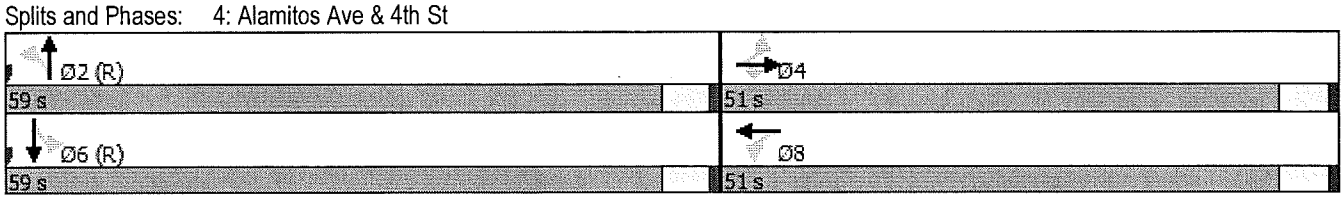
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	192	21	176	422	66	86	402	42	92	527	36
Future Volume (vph)	36	192	21	176	422	66	86	402	42	92	527	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	50		0	115		0	155		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.980			0.986			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1825	0	1770	1837	0	1770	1844	0
Flt Permitted	0.180			0.569			0.341			0.426		
Satd. Flow (perm)	335	1863	1583	1060	1825	0	635	1837	0	794	1844	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			21		9			7			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		549			626			397			468	
Travel Time (s)		12.5			14.2			9.0			10.6	
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
Adj. Flow (vph)	36	192	21	176	422	66	86	402	42	92	527	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	192	21	176	488	0	86	444	0	92	563	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		23.0	23.0		26.0	26.0	
Total Split (s)	51.0	51.0	51.0	51.0	51.0		59.0	59.0		59.0	59.0	
Total Split (%)	46.4%	46.4%	46.4%	46.4%	46.4%		53.6%	53.6%		53.6%	53.6%	
Maximum Green (s)	46.0	46.0	46.0	46.0	46.0		54.0	54.0		54.0	54.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0		11.0	11.0		14.0	14.0	
Pedestrian Calls (#/hr)	5	5	5	5	5		5	5		5	5	
Act Effct Green (s)	35.9	35.9	35.9	35.9	35.9		64.1	64.1		64.1	64.1	
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33		0.58	0.58		0.58	0.58	
v/c Ratio	0.33	0.32	0.04	0.51	0.81		0.23	0.41		0.20	0.52	
Control Delay	34.0	27.7	8.3	33.8	43.7		15.1	15.2		5.5	6.7	
Queue Delay	0.0	0.0	0.0	0.2	0.0		0.0	0.5		0.0	0.3	
Total Delay	34.0	27.7	8.3	34.1	43.7		15.1	15.7		5.5	7.0	
LOS	C	C	A	C	D		B	B		A	A	
Approach Delay		27.0			41.1			15.6			6.8	
Approach LOS		C			D			B			A	
Queue Length 50th (ft)	19	100	0	99	306		26	138		10	64	
Queue Length 95th (ft)	45	139	15	147	378		m77	m306		18	126	
Internal Link Dist (ft)		469			546			317			388	
Turn Bay Length (ft)	55			50			115			155		
Base Capacity (vph)	140	779	674	443	768		369	1072		462	1075	
Starvation Cap Reductn	0	0	0	0	0		0	280		0	136	
Spillback Cap Reductn	0	0	56	36	0		0	0		0	94	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.26	0.25	0.03	0.43	0.64		0.23	0.56		0.20	0.60	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 3 (3%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 22.3 Intersection LOS: C
Intersection Capacity Utilization 82.8% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Alamitos Ave & 4th St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	623	69	310	378	22	30	468	149
Future Volume (vph)	0	0	0	0	623	69	310	378	22	30	468	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	60		0	205		60	110		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.985				0.850		0.964	
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	0	0	3486	0	1770	1863	1583	1770	1796	0
Flt Permitted							0.950			0.489		
Satd. Flow (perm)	0	0	0	0	3486	0	1770	1863	1583	911	1796	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					10				20		18	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			470			551			397	
Travel Time (s)		12.0			10.7			12.5			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
Adj. Flow (vph)	0	0	0	0	623	69	310	378	22	30	468	149
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	692	0	310	378	22	30	617	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					2		1	2	1	1	2	
Detector Template					Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)					100		20	100	20	20	100	
Trailing Detector (ft)					0		0	0	0	0	0	
Detector 1 Position(ft)					0		0	0	0	0	0	
Detector 1 Size(ft)					6		20	6	20	20	6	
Detector 1 Type					Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type					NA		Prot	NA	Perm	Perm	NA	
Protected Phases					8		5	2			6	
Permitted Phases									2	6		

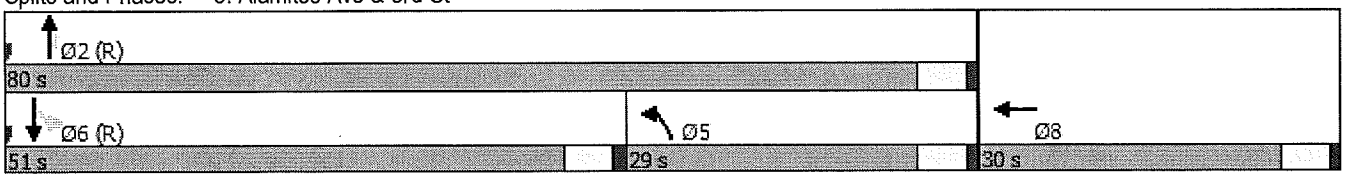
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase					8		5	2	2	6	6	
Switch Phase												
Minimum Initial (s)					6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)					30.0		11.0	23.0	23.0	19.0	19.0	
Total Split (s)					30.0		29.0	80.0	80.0	51.0	51.0	
Total Split (%)					27.3%		26.4%	72.7%	72.7%	46.4%	46.4%	
Maximum Green (s)					25.0		24.0	75.0	75.0	46.0	46.0	
Yellow Time (s)					4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)					1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)					5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag							Lag			Lead	Lead	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)					3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode					None		None	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)					7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)					18.0			11.0	11.0	7.0	7.0	
Pedestrian Calls (#/hr)					5			5	5	5	5	
Act Effct Green (s)					24.4		24.0	75.6	75.6	46.6	46.6	
Actuated g/C Ratio					0.22		0.22	0.69	0.69	0.42	0.42	
v/c Ratio					0.88		0.80	0.30	0.02	0.08	0.80	
Control Delay					55.2		52.3	7.1	2.5	19.2	33.0	
Queue Delay					0.0		0.0	0.0	0.0	0.0	2.2	
Total Delay					55.2		52.3	7.1	2.5	19.2	35.3	
LOS					E		D	A	A	B	D	
Approach Delay					55.2			26.7			34.5	
Approach LOS					E			C			C	
Queue Length 50th (ft)					245		176	76	0	11	340	
Queue Length 95th (ft)					#343		#337	130	m5	m23	#352	
Internal Link Dist (ft)		450			390			471			317	
Turn Bay Length (ft)							205		60	110		
Base Capacity (vph)					800		386	1280	1093	385	770	
Starvation Cap Reductn					0		0	0	0	0	66	
Spillback Cap Reductn					0		0	0	0	0	0	
Storage Cap Reductn					0		0	0	0	0	0	
Reduced v/c Ratio					0.86		0.80	0.30	0.02	0.08	0.88	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 104 (95%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 38.8 Intersection LOS: D
Intersection Capacity Utilization 82.8% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Alamitos Ave & 3rd St



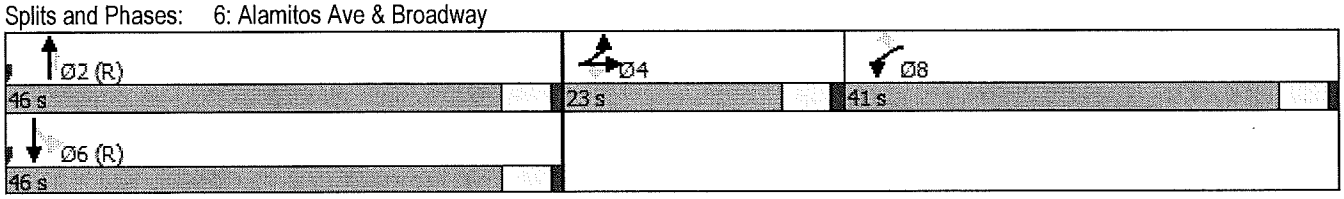
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	224	29	360	0	314	0	283	37	38	429	0
Future Volume (vph)	75	224	29	360	0	314	0	283	37	38	429	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		50	0		0	0		60	120		0
Storage Lanes	1		1	1		1	0		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1770	3539	1583	1770	0	1583	0	1863	1583	1770	1863	0
Flt Permitted	0.950			0.950						0.529		
Satd. Flow (perm)	1770	3539	1583	1770	0	1583	0	1863	1583	985	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69			314			69			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			630			215			551	
Travel Time (s)		13.9			14.3			4.9			12.5	
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
Adj. Flow (vph)	75	224	29	360	0	314	0	283	37	38	429	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	224	29	360	0	314	0	283	37	38	429	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1		1		2	1	1	2	
Detector Template	Left	Thru	Right	Left		Right		Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20		20		100	20	20	100	
Trailing Detector (ft)	0	0	0	0		0		0	0	0	0	
Detector 1 Position(ft)	0	0	0	0		0		0	0	0	0	
Detector 1 Size(ft)	20	6	20	20		20		6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm	Prot		Perm		NA	Perm	Perm	NA	
Protected Phases	4	4		8				2			6	
Permitted Phases			4			8			2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8		8		2	2	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0		6.0		6.0	6.0	6.0	6.0	
Minimum Split (s)	23.0	23.0	23.0	11.0		11.0		26.0	26.0	30.0	30.0	
Total Split (s)	23.0	23.0	23.0	41.0		41.0		46.0	46.0	46.0	46.0	
Total Split (%)	20.9%	20.9%	20.9%	37.3%		37.3%		41.8%	41.8%	41.8%	41.8%	
Maximum Green (s)	18.0	18.0	18.0	36.0		36.0		41.0	41.0	41.0	41.0	
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0		5.0	5.0	5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None		None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0					14.0	14.0	18.0	18.0	
Pedestrian Calls (#/hr)	5	5	5					5	5	5	5	
Act Effct Green (s)	12.7	12.7	12.7	27.8		27.8		54.4	54.4	54.4	54.4	
Actuated g/C Ratio	0.12	0.12	0.12	0.25		0.25		0.49	0.49	0.49	0.49	
v/c Ratio	0.37	0.55	0.12	0.80		0.49		0.31	0.05	0.08	0.47	
Control Delay	49.0	50.5	1.0	52.0		6.0		11.0	0.5	1.1	2.5	
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.5	0.0	0.0	0.3	
Total Delay	49.0	50.5	1.0	52.0		6.0		11.4	0.5	1.1	2.8	
LOS	D	D	A	D		A		B	A	A	A	
Approach Delay		45.8			30.6			10.2			2.7	
Approach LOS		D			C			B			A	
Queue Length 50th (ft)	50	80	0	239		0		67	1	0	4	
Queue Length 95th (ft)	91	114	2	315		61		128	0	m4	m114	
Internal Link Dist (ft)		530			550			135			471	
Turn Bay Length (ft)	120		50						60	120		
Base Capacity (vph)	289	579	316	579		729		921	818	487	921	
Starvation Cap Reductn	0	0	0	0		0		297	0	0	137	
Spillback Cap Reductn	0	0	0	0		0		0	0	0	0	
Storage Cap Reductn	0	0	0	0		0		0	0	0	0	
Reduced v/c Ratio	0.26	0.39	0.09	0.62		0.43		0.45	0.05	0.08	0.55	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 16 (15%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 22.4 Intersection LOS: C
Intersection Capacity Utilization 61.9% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Alamitos Ave & Broadway



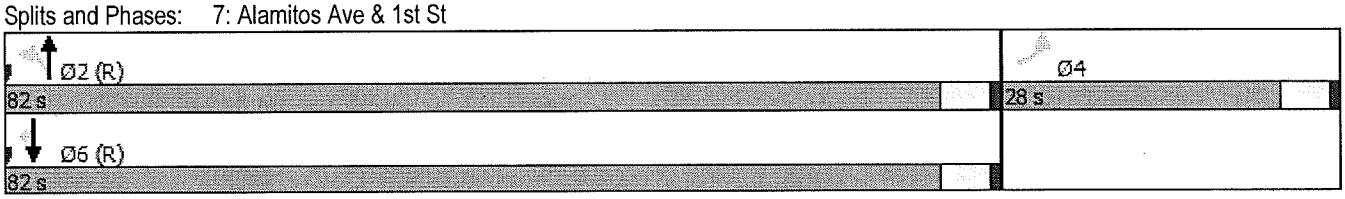
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	35	26	16	232	680	170
Future Volume (vph)	35	26	16	232	680	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	60			0
Storage Lanes	1	0	1			1
Taper Length (ft)	60		60			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.942					0.850
Flt Protected	0.972		0.950			
Satd. Flow (prot)	1706	0	1770	1863	1863	1583
Flt Permitted	0.972		0.378			
Satd. Flow (perm)	1706	0	704	1863	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	26					170
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			219	212	
Travel Time (s)	12.5			5.0	4.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	35	26	16	232	680	170
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	16	232	680	170
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (ft)	20		20	100	100	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	26.0		11.0	11.0	19.0	19.0
Total Split (s)	28.0		82.0	82.0	82.0	82.0
Total Split (%)	25.5%		74.5%	74.5%	74.5%	74.5%
Maximum Green (s)	23.0		77.0	77.0	77.0	77.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	14.0				7.0	7.0
Pedestrian Calls (#/hr)	5				5	5
Act Effct Green (s)	10.0		93.2	93.2	93.2	93.2
Actuated g/C Ratio	0.09		0.85	0.85	0.85	0.85
v/c Ratio	0.34		0.03	0.15	0.43	0.12
Control Delay	33.2		0.9	1.0	2.6	0.5
Queue Delay	0.0		0.0	0.0	0.4	0.0
Total Delay	33.2		0.9	1.0	2.9	0.5
LOS	C		A	A	A	A
Approach Delay	33.2			1.0	2.5	
Approach LOS	C			A	A	
Queue Length 50th (ft)	24		0	3	4	0
Queue Length 95th (ft)	58		m2	m20	221	13
Internal Link Dist (ft)	470			139	132	
Turn Bay Length (ft)			60			
Base Capacity (vph)	377		596	1578	1578	1366
Starvation Cap Reductn	0		0	0	397	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.16		0.03	0.15	0.58	0.12

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 109 (99%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 3.8 Intersection LOS: A
Intersection Capacity Utilization 49.1% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Alamitos Ave & 1st St



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	7	0	213	688	7
Future Volume (vph)	0	7	0	213	688	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	1861	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	1861	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	472			224	231	
Travel Time (s)	10.7			5.1	5.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	7	0	213	688	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	7	0	213	695	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 46.6% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	414	38	319	1391	50	32	69	139	42	277	383
Future Volume (vph)	100	414	38	319	1391	50	32	69	139	42	277	383
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		50	230		0	220		0	60		60
Storage Lanes	1		1	2		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.995				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	3433	3522	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.565			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	3522	0	1052	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		4				139			145
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		542			607			703			224	
Travel Time (s)		12.3			13.8			16.0			5.1	
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
Adj. Flow (vph)	100	414	38	319	1391	50	32	69	139	42	277	383
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	414	38	319	1441	0	32	69	139	42	277	383
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases			4				2		2			6

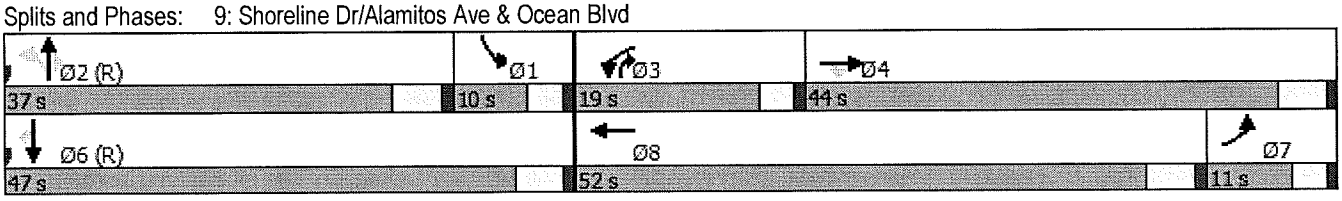
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		2	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0	10.0	36.0		36.0	36.0	10.0	10.0	36.0	36.0
Total Split (s)	11.0	44.0	44.0	19.0	52.0		37.0	37.0	19.0	10.0	47.0	47.0
Total Split (%)	10.0%	40.0%	40.0%	17.3%	47.3%		33.6%	33.6%	17.3%	9.1%	42.7%	42.7%
Maximum Green (s)	7.0	39.0	39.0	15.0	47.0		32.0	32.0	15.0	6.0	42.0	42.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0		5.0	5.0	4.0	4.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0		7.0	7.0			7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0		24.0	24.0			24.0	24.0
Pedestrian Calls (#/hr)		5	5		5		5	5			5	5
Act Effct Green (s)	7.0	40.0	40.0	14.0	47.0		36.0	36.0	52.6	6.0	42.0	42.0
Actuated g/C Ratio	0.06	0.36	0.36	0.13	0.43		0.33	0.33	0.48	0.05	0.38	0.38
v/c Ratio	0.89	0.22	0.06	0.73	0.96		0.09	0.06	0.17	0.44	0.21	0.55
Control Delay	112.2	24.9	0.2	56.5	45.9		29.1	27.5	2.5	50.5	13.1	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.2	24.9	0.2	56.5	45.9		29.1	27.5	2.5	50.5	13.1	10.6
LOS	F	C	A	E	D		C	C	A	D	B	B
Approach Delay		39.0			47.8			13.2			14.0	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	71	74	0	111	506		17	18	0	30	56	105
Queue Length 95th (ft)	#175	101	0	159	#671		42	36	27	64	54	108
Internal Link Dist (ft)		462			527			623			144	
Turn Bay Length (ft)	225		50	230			220			60		60
Base Capacity (vph)	112	1848	645	468	1507		344	1158	842	96	1351	694
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.22	0.06	0.68	0.96		0.09	0.06	0.17	0.44	0.21	0.55

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 27 (25%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 36.5 Intersection LOS: D
Intersection Capacity Utilization 81.3% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	715	39	130	702	59	97	416	755	58	329	63
Future Volume (veh/h)	37	715	39	130	702	59	97	416	755	58	329	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	37	715	39	130	702	59	97	416	755	58	329	63
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	891	49	164	1300	109	468	944	949	246	944	803
Arrive On Green	0.26	0.26	0.26	0.09	0.39	0.39	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	702	3413	186	1774	3306	278	988	1863	1583	477	1863	1583
Grp Volume(v), veh/h	37	371	383	130	376	385	97	416	755	58	329	63
Grp Sat Flow(s),veh/h/ln	702	1770	1830	1774	1770	1814	988	1863	1583	477	1863	1583
Q Serve(g_s), s	4.3	19.6	19.6	7.2	16.3	16.4	6.5	14.2	36.5	8.8	10.6	2.0
Cycle Q Clear(g_c), s	7.4	19.6	19.6	7.2	16.3	16.4	17.1	14.2	36.5	23.0	10.6	2.0
Prop In Lane	1.00		0.10	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	233	462	477	164	696	713	468	944	949	246	944	803
V/C Ratio(X)	0.16	0.80	0.80	0.79	0.54	0.54	0.21	0.44	0.80	0.24	0.35	0.08
Avail Cap(c_a), veh/h	246	495	512	497	1062	1088	468	944	949	246	944	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.53	0.53	0.53	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	34.5	34.6	44.5	23.4	23.4	19.9	15.7	15.4	22.9	14.8	12.7
Incr Delay (d2), s/veh	0.3	8.7	8.5	8.4	0.7	0.6	0.5	0.8	3.7	2.2	1.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	10.7	11.0	3.9	8.1	8.3	1.8	7.5	16.7	1.3	5.7	0.9
LnGrp Delay(d),s/veh	31.7	43.3	43.0	52.9	24.0	24.0	20.4	16.4	19.1	25.2	15.8	12.9
LnGrp LOS	C	D	D	D	C	C	C	B	B	C	B	B
Approach Vol, veh/h		791			891			1268			450	
Approach Delay, s/veh		42.6			28.2			18.3			16.6	
Approach LOS		D			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		55.7	13.2	31.1		55.7		44.3
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0		5.0
Max Green Setting (Gmax), s		30.0	28.0	28.0		30.0		60.0
Max Q Clear Time (g_c+I1), s		38.5	9.2	21.6		25.0		18.4
Green Ext Time (p_c), s		0.0	0.3	4.5		3.6		13.8

Intersection Summary	
HCM 2010 Ctrl Delay	26.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	418	0	267	9	0	13	0	835	9	8	489	0
Future Volume (veh/h)	418	0	267	9	0	13	0	835	9	8	489	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	418	0	267	9	0	13	0	835	9	8	489	0
Adj No. of Lanes	1	1	0	0	1	0	0	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	0
Cap, veh/h	604	0	538	72	15	52	0	1043	887	436	1043	0
Arrive On Green	0.23	0.00	0.34	0.06	0.00	0.06	0.00	1.00	1.00	0.74	0.74	0.00
Sat Flow, veh/h	1774	0	1583	350	252	869	0	1863	1583	650	1863	0
Grp Volume(v), veh/h	418	0	267	22	0	0	0	835	9	8	489	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1471	0	0	0	1863	1583	650	1863	0
Q Serve(g_s), s	21.3	0.0	13.4	0.0	0.0	0.0	0.0	0.0	0.0	0.3	10.3	0.0
Cycle Q Clear(g_c), s	21.3	0.0	13.4	1.2	0.0	0.0	0.0	0.0	0.0	0.3	10.3	0.0
Prop In Lane	1.00		1.00	0.41		0.59	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	604	0	538	139	0	0	0	1043	887	436	1043	0
V/C Ratio(X)	0.69	0.00	0.50	0.16	0.00	0.00	0.00	0.80	0.01	0.02	0.47	0.00
Avail Cap(c_a), veh/h	604	0	538	139	0	0	0	1043	887	436	1043	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.80	0.80	0.91	0.91	0.00
Uniform Delay (d), s/veh	31.1	0.0	26.2	44.8	0.0	0.0	0.0	0.0	0.0	5.7	6.9	0.0
Incr Delay (d2), s/veh	3.4	0.0	0.7	0.5	0.0	0.0	0.0	5.3	0.0	0.1	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	0.0	6.0	0.6	0.0	0.0	0.0	1.5	0.0	0.1	5.5	0.0
LnGrp Delay(d),s/veh	34.5	0.0	26.9	45.3	0.0	0.0	0.0	5.3	0.0	5.7	8.3	0.0
LnGrp LOS	C		C	D				A	A	A	A	
Approach Vol, veh/h		685			22			844			497	
Approach Delay, s/veh		31.6			45.3			5.2			8.3	
Approach LOS		C			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		61.0		39.0		61.0	28.0	11.0
Change Period (Y+Rc), s		5.0		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		56.0		34.0		56.0	23.0	6.0
Max Q Clear Time (g_c+I1), s		2.0		15.4		12.3	23.3	3.2
Green Ext Time (p_c), s		14.0		1.8		13.4	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	30	40	3	12	12	17	795	15	38	673	30
Future Volume (veh/h)	38	30	40	3	12	12	17	795	15	38	673	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	38	30	40	3	12	12	17	795	15	38	673	30
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	50	53	47	79	68	673	1478	28	616	1435	64
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	449	560	593	74	883	766	741	1822	34	671	1770	79
Grp Volume(v), veh/h	108	0	0	27	0	0	17	0	810	38	0	703
Grp Sat Flow(s),veh/h/ln	1602	0	0	1724	0	0	741	0	1857	671	0	1849
Q Serve(g_s), s	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.5	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.35		0.37	0.11		0.44	1.00		0.02	1.00		0.04
Lane Grp Cap(c), veh/h	191	0	0	194	0	0	673	0	1506	616	0	1499
V/C Ratio(X)	0.56	0.00	0.00	0.14	0.00	0.00	0.03	0.00	0.54	0.06	0.00	0.47
Avail Cap(c_a), veh/h	444	0	0	460	0	0	673	0	1506	616	0	1499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.64	0.00	0.64	0.91	0.00	0.91
Uniform Delay (d), s/veh	44.4	0.0	0.0	42.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	2.6	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.9	0.2	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
LnGrp Delay(d),s/veh	47.0	0.0	0.0	42.5	0.0	0.0	0.0	0.0	0.9	0.2	0.0	1.0
LnGrp LOS	D			D			A		A	A		A
Approach Vol, veh/h		108			27			827			741	
Approach Delay, s/veh		47.0			42.5			0.9			0.9	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		86.1		13.9		86.1		13.9
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		65.0		25.0		65.0		25.0
Max Q Clear Time (g_c+I1), s		2.0		8.5		2.0		3.4
Green Ext Time (p_c), s		18.9		0.6		18.9		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	4.5
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	367	42	55	204	47	39	747	145	159	513	42
Future Volume (veh/h)	44	367	42	55	204	47	39	747	145	159	513	42
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	44	367	42	55	204	47	39	747	145	159	513	42
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	217	466	396	136	366	84	625	986	191	476	1104	90
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1124	1863	1583	973	1466	338	850	1516	294	621	1699	139
Grp Volume(v), veh/h	44	367	42	55	0	251	39	0	892	159	0	555
Grp Sat Flow(s),veh/h/ln	1124	1863	1583	973	0	1803	850	0	1811	621	0	1838
Q Serve(g_s), s	3.5	18.4	2.0	5.6	0.0	12.1	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	15.7	18.4	2.0	24.0	0.0	12.1	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.16	1.00		0.08
Lane Grp Cap(c), veh/h	217	466	396	136	0	451	625	0	1177	476	0	1195
V/C Ratio(X)	0.20	0.79	0.11	0.40	0.00	0.56	0.06	0.00	0.76	0.33	0.00	0.46
Avail Cap(c_a), veh/h	217	466	396	136	0	451	625	0	1177	476	0	1195
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.71	0.00	0.71	0.87	0.00	0.87
Uniform Delay (d), s/veh	39.5	35.0	28.9	46.2	0.0	32.7	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	8.8	0.1	1.9	0.0	1.5	0.1	0.0	3.3	1.6	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	10.6	0.9	1.6	0.0	6.2	0.0	0.0	1.1	0.2	0.0	0.4
LnGrp Delay(d),s/veh	40.0	43.8	29.0	48.2	0.0	34.2	0.1	0.0	3.3	1.6	0.0	1.1
LnGrp LOS	D	D	C	D		C	A		A	A		A
Approach Vol, veh/h		453			306			931			714	
Approach Delay, s/veh		42.1			36.7			3.2			1.2	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		70.0		30.0		70.0		30.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		65.0		25.0		65.0		25.0
Max Q Clear Time (g_c+I1), s		2.0		20.4		2.0		26.0
Green Ext Time (p_c), s		21.7		1.8		21.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	205	51	117	921	190	92	404	71
Future Volume (veh/h)	0	0	0	0	205	51	117	921	190	92	404	71
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				0	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				0	205	51	117	921	190	92	404	71
Adj No. of Lanes				0	2	0	1	1	1	1	1	0
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	2	0	2	2	2	2	2	2
Cap, veh/h				0	0	0	106	1770	1504	496	1297	228
Arrive On Green				0.00	0.00	0.00	0.06	0.95	0.95	1.00	1.00	1.00
Sat Flow, veh/h					0		1774	1863	1583	505	1544	271
Grp Volume(v), veh/h					0.0		117	921	190	92	0	475
Grp Sat Flow(s),veh/h/ln							1774	1863	1583	505	0	1815
Q Serve(g_s), s							6.0	4.9	0.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s							6.0	4.9	0.7	0.0	0.0	0.0
Prop In Lane							1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h							106	1770	1504	496	0	1524
V/C Ratio(X)							1.10	0.52	0.13	0.19	0.00	0.31
Avail Cap(c_a), veh/h							106	1770	1504	496	0	1524
HCM Platoon Ratio							1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)							0.56	0.56	0.56	0.90	0.00	0.90
Uniform Delay (d), s/veh							47.0	0.2	0.1	0.0	0.0	0.0
Incr Delay (d2), s/veh							94.3	0.6	0.1	0.7	0.0	0.5
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							5.7	2.3	0.3	0.1	0.0	0.2
LnGrp Delay(d),s/veh							141.3	0.9	0.2	0.7	0.0	0.5
LnGrp LOS							F	A	A	A		A
Approach Vol, veh/h								1228			567	
Approach Delay, s/veh								14.1			0.5	
Approach LOS								B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		
Phs Duration (G+Y+Rc), s		100.0			11.0	89.0		
Change Period (Y+Rc), s		5.0			5.0	5.0		
Max Green Setting (Gmax), s		64.0			6.0	53.0		
Max Q Clear Time (g_c+I1), s		6.9			8.0	2.0		
Green Ext Time (p_c), s		20.2			0.0	19.5		

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	365	849	50	126	0	156	0	737	223	87	284	0
Future Volume (veh/h)	365	849	50	126	0	156	0	737	223	87	284	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	0	1863	0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	365	849	50	126	0	156	0	737	223	87	284	0
Adj No. of Lanes	1	2	1	1	0	1	0	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	469	935	418	0	0	0	0	1184	1007	303	1184	0
Arrive On Green	0.26	0.26	0.26	0.00	0.00	0.00	0.00	0.64	0.64	0.21	0.21	0.00
Sat Flow, veh/h	1774	3539	1583		0		0	1863	1583	583	1863	0
Grp Volume(v), veh/h	365	849	50		0.0		0	737	223	87	284	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583				0	1863	1583	583	1863	0
Q Serve(g_s), s	19.1	23.2	2.4				0.0	23.8	6.0	13.6	12.7	0.0
Cycle Q Clear(g_c), s	19.1	23.2	2.4				0.0	23.8	6.0	37.5	12.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	469	935	418				0	1184	1007	303	1184	0
V/C Ratio(X)	0.78	0.91	0.12				0.00	0.62	0.22	0.29	0.24	0.00
Avail Cap(c_a), veh/h	479	956	427				0	1184	1007	303	1184	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.90	0.90	0.00
Uniform Delay (d), s/veh	34.1	35.6	27.9				0.0	11.0	7.7	40.1	19.4	0.0
Incr Delay (d2), s/veh	7.8	12.1	0.1				0.0	2.5	0.5	2.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	12.9	1.1				0.0	12.9	2.7	2.4	6.7	0.0
LnGrp Delay(d),s/veh	41.9	47.7	28.1				0.0	13.4	8.2	42.2	19.8	0.0
LnGrp LOS	D	D	C					B	A	D	B	
Approach Vol, veh/h		1264						960			371	
Approach Delay, s/veh		45.3						12.2			25.1	
Approach LOS		D						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		68.6		31.4		68.6		
Change Period (Y+Rc), s		5.0		5.0		5.0		
Max Green Setting (Gmax), s		49.0		27.0		49.0		
Max Q Clear Time (g_c+I1), s		25.8		25.2		39.5		
Green Ext Time (p_c), s		9.6		1.2		5.6		

Intersection Summary	
HCM 2010 Ctrl Delay	30.2
HCM 2010 LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	123	46	19	836	359	90
Future Volume (vph)	123	46	19	836	359	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1731		1770	1863	1863	1583
Flt Permitted	0.96		0.54	1.00	1.00	1.00
Satd. Flow (perm)	1731		1004	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	123	46	19	836	359	90
RTOR Reduction (vph)	15	0	0	0	0	22
Lane Group Flow (vph)	154	0	19	836	359	68
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	14.4		75.6	75.6	75.6	75.6
Effective Green, g (s)	14.4		75.6	75.6	75.6	75.6
Actuated g/C Ratio	0.14		0.76	0.76	0.76	0.76
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	249		759	1408	1408	1196
v/s Ratio Prot				c0.45	0.19	
v/s Ratio Perm	c0.09		0.02			0.04
v/c Ratio	0.62		0.03	0.59	0.25	0.06
Uniform Delay, d1	40.2		3.0	5.4	3.7	3.1
Progression Factor	1.00		0.35	0.65	0.34	0.09
Incremental Delay, d2	4.7		0.0	1.5	0.4	0.1
Delay (s)	45.0		1.1	5.0	1.7	0.4
Level of Service	D		A	A	A	A
Approach Delay (s)	45.0			4.9	1.4	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱		↑↑	↑	
Traffic Vol, veh/h	0	15	0	816	378	10
Future Vol, veh/h	0	15	0	816	378	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	0	816	378	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	383	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	664	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	664	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	664	-	-
HCM Lane V/C Ratio	-	0.023	-	-
HCM Control Delay (s)	-	10.5	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	1407	51	178	692	87	42	453	422	65	122	206
Future Volume (veh/h)	300	1407	51	178	692	87	42	453	422	65	122	206
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	300	1407	0	178	692	87	42	453	422	65	122	206
Adj No. of Lanes	1	3	1	2	2	0	1	2	1	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	1716	534	245	819	103	376	1097	604	162	1597	715
Arrive On Green	0.14	0.34	0.00	0.07	0.26	0.26	0.31	0.31	0.31	0.09	0.45	0.45
Sat Flow, veh/h	1774	5085	1583	3442	3165	398	1048	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	300	1407	0	178	387	392	42	453	422	65	122	206
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1770	1793	1048	1770	1583	1774	1770	1583
Q Serve(g_s), s	14.0	25.3	0.0	5.1	20.7	20.8	3.0	10.1	14.1	3.5	2.0	8.2
Cycle Q Clear(g_c), s	14.0	25.3	0.0	5.1	20.7	20.8	4.9	10.1	14.1	3.5	2.0	8.2
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	1716	534	245	458	464	376	1097	604	162	1597	715
V/C Ratio(X)	1.21	0.82	0.00	0.73	0.84	0.85	0.11	0.41	0.70	0.40	0.08	0.29
Avail Cap(c_a), veh/h	248	1831	570	310	549	556	376	1097	604	162	1597	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	30.3	0.0	45.5	35.2	35.2	26.2	27.3	11.6	42.9	15.6	17.3
Incr Delay (d2), s/veh	125.1	2.9	0.0	6.2	10.0	10.0	0.6	1.1	6.6	1.6	0.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.5	12.3	0.0	2.6	11.4	11.5	0.9	5.1	7.2	1.8	1.0	3.8
LnGrp Delay(d),s/veh	168.1	33.3	0.0	51.7	45.2	45.2	26.8	28.4	18.2	44.5	15.7	18.3
LnGrp LOS	F	C		D	D	D	C	C	B	D	B	B
Approach Vol, veh/h		1707			957			917			393	
Approach Delay, s/veh		57.0			46.4			23.7			21.8	
Approach LOS		E			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	14.1	36.0	11.1	38.8		50.1	19.0	30.9
Change Period (Y+Rc), s	5.0	* 5	4.0	5.0		5.0	5.0	* 5
Max Green Setting (Gmax), s	6.0	* 31	9.0	36.0		41.0	14.0	* 31
Max Q Clear Time (g_c+I1), s	5.5	16.1	7.1	27.3		10.2	16.0	22.8
Green Ext Time (p_c), s	0.1	4.3	0.1	6.2		1.7	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	43.3
HCM 2010 LOS	D

Notes

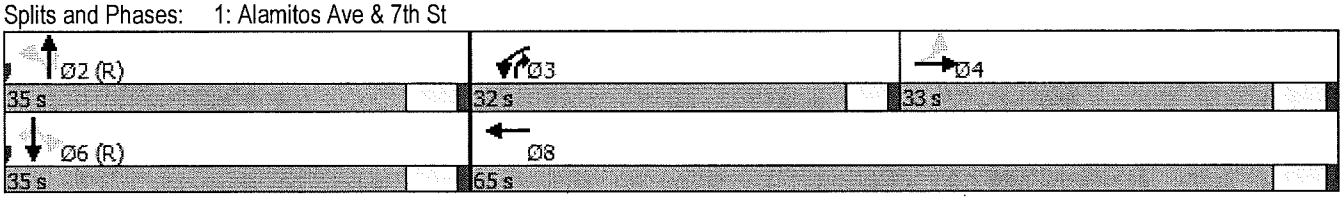
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	715	39	130	702	59	97	416	755	58	329	63
Future Volume (vph)	37	715	39	130	702	59	97	416	755	58	329	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	300		0	145		60	130		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.988				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3511	0	1770	3497	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.363			0.950			0.432			0.334		
Satd. Flow (perm)	676	3511	0	1770	3497	0	805	1863	1583	622	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			16				35			65
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		507			578			527			677	
Travel Time (s)		11.5			13.1			12.0			15.4	
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
Adj. Flow (vph)	37	715	39	130	702	59	97	416	755	58	329	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	754	0	130	761	0	97	416	755	58	329	63
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4						2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		3	8		2	2	3	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	33.0	33.0		10.0	26.0		30.0	30.0	10.0	30.0	30.0	30.0
Total Split (s)	33.0	33.0		32.0	65.0		35.0	35.0	32.0	35.0	35.0	35.0
Total Split (%)	33.0%	33.0%		32.0%	65.0%		35.0%	35.0%	32.0%	35.0%	35.0%	35.0%
Maximum Green (s)	28.0	28.0		28.0	60.0		30.0	30.0	28.0	30.0	30.0	30.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0			14.0		18.0	18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)	5	5			5		5	5		5	5	5
Act Effct Green (s)	26.3	26.3		21.5	51.8		38.2	38.2	64.7	38.2	38.2	38.2
Actuated g/C Ratio	0.26	0.26		0.22	0.52		0.38	0.38	0.65	0.38	0.38	0.38
v/c Ratio	0.21	0.81		0.34	0.42		0.32	0.59	0.73	0.24	0.46	0.10
Control Delay	31.3	42.0		33.5	14.6		29.8	30.6	14.9	29.7	28.8	6.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.5	0.0	0.0	0.0
Total Delay	31.3	42.0		33.5	14.6		29.8	30.6	15.4	29.7	28.8	6.9
LOS	C	D		C	B		C	C	B	C	C	A
Approach Delay		41.5			17.3			21.5			25.9	
Approach LOS		D			B			C			C	
Queue Length 50th (ft)	18	228		66	122		45	215	402	28	174	0
Queue Length 95th (ft)	46	300		115	154		m73	m328	m312	66	269	29
Internal Link Dist (ft)		427			498			447			597	
Turn Bay Length (ft)	55			300			145		60	130		
Base Capacity (vph)	190	990		495	2104		307	711	1137	237	711	644
Starvation Cap Reductn	0	0		0	0		0	0	110	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.76		0.26	0.36		0.32	0.59	0.74	0.24	0.46	0.10

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 92 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 25.7 Intersection LOS: C
Intersection Capacity Utilization 84.4% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Alamitos Ave & 7th St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	418	0	267	9	0	13	0	835	9	8	489	0
Future Volume (vph)	418	0	267	9	0	13	0	835	9	8	489	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		60	225		0
Storage Lanes	1		0	0		0	0		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.920				0.850			
Flt Protected	0.950				0.980					0.950		
Satd. Flow (prot)	1770	1583	0	0	1679	0	0	1863	1583	1770	1863	0
Flt Permitted	0.619									0.179		
Satd. Flow (perm)	1153	1583	0	0	1714	0	0	1863	1583	333	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		352			76				76			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		536			543			380			527	
Travel Time (s)		12.2			12.3			8.6			12.0	
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
Adj. Flow (vph)	418	0	267	9	0	13	0	835	9	8	489	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	418	267	0	0	22	0	0	835	9	8	489	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2			2	1	1	2	
Detector Template	Left	Thru		Left	Thru			Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100			100	20	20	100	
Trailing Detector (ft)	0	0		0	0			0	0	0	0	
Detector 1 Position(ft)	0	0		0	0			0	0	0	0	
Detector 1 Size(ft)	20	6		20	6			6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA			NA	Perm	Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8					2	6		

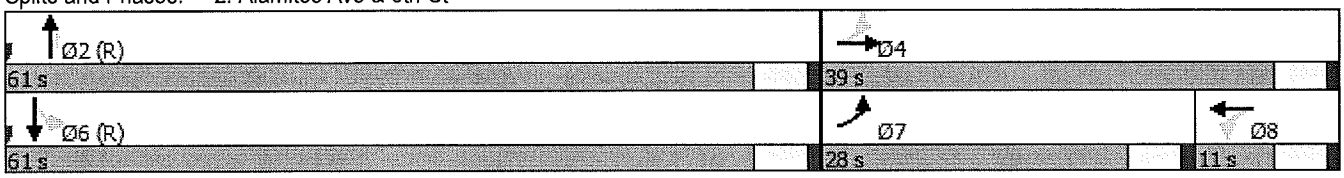
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8			2	2	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Minimum Split (s)	11.0	26.0		11.0	11.0			19.0	19.0	11.0	11.0	
Total Split (s)	28.0	39.0		11.0	11.0			61.0	61.0	61.0	61.0	
Total Split (%)	28.0%	39.0%		11.0%	11.0%			61.0%	61.0%	61.0%	61.0%	
Maximum Green (s)	23.0	34.0		6.0	6.0			56.0	56.0	56.0	56.0	
Yellow Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0			1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0	5.0	5.0	5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None			C-Max	C-Max	C-Max	C-Max	
Walk Time (s)		7.0						7.0	7.0			
Flash Dont Walk (s)		14.0						7.0	7.0			
Pedestrian Calls (#/hr)		5						5	5			
Act Effct Green (s)	26.9	26.9			6.0			63.1	63.1	63.1	63.1	
Actuated g/C Ratio	0.27	0.27			0.06			0.63	0.63	0.63	0.63	
v/c Ratio	0.93	0.39			0.13			0.71	0.01	0.04	0.42	
Control Delay	63.0	2.4			1.5			15.0	0.0	2.6	4.0	
Queue Delay	0.0	0.0			0.0			0.1	0.0	0.0	0.4	
Total Delay	63.0	2.4			1.5			15.1	0.0	2.6	4.4	
LOS	E	A			A			B	A	A	A	
Approach Delay		39.4			1.5			14.9			4.3	
Approach LOS		D			A			B			A	
Queue Length 50th (ft)	~286	0			0			292	0	0	29	
Queue Length 95th (ft)	#362	14			0			341	m0	m1	45	
Internal Link Dist (ft)		456			463			300			447	
Turn Bay Length (ft)									60	225		
Base Capacity (vph)	457	770			174			1175	1026	210	1175	
Starvation Cap Reductn	0	0			0			21	0	0	273	
Spillback Cap Reductn	0	0			0			0	0	0	0	
Storage Cap Reductn	0	0			0			0	0	0	0	
Reduced v/c Ratio	0.91	0.35			0.13			0.72	0.01	0.04	0.54	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 2 (2%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 20.4 Intersection LOS: C
Intersection Capacity Utilization 82.1% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Alamitos Ave & 6th St



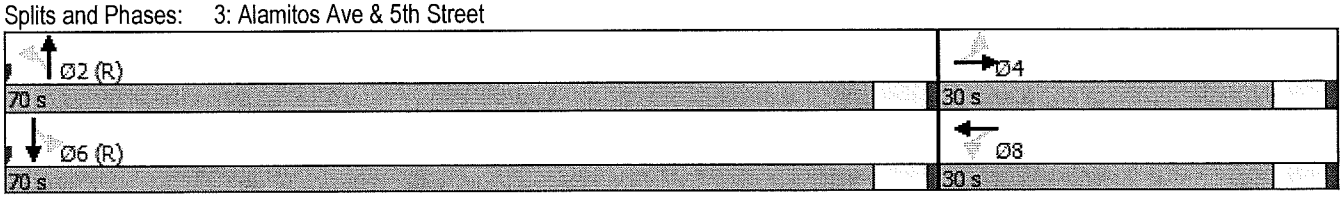
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	30	40	3	12	12	17	795	15	38	673	30
Future Volume (vph)	38	30	40	3	12	12	17	795	15	38	673	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.950			0.940			0.997			0.994	
Flt Protected		0.983			0.994		0.950			0.950		
Satd. Flow (prot)	0	1740	0	0	1740	0	1770	1857	0	1770	1852	0
Flt Permitted		0.874			0.968		0.349			0.298		
Satd. Flow (perm)	0	1547	0	0	1695	0	650	1857	0	555	1852	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			12			2			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			618			468			380	
Travel Time (s)		12.0			14.0			10.6			8.6	
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
Adj. Flow (vph)	38	30	40	3	12	12	17	795	15	38	673	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	108	0	0	27	0	17	810	0	38	703	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	11.0		30.0	30.0		19.0	19.0		19.0	19.0	
Total Split (s)	30.0	30.0		30.0	30.0		70.0	70.0		70.0	70.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	25.0	25.0		25.0	25.0		65.0	65.0		65.0	65.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				18.0	18.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)				5	5		5	5		5	5	
Act Effct Green (s)		12.5			12.5		77.5	77.5		77.5	77.5	
Actuated g/C Ratio		0.12			0.12		0.78	0.78		0.78	0.78	
v/c Ratio		0.50			0.12		0.03	0.56		0.09	0.49	
Control Delay		35.9			24.2		4.0	4.9		2.2	2.9	
Queue Delay		0.0			0.0		0.0	0.3		0.0	0.1	
Total Delay		35.9			24.2		4.0	5.2		2.2	2.9	
LOS		D			C		A	A		A	A	
Approach Delay		35.9			24.2			5.2			2.9	
Approach LOS		D			C			A			A	
Queue Length 50th (ft)		49			9		2	123		1	29	
Queue Length 95th (ft)		87			29		m4	172		8	90	
Internal Link Dist (ft)		450			538			388			300	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		407			432		503	1439		430	1436	
Starvation Cap Reductn		0			0		0	173		0	104	
Spillback Cap Reductn		0			0		0	44		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.27			0.06		0.03	0.64		0.09	0.53	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 6.4 Intersection LOS: A
Intersection Capacity Utilization 63.9% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Alamitos Ave & 5th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	367	42	55	204	47	39	747	145	159	513	42
Future Volume (vph)	44	367	42	55	204	47	39	747	145	159	513	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	50		0	115		0	155		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.972			0.976			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1811	0	1770	1818	0	1770	1842	0
Flt Permitted	0.407			0.195			0.390			0.197		
Satd. Flow (perm)	758	1863	1583	363	1811	0	726	1818	0	367	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			42		11			20			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		549			626			397			468	
Travel Time (s)		12.5			14.2			9.0			10.6	
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
Adj. Flow (vph)	44	367	42	55	204	47	39	747	145	159	513	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	367	42	55	251	0	39	892	0	159	555	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		

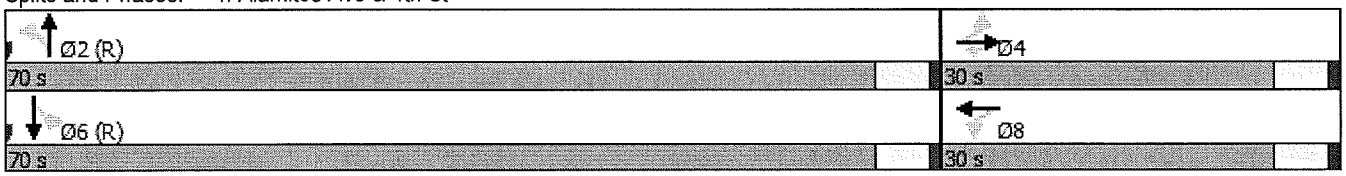
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		23.0	23.0		26.0	26.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		70.0	70.0		70.0	70.0	
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0		65.0	65.0		65.0	65.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0		11.0	11.0		14.0	14.0	
Pedestrian Calls (#/hr)	5	5	5	5	5		5	5		5	5	
Act Effct Green (s)	23.0	23.0	23.0	23.0	23.0		67.0	67.0		67.0	67.0	
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23		0.67	0.67		0.67	0.67	
v/c Ratio	0.25	0.86	0.11	0.66	0.59		0.08	0.73		0.65	0.45	
Control Delay	34.7	56.8	9.8	72.3	38.6		3.1	8.1		17.5	3.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.2		0.0	0.2	
Total Delay	34.7	56.8	9.8	72.3	38.6		3.1	8.4		17.5	3.7	
LOS	C	E	A	E	D		A	A		B	A	
Approach Delay		50.3			44.6			8.1			6.8	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)	22	219	0	31	133		5	267		21	66	
Queue Length 95th (ft)	54	#356	26	#93	213		m4	59		#178	42	
Internal Link Dist (ft)		469			546			317			388	
Turn Bay Length (ft)	55			50			115			155		
Base Capacity (vph)	189	465	427	90	461		486	1224		245	1237	
Starvation Cap Reductn	0	0	0	0	0		0	43		0	174	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.23	0.79	0.10	0.61	0.54		0.08	0.76		0.65	0.52	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 4 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 20.3 Intersection LOS: C
Intersection Capacity Utilization 97.9% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Alamitos Ave & 4th St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	205	51	117	921	190	92	404	71
Future Volume (vph)	0	0	0	0	205	51	117	921	190	92	404	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	60		0	205		60	110		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.970				0.850		0.978	
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	0	0	3433	0	1770	1863	1583	1770	1822	0
Flt Permitted							0.950			0.313		
Satd. Flow (perm)	0	0	0	0	3433	0	1770	1863	1583	583	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					30				70		13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			470			551			397	
Travel Time (s)		12.0			10.7			12.5			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
Adj. Flow (vph)	0	0	0	0	205	51	117	921	190	92	404	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	256	0	117	921	190	92	475	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					2		1	2	1	1	2	
Detector Template					Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)					100		20	100	20	20	100	
Trailing Detector (ft)					0		0	0	0	0	0	
Detector 1 Position(ft)					0		0	0	0	0	0	
Detector 1 Size(ft)					6		20	6	20	20	6	
Detector 1 Type					Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type					NA		Prot	NA	Perm	Perm	NA	
Protected Phases					8		5	2			6	
Permitted Phases									2	6		

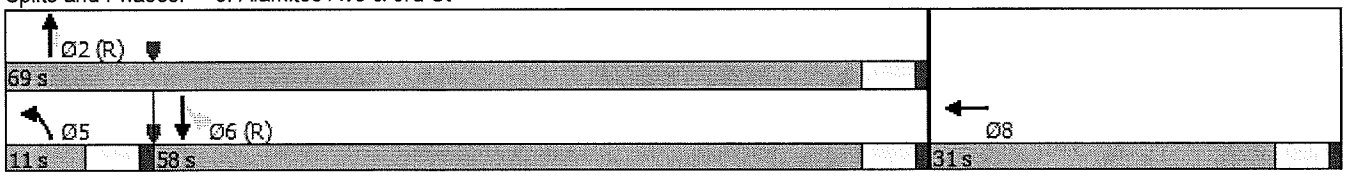
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase					8		5	2	2	6	6	
Switch Phase												
Minimum Initial (s)					6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)					30.0		11.0	23.0	23.0	19.0	19.0	
Total Split (s)					31.0		11.0	69.0	69.0	58.0	58.0	
Total Split (%)					31.0%		11.0%	69.0%	69.0%	58.0%	58.0%	
Maximum Green (s)					26.0		6.0	64.0	64.0	53.0	53.0	
Yellow Time (s)					4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)					1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)					5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)					3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode					None		None	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)					7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)					18.0			11.0	11.0	7.0	7.0	
Pedestrian Calls (#/hr)					5			5	5	5	5	
Act Effct Green (s)					13.9		13.0	76.1	76.1	58.1	58.1	
Actuated g/C Ratio					0.14		0.13	0.76	0.76	0.58	0.58	
v/c Ratio					0.51		0.51	0.65	0.16	0.27	0.45	
Control Delay					37.6		45.3	9.0	3.5	12.1	11.1	
Queue Delay					0.0		0.0	1.6	0.0	0.0	0.3	
Total Delay					37.6		45.3	10.6	3.5	12.1	11.5	
LOS					D		D	B	A	B	B	
Approach Delay					37.6			12.8			11.6	
Approach LOS					D			B			B	
Queue Length 50th (ft)					72		68	136	15	20	107	
Queue Length 95th (ft)					96		m#123	484	m32	m49	180	
Internal Link Dist (ft)		450			390			471			317	
Turn Bay Length (ft)							205		60	110		
Base Capacity (vph)					914		230	1418	1221	338	1064	
Starvation Cap Reductn					0		0	233	0	0	192	
Spillback Cap Reductn					2		0	310	0	0	0	
Storage Cap Reductn					0		0	0	0	0	0	
Reduced v/c Ratio					0.28		0.51	0.83	0.16	0.27	0.54	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 98 (98%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 15.6 Intersection LOS: B
Intersection Capacity Utilization 73.4% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Alamitos Ave & 3rd St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	365	849	50	126	0	156	0	737	223	87	284	0
Future Volume (vph)	365	849	50	126	0	156	0	737	223	87	284	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		50	0		0	0		60	120		0
Storage Lanes	1		1	1		1	0		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1770	3539	1583	1770	0	1583	0	1863	1583	1770	1863	0
Flt Permitted	0.950			0.950						0.150		
Satd. Flow (perm)	1770	3539	1583	1770	0	1583	0	1863	1583	279	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			156			76			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			630			215			551	
Travel Time (s)		13.9			14.3			4.9			12.5	
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
Adj. Flow (vph)	365	849	50	126	0	156	0	737	223	87	284	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	365	849	50	126	0	156	0	737	223	87	284	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1		1		2	1	1	2	
Detector Template	Left	Thru	Right	Left		Right		Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20		20		100	20	20	100	
Trailing Detector (ft)	0	0	0	0		0		0	0	0	0	
Detector 1 Position(ft)	0	0	0	0		0		0	0	0	0	
Detector 1 Size(ft)	20	6	20	20		20		6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm	Prot		Perm		NA	Perm	Perm	NA	
Protected Phases	4	4		8				2			6	
Permitted Phases			4			8			2	6		

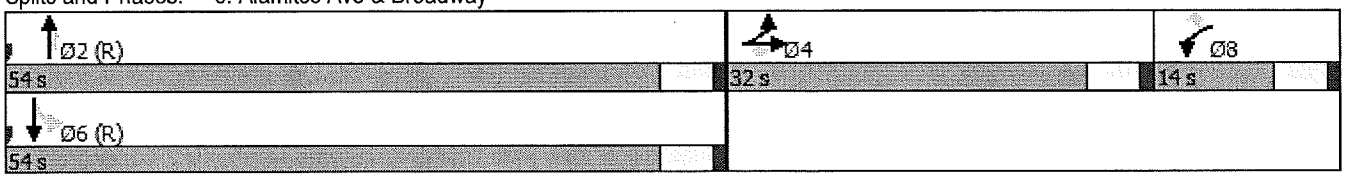
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8		8		2	2	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0		6.0		6.0	6.0	6.0	6.0	
Minimum Split (s)	23.0	23.0	23.0	11.0		11.0		26.0	26.0	30.0	30.0	
Total Split (s)	32.0	32.0	32.0	14.0		14.0		54.0	54.0	54.0	54.0	
Total Split (%)	32.0%	32.0%	32.0%	14.0%		14.0%		54.0%	54.0%	54.0%	54.0%	
Maximum Green (s)	27.0	27.0	27.0	9.0		9.0		49.0	49.0	49.0	49.0	
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0		5.0	5.0	5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None		None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0					14.0	14.0	18.0	18.0	
Pedestrian Calls (#/hr)	5	5	5					5	5	5	5	
Act Effct Green (s)	26.8	26.8	26.8	8.9		8.9		49.2	49.2	49.2	49.2	
Actuated g/C Ratio	0.27	0.27	0.27	0.09		0.09		0.49	0.49	0.49	0.49	
v/c Ratio	0.77	0.89	0.10	0.80		0.55		0.80	0.27	0.64	0.31	
Control Delay	46.1	48.6	3.4	79.2		15.1		16.6	3.3	28.6	5.2	
Queue Delay	0.3	0.0	0.0	0.0		2.3		3.0	0.0	0.0	0.0	
Total Delay	46.4	48.6	3.4	79.2		17.4		19.6	3.3	28.6	5.2	
LOS	D	D	A	E		B		B	A	C	A	
Approach Delay		46.2			45.0			15.8			10.7	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	214	273	0	80		0		276	4	16	10	
Queue Length 95th (ft)	#347	#382	15	#178		60		384	12	#122	23	
Internal Link Dist (ft)		530			550			135			471	
Turn Bay Length (ft)	120		50						60	120		
Base Capacity (vph)	477	955	482	159		284		917	818	137	917	
Starvation Cap Reductn	0	0	0	0		0		99	0	0	0	
Spillback Cap Reductn	7	0	0	0		52		0	0	0	0	
Storage Cap Reductn	0	0	0	0		0		0	0	0	0	
Reduced v/c Ratio	0.78	0.89	0.10	0.79		0.67		0.90	0.27	0.64	0.31	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 10 (10%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 31.4 Intersection LOS: C
Intersection Capacity Utilization 90.1% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: Alamitos Ave & Broadway



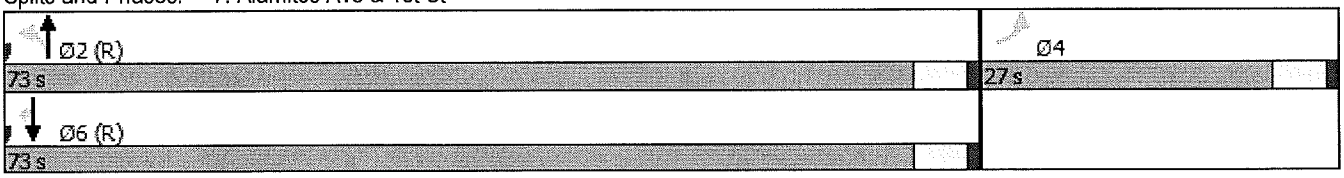
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	123	46	19	836	359	90
Future Volume (vph)	123	46	19	836	359	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	60			0
Storage Lanes	1	0	1			1
Taper Length (ft)	60		60			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.963					0.850
Flt Protected	0.965		0.950			
Satd. Flow (prot)	1731	0	1770	1863	1863	1583
Flt Permitted	0.965		0.539			
Satd. Flow (perm)	1731	0	1004	1863	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	17					90
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			219	212	
Travel Time (s)	12.5			5.0	4.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	123	46	19	836	359	90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	169	0	19	836	359	90
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (ft)	20		20	100	100	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	26.0		11.0	11.0	19.0	19.0
Total Split (s)	27.0		73.0	73.0	73.0	73.0
Total Split (%)	27.0%		73.0%	73.0%	73.0%	73.0%
Maximum Green (s)	22.0		68.0	68.0	68.0	68.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	14.0				7.0	7.0
Pedestrian Calls (#/hr)	5				5	5
Act Effct Green (s)	14.4		75.6	75.6	75.6	75.6
Actuated g/C Ratio	0.14		0.76	0.76	0.76	0.76
v/c Ratio	0.65		0.03	0.59	0.25	0.07
Control Delay	46.8		1.5	5.7	1.9	0.2
Queue Delay	0.0		0.0	0.5	0.2	0.0
Total Delay	46.8		1.5	6.3	2.1	0.2
LOS	D		A	A	A	A
Approach Delay	46.8			6.2	1.7	
Approach LOS	D			A	A	
Queue Length 50th (ft)	93		1	119	13	0
Queue Length 95th (ft)	149		m2	m111	m36	m0
Internal Link Dist (ft)	470			139	132	
Turn Bay Length (ft)			60			
Base Capacity (vph)	394		759	1409	1409	1219
Starvation Cap Reductn	0		0	229	488	0
Spillback Cap Reductn	0		0	69	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.43		0.03	0.71	0.39	0.07

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 95 (95%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 9.5 Intersection LOS: A
Intersection Capacity Utilization 62.0% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Alamitos Ave & 1st St



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	15	0	816	378	10
Future Volume (vph)	0	15	0	816	378	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt		0.865			0.997	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	1857	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	1857	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	472			224	231	
Travel Time (s)	10.7			5.1	5.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	15	0	816	378	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	15	0	816	388	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 30.5% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	1407	51	178	692	87	42	453	422	65	122	206
Future Volume (vph)	300	1407	51	178	692	87	42	453	422	65	122	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		50	230		0	220		0	60		60
Storage Lanes	1		1	2		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.983				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	3433	3479	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.675			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	3479	0	1257	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120		14				131			206
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		542			607			703			224	
Travel Time (s)		12.3			13.8			16.0			5.1	
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
Adj. Flow (vph)	300	1407	51	178	692	87	42	453	422	65	122	206
Shared Lane Traffic (%)												
Lane Group Flow (vph)	300	1407	51	178	779	0	42	453	422	65	122	206
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases			4				2		2			6

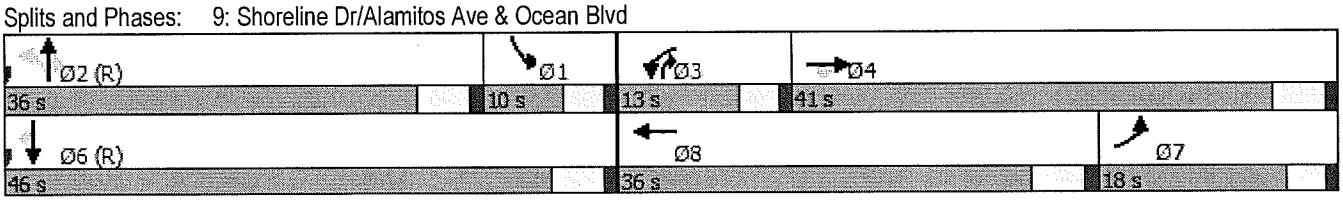
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		2	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0	10.0	36.0		36.0	36.0	10.0	10.0	36.0	36.0
Total Split (s)	18.0	41.0	41.0	13.0	36.0		36.0	36.0	13.0	10.0	46.0	46.0
Total Split (%)	18.0%	41.0%	41.0%	13.0%	36.0%		36.0%	36.0%	13.0%	10.0%	46.0%	46.0%
Maximum Green (s)	14.0	36.0	36.0	9.0	31.0		31.0	31.0	9.0	6.0	41.0	41.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0		5.0	5.0	4.0	4.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0		7.0	7.0			7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0		24.0	24.0			24.0	24.0
Pedestrian Calls (#/hr)		5	5		5		5	5			5	5
Act Effct Green (s)	17.1	36.3	36.3	8.7	27.9		33.0	33.0	43.5	6.0	41.0	41.0
Actuated g/C Ratio	0.17	0.36	0.36	0.09	0.28		0.33	0.33	0.44	0.06	0.41	0.41
v/c Ratio	1.00	0.76	0.08	0.60	0.79		0.10	0.39	0.55	0.61	0.08	0.27
Control Delay	95.2	31.5	0.2	52.7	39.1		25.6	27.6	12.8	66.1	17.4	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.2	31.5	0.2	52.7	39.1		25.6	27.6	12.8	66.1	17.4	4.2
LOS	F	C	A	D	D		C	C	B	E	B	A
Approach Delay		41.4			41.6			20.7			18.5	
Approach LOS		D			D			C			B	
Queue Length 50th (ft)	~216	286	0	57	232		19	119	100	38	20	9
Queue Length 95th (ft)	#400	344	0	92	295		45	165	173	#103	36	29
Internal Link Dist (ft)		462			527			623			144	
Turn Bay Length (ft)	225		50	230			220			60		60
Base Capacity (vph)	301	1844	650	308	1088		414	1168	767	106	1450	770
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.76	0.08	0.58	0.72		0.10	0.39	0.55	0.61	0.08	0.27

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 4 (4%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 34.5 Intersection LOS: C
Intersection Capacity Utilization 71.0% ICU Level of Service C
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd



APPENDIX B-V

YEAR 2020 CUMULATIVE TRAFFIC CONDITIONS (ICU METHODOLOGY)

AM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Alamitos Avenue at 7th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.004
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Alamitos Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	56	478	499	58	556	65	115	462	114	467	1208	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	56	478	499	58	556	65	115	462	114	467	1208	60
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	56	478	499	58	556	65	115	462	114	467	1208	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	56	478	499	58	556	65	115	462	114	467	1208	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	478	499	58	556	65	115	462	114	467	1208	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	56	478	499	58	556	65	115	462	114	467	1208	60
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.60	0.40	1.00	1.91	0.09
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	2567	633	1600	3049	151
Capacity Analysis Module:												
Vol/Sat:	0.04	0.30	0.31	0.04	0.35	0.04	0.07	0.18	0.18	0.29	0.40	0.40
Crit Moves:	****				****			****		****		

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AM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Alamitos Avenue at 6th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.626
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	B

Street Name:	Alamitos Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permit+Prot			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	0	1 0	0 0	1!	0 0
Volume Module:												
Base Vol:	50	858	9	5	953	182	151	14	49	10	5	26
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	858	9	5	953	182	151	14	49	10	5	26
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	858	9	5	953	182	151	14	49	10	5	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	858	9	5	953	182	151	14	49	10	5	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	858	9	5	953	182	151	14	49	10	5	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	858	9	5	953	182	151	14	49	10	5	26
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.98	0.02	1.00	1.68	0.32	1.00	0.22	0.78	0.24	0.12	0.64
Final Sat.:	1600	3167	33	1600	2687	513	1600	356	1244	390	195	1015
Capacity Analysis Module:												
Vol/Sat:	0.03	0.27	0.27	0.00	0.35	0.35	0.09	0.04	0.04	0.03	0.03	0.03
Crit Moves:	****				****		****				****	

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AM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Alamitos Avenue at 5th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.527
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	A

Street Name:	Alamitos Avenue						5th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	52	869	7	24	931	81	52	22	28	5	43	26
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	52	869	7	24	931	81	52	22	28	5	43	26
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	52	869	7	24	931	81	52	22	28	5	43	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	52	869	7	24	931	81	52	22	28	5	43	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	869	7	24	931	81	52	22	28	5	43	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	52	869	7	24	931	81	52	22	28	5	43	26
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.98	0.02	1.00	1.84	0.16	0.51	0.22	0.27	0.07	0.58	0.35
Final Sat.:	1600	3174	26	1600	2944	256	816	345	439	108	930	562
Capacity Analysis Module:												
Vol/Sat:	0.03	0.27	0.27	0.02	0.32	0.32	0.03	0.06	0.06	0.00	0.05	0.05
Crit Moves:	****				****		****				****	

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AM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Alamitos Avenue at 4th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.787
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	64	Level Of Service:	C

Street Name:	Alamitos Avenue						4th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	1 1	0	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	90	814	46	98	819	44	46	206	23	192	455	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	814	46	98	819	44	46	206	23	192	455	77
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	814	46	98	819	44	46	206	23	192	455	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	814	46	98	819	44	46	206	23	192	455	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	814	46	98	819	44	46	206	23	192	455	77
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	814	46	98	819	44	46	206	23	192	455	77
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.89	0.11	1.00	1.90	0.10	1.00	1.00	1.00	1.00	0.86	0.14
Final Sat.:	1600	3029	171	1600	3037	163	1600	1600	1600	1600	1368	232
Capacity Analysis Module:												
Vol/Sat:	0.06	0.27	0.27	0.06	0.27	0.27	0.03	0.13	0.01	0.12	0.33	0.33
Crit Moves:	****				****		****				****	

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AM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alamitos Avenue at 3rd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.014
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Alamitos Avenue						3rd Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	1 0	1	0 0	0 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	342	782	26	31	670	253	0	0	0	0	669	72
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	342	782	26	31	670	253	0	0	0	0	669	72
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	342	782	26	31	670	253	0	0	0	0	669	72
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	342	782	26	31	670	253	0	0	0	0	669	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	342	782	26	31	670	253	0	0	0	0	669	72
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	342	782	26	31	670	253	0	0	0	0	669	72
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.94	0.06	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.81	0.19
Final Sat.:	1600	3097	103	1600	1600	1600	0	0	0	0	2889	311
Capacity Analysis Module:												
Vol/Sat:	0.21	0.25	0.25	0.02	0.42	0.16	0.00	0.00	0.00	0.00	0.23	0.23
Crit Moves:	****				****							****

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AM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Alamitos Avenue at Broadway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.859
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	93	Level Of Service:	D

Street Name:	Alamitos Avenue						Broadway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 1	0	1 0	1 0	0	2 0	2 0	1	1 0	0 0	1
Volume Module:												
Base Vol:	0	588	46	40	629	0	204	257	34	377	0	329
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	588	46	40	629	0	204	257	34	377	0	329
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	588	46	40	629	0	204	257	34	377	0	329
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	588	46	40	629	0	204	257	34	377	0	329
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	588	46	40	629	0	204	257	34	377	0	329
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	588	46	40	629	0	204	257	34	377	0	329
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.85	0.15	1.00	1.00	0.00	2.00	2.00	1.00	1.00	0.00	1.00
Final Sat.:	0	2968	232	1600	1600	0	2880	3200	1600	1600	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.20	0.20	0.03	0.39	0.00	0.07	0.08	0.02	0.24	0.00	0.21
Crit Moves:	****				****			****		****		

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AM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Alamitos Avenue at 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.765
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	60	Level Of Service:	C

Street Name:	Alamitos Avenue						1st Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	1 0	1	0 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	34	439	0	0	899	178	104	0	27	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	439	0	0	899	178	104	0	27	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	34	439	0	0	899	178	104	0	27	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	34	439	0	0	899	178	104	0	27	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	439	0	0	899	178	104	0	27	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	439	0	0	899	178	104	0	27	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.00	1.00	0.79	0.00	0.21	0.00	0.00	0.00
Final Sat.:	1600	3200	0	0	1600	1600	1270	0	330	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.14	0.00	0.00	0.56	0.11	0.08	0.00	0.08	0.00	0.00	0.00
Crit Moves:	****				****				****			

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AM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Alamitos Avenue/Shoreline Drive at Ocean Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.964
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Alamitos Avenue/Shoreline Drive						Ocean Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 1	0	1 0	3 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	41	182	147	77	502	433	202	534	40	337	1541	62
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	182	147	77	502	433	202	534	40	337	1541	62
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	182	147	77	502	433	202	534	40	337	1541	62
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	41	182	147	77	502	433	202	534	40	337	1541	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	182	147	77	502	433	202	534	40	337	1541	62
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	182	147	77	502	433	202	534	40	337	1541	62
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	2.00	1.92	0.08
Final Sat.:	1600	3200	1600	1600	3200	1600	1600	4800	1600	2880	3076	124
Capacity Analysis Module:												
Vol/Sat:	0.03	0.06	0.09	0.05	0.16	0.27	0.13	0.11	0.03	0.12	0.50	0.50
OvlAdjV/S:			0.00									
Crit Moves:					****		****				****	

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PM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Alamitos Avenue at 7th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.333
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Alamitos Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	54	502	749	60	627	21	166	1001	268	450	663	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	502	749	60	627	21	166	1001	268	450	663	61
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	54	502	749	60	627	21	166	1001	268	450	663	61
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	54	502	749	60	627	21	166	1001	268	450	663	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	502	749	60	627	21	166	1001	268	450	663	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	502	749	60	627	21	166	1001	268	450	663	61
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.58	0.42	1.00	1.83	0.17
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	2524	676	1600	2930	270
Capacity Analysis Module:												
Vol/Sat:	0.03	0.31	0.47	0.04	0.39	0.01	0.10	0.40	0.40	0.28	0.23	0.23
Crit Moves:			****	****				****		****		

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PM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Alamitos Avenue at 6th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.663
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	B

Street Name:	Alamitos Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permit+Prot			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	0	1 0	0 0	1!	0 0
Volume Module:												
Base Vol:	50	1162	9	8	1149	186	124	23	56	9	5	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	1162	9	8	1149	186	124	23	56	9	5	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	1162	9	8	1149	186	124	23	56	9	5	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	1162	9	8	1149	186	124	23	56	9	5	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	1162	9	8	1149	186	124	23	56	9	5	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	1162	9	8	1149	186	124	23	56	9	5	14
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.98	0.02	1.00	1.72	0.28	1.00	0.29	0.71	0.32	0.18	0.50
Final Sat.:	1600	3175	25	1600	2754	446	1600	466	1134	514	286	800
Capacity Analysis Module:												
Vol/Sat:	0.03	0.37	0.37	0.01	0.42	0.42	0.08	0.05	0.05	0.02	0.02	0.02
Crit Moves:	****				****		****				****	

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PM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Alamitos Avenue at 5th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.568
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	A

Street Name:	Alamitos Avenue						5th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	18	1171	16	40	1118	31	40	31	42	3	12	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	18	1171	16	40	1118	31	40	31	42	3	12	12
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	18	1171	16	40	1118	31	40	31	42	3	12	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	18	1171	16	40	1118	31	40	31	42	3	12	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	18	1171	16	40	1118	31	40	31	42	3	12	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	18	1171	16	40	1118	31	40	31	42	3	12	12
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.97	0.03	1.00	1.95	0.05	0.35	0.27	0.38	0.11	0.45	0.44
Final Sat.:	1600	3157	43	1600	3114	86	566	439	595	178	711	711
Capacity Analysis Module:												
Vol/Sat:	0.01	0.37	0.37	0.03	0.36	0.36	0.03	0.07	0.07	0.00	0.02	0.02
Crit Moves:		****		****				****		****		

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PM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Alamitos Avenue at 4th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.893
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	97	Level Of Service:	D

Street Name:	Alamitos Avenue						4th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	1 1	0	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	42	1113	160	173	936	52	50	398	44	62	220	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	1113	160	173	936	52	50	398	44	62	220	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	1113	160	173	936	52	50	398	44	62	220	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	42	1113	160	173	936	52	50	398	44	62	220	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	1113	160	173	936	52	50	398	44	62	220	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	1113	160	173	936	52	50	398	44	62	220	53
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.75	0.25	1.00	1.89	0.11	1.00	1.00	1.00	1.00	0.81	0.19
Final Sat.:	1600	2798	402	1600	3032	168	1600	1600	1600	1600	1289	311
Capacity Analysis Module:												
Vol/Sat:	0.03	0.40	0.40	0.11	0.31	0.31	0.03	0.25	0.03	0.04	0.17	0.17
Crit Moves:		****		****				****		****		

PM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alamitos Avenue at 3rd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.770
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	71	Level Of Service:	C

Street Name:	Alamitos Avenue						3rd Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 1	0	1 0	1 0	1	0 0	0 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	141	1298	200	96	711	190	0	0	0	0	227	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	141	1298	200	96	711	190	0	0	0	0	227	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	141	1298	200	96	711	190	0	0	0	0	227	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	141	1298	200	96	711	190	0	0	0	0	227	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	141	1298	200	96	711	190	0	0	0	0	227	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	141	1298	200	96	711	190	0	0	0	0	227	53
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.73	0.27	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.62	0.38
Final Sat.:	1600	2773	427	1600	1600	1600	0	0	0	0	2594	606
Capacity Analysis Module:												
Vol/Sat:	0.09	0.47	0.47	0.06	0.44	0.12	0.00	0.00	0.00	0.00	0.09	0.09
Crit Moves:	****				****						****	

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PM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Alamitos Avenue at Broadway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.991
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	170	Level Of Service:	E

Street Name:	Alamitos Avenue						Broadway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 1	0	1 0	1 0	0	2 0	2 0	1	1 0	0 0	1
Volume Module:												
Base Vol:	0	1021	236	90	586	0	481	908	69	138	0	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1021	236	90	586	0	481	908	69	138	0	173
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1021	236	90	586	0	481	908	69	138	0	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1021	236	90	586	0	481	908	69	138	0	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1021	236	90	586	0	481	908	69	138	0	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1021	236	90	586	0	481	908	69	138	0	173
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.62	0.38	1.00	1.00	0.00	2.00	2.00	1.00	1.00	0.00	1.00
Final Sat.:	0	2599	601	1600	1600	0	2880	3200	1600	1600	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.39	0.06	0.37	0.00	0.17	0.28	0.04	0.09	0.00	0.11
Crit Moves:		****		****				****				****

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PM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Alamitos Avenue at 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.701
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	C

Street Name:	Alamitos Avenue						1st Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	1 0	1	0 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	78	1070	0	0	654	98	181	0	48	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	78	1070	0	0	654	98	181	0	48	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	78	1070	0	0	654	98	181	0	48	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	78	1070	0	0	654	98	181	0	48	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	1070	0	0	654	98	181	0	48	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	78	1070	0	0	654	98	181	0	48	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.00	1.00	0.79	0.00	0.21	0.00	0.00	0.00
Final Sat.:	1600	3200	0	0	1600	1600	1265	0	335	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.33	0.00	0.00	0.41	0.06	0.14	0.00	0.14	0.00	0.00	0.00
Crit Moves:	****				****		****					

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PM Cumulative Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Alamitos Avenue/Shoreline Drive at Ocean Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.982
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	157	Level Of Service:	E

Street Name:	Alamitos Avenue/Shoreline Drive						Ocean Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 1	0	1 0	3 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	73	641	444	92	321	289	377	1561	53	188	833	115
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	73	641	444	92	321	289	377	1561	53	188	833	115
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	73	641	444	92	321	289	377	1561	53	188	833	115
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	73	641	444	92	321	289	377	1561	53	188	833	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	73	641	444	92	321	289	377	1561	53	188	833	115
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	73	641	444	92	321	289	377	1561	53	188	833	115
OvlAdjVol:			340									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	2.00	1.76	0.24
Final Sat.:	1600	3200	1600	1600	3200	1600	1600	4800	1600	2880	2812	388
Capacity Analysis Module:												
Vol/Sat:	0.05	0.20	0.28	0.06	0.10	0.18	0.24	0.33	0.03	0.07	0.30	0.30
OvlAdjV/S:			0.21									
Crit Moves:			****	****			****				****	

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APPENDIX B-VI

YEAR 2020 CUMULATIVE TRAFFIC CONDITIONS (HCM METHODOLOGY)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	462	114	467	1208	60	56	478	499	58	556	65
Future Volume (veh/h)	115	462	114	467	1208	60	56	478	499	58	556	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	115	462	114	467	1208	60	56	478	499	58	556	65
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	1175	288	355	2259	112	325	1009	1174	334	1009	858
Arrive On Green	0.42	0.42	0.42	0.20	0.66	0.66	0.90	0.90	0.90	0.54	0.54	0.54
Sat Flow, veh/h	435	2819	691	1774	3432	170	800	1863	1583	573	1863	1583
Grp Volume(v), veh/h	115	289	287	467	622	646	56	478	499	58	556	65
Grp Sat Flow(s),veh/h/ln	435	1770	1741	1774	1770	1833	800	1863	1583	573	1863	1583
Q Serve(g_s), s	27.7	13.7	13.8	24.0	22.2	22.3	4.3	5.1	0.0	7.1	23.4	2.4
Cycle Q Clear(g_c), s	50.0	13.7	13.8	24.0	22.2	22.3	29.5	5.1	0.0	14.7	23.4	2.4
Prop In Lane	1.00		0.40	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	160	737	725	355	1165	1207	325	1009	1174	334	1009	858
V/C Ratio(X)	0.72	0.39	0.40	1.32	0.53	0.54	0.17	0.47	0.42	0.17	0.55	0.08
Avail Cap(c_a), veh/h	160	737	725	355	1165	1207	325	1009	1174	334	1009	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	24.4	24.5	48.0	10.8	10.8	10.4	2.9	0.9	18.2	18.0	13.1
Incr Delay (d2), s/veh	14.2	0.3	0.4	161.0	0.5	0.5	1.1	1.5	1.1	1.1	2.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	6.7	6.7	27.6	10.9	11.3	1.0	2.8	1.3	1.2	12.5	1.1
LnGrp Delay(d),s/veh	62.1	24.7	24.8	209.0	11.3	11.3	11.5	4.4	2.0	19.3	20.1	13.3
LnGrp LOS	E	C	C	F	B	B	B	A	A	B	C	B
Approach Vol, veh/h		691			1735			1033			679	
Approach Delay, s/veh		31.0			64.5			3.6			19.4	
Approach LOS		C			E			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		71.0	29.0	55.0		71.0		84.0
Change Period (Y+Rc), s		5.0	5.0	* 5		5.0		5.0
Max Green Setting (Gmax), s		32.0	24.0	* 50		32.0		78.0
Max Q Clear Time (g_c+I1), s		31.5	26.0	52.0		25.4		24.3
Green Ext Time (p_c), s		0.4	0.0	0.0		4.7		15.7

Intersection Summary	
HCM 2010 Ctrl Delay	36.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	14	49	10	5	26	50	858	9	5	953	182
Future Volume (veh/h)	151	14	49	10	5	26	50	858	9	5	953	182
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	151	14	49	10	5	26	50	858	9	5	953	182
Adj No. of Lanes	1	1	0	0	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	53	187	45	16	41	440	2763	29	550	2284	436
Arrive On Green	0.05	0.15	0.15	0.06	0.06	0.06	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1774	364	1274	144	286	745	494	3588	38	636	2966	566
Grp Volume(v), veh/h	151	0	63	41	0	0	50	423	444	5	568	567
Grp Sat Flow(s),veh/h/ln	1774	0	1638	1174	0	0	494	1770	1856	636	1770	1763
Q Serve(g_s), s	1.9	0.0	4.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.9	0.0	4.1	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.78	0.24		0.63	1.00		0.02	1.00		0.32
Lane Grp Cap(c), veh/h	206	0	240	102	0	0	440	1363	1429	550	1363	1357
V/C Ratio(X)	0.73	0.00	0.26	0.40	0.00	0.00	0.11	0.31	0.31	0.01	0.42	0.42
Avail Cap(c_a), veh/h	310	0	587	351	0	0	440	1363	1429	550	1363	1357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.96	0.96	0.96	0.09	0.09	0.09
Uniform Delay (d), s/veh	53.5	0.0	45.4	55.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	5.0	0.0	0.6	2.5	0.0	0.0	0.5	0.6	0.5	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	1.9	1.4	0.0	0.0	0.1	0.2	0.2	0.0	0.0	0.0
LnGrp Delay(d),s/veh	58.4	0.0	46.0	57.7	0.0	0.0	0.5	0.6	0.5	0.0	0.1	0.1
LnGrp LOS	E		D	E			A	A	A	A	A	A
Approach Vol, veh/h		214			41			917			1140	
Approach Delay, s/veh		54.8			57.7			0.6			0.1	
Approach LOS		D			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		97.4		22.6		97.4	11.0	11.6
Change Period (Y+Rc), s		5.0		5.0		5.0	5.0	* 5
Max Green Setting (Gmax), s		67.0		43.0		67.0	13.0	* 26
Max Q Clear Time (g_c+I1), s		2.0		6.1		2.0	3.9	6.7
Green Ext Time (p_c), s		26.3		0.8		26.3	0.5	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	6.4
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	22	28	5	43	26	52	869	7	24	931	81
Future Volume (veh/h)	52	22	28	5	43	26	52	869	7	24	931	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	52	22	28	5	43	26	52	869	7	24	931	81
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	37	37	36	91	51	522	2999	24	585	2746	239
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	745	440	448	53	1087	617	555	3598	29	630	3295	287
Grp Volume(v), veh/h	102	0	0	74	0	0	52	427	449	24	500	512
Grp Sat Flow(s),veh/h/ln	1633	0	0	1757	0	0	555	1770	1858	630	1770	1812
Q Serve(g_s), s	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.51		0.27	0.07		0.35	1.00		0.02	1.00		0.16
Lane Grp Cap(c), veh/h	181	0	0	178	0	0	522	1475	1548	585	1475	1510
V/C Ratio(X)	0.56	0.00	0.00	0.41	0.00	0.00	0.10	0.29	0.29	0.04	0.34	0.34
Avail Cap(c_a), veh/h	478	0	0	521	0	0	522	1475	1548	585	1475	1510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90
Uniform Delay (d), s/veh	53.5	0.0	0.0	52.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	2.7	0.0	0.0	1.5	0.0	0.0	0.3	0.4	0.4	0.1	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	0.0	2.4	0.0	0.0	0.0	0.2	0.2	0.0	0.2	0.2
LnGrp Delay(d),s/veh	56.2	0.0	0.0	54.2	0.0	0.0	0.3	0.4	0.4	0.1	0.6	0.5
LnGrp LOS	E			D			A	A	A	A	A	A
Approach Vol, veh/h		102			74			928			1036	
Approach Delay, s/veh		56.2			54.2			0.4			0.5	
Approach LOS		E			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		105.0		15.0		105.0		15.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		76.0		34.0		76.0		34.0
Max Q Clear Time (g_c+I1), s		2.0		9.0		2.0		6.8
Green Ext Time (p_c), s		24.5		1.0		24.5		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	5.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	206	23	192	455	77	90	814	46	98	819	44
Future Volume (veh/h)	46	206	23	192	455	77	90	814	46	98	819	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	46	206	23	192	455	77	90	814	46	98	819	44
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	154	689	585	394	574	97	409	1863	105	410	1869	100
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	868	1863	1583	1147	1553	263	638	3406	192	640	3416	184
Grp Volume(v), veh/h	46	206	23	192	0	532	90	423	437	98	424	439
Grp Sat Flow(s),veh/h/ln	868	1863	1583	1147	0	1816	638	1770	1829	640	1770	1830
Q Serve(g_s), s	6.0	9.4	1.1	17.1	0.0	31.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	37.3	9.4	1.1	26.5	0.0	31.3	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.11	1.00		0.10
Lane Grp Cap(c), veh/h	154	689	585	394	0	671	409	968	1000	410	968	1001
V/C Ratio(X)	0.30	0.30	0.04	0.49	0.00	0.79	0.22	0.44	0.44	0.24	0.44	0.44
Avail Cap(c_a), veh/h	217	823	699	477	0	802	409	968	1000	410	968	1001
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.95	0.95	0.95	0.94	0.94	0.94
Uniform Delay (d), s/veh	50.3	26.8	24.2	36.2	0.0	33.7	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.2	0.0	0.9	0.0	4.6	1.2	1.4	1.3	1.3	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	4.9	0.5	5.5	0.0	16.5	0.1	0.4	0.4	0.1	0.4	0.4
LnGrp Delay(d),s/veh	51.4	27.0	24.2	37.1	0.0	38.3	1.2	1.4	1.3	1.3	1.4	1.3
LnGrp LOS	D	C	C	D		D	A	A	A	A	A	A
Approach Vol, veh/h		275			724			950			961	
Approach Delay, s/veh		30.9			38.0			1.3			1.3	
Approach LOS		C			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		70.6		49.4		70.6		49.4
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		57.0		53.0		57.0		53.0
Max Q Clear Time (g_c+I1), s		2.0		39.3		2.0		33.3
Green Ext Time (p_c), s		21.7		5.1		21.7		6.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	669	72	342	782	26	31	670	253
Future Volume (veh/h)	0	0	0	0	669	72	342	782	26	31	670	253
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				0	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h				0	669	72	342	782	26	31	670	253
Adj No. of Lanes				0	2	0	1	2	0	1	1	1
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	2	0	2	2	2	2	2	2
Cap, veh/h				0	0	0	902	3350	111	334	761	647
Arrive On Green				0.00	0.00	0.00	1.00	1.00	1.00	0.82	0.82	0.82
Sat Flow, veh/h					0		1774	3496	116	672	1863	1583
Grp Volume(v), veh/h					0.0		342	396	412	31	670	253
Grp Sat Flow(s),veh/h/ln							1774	1770	1842	672	1863	1583
Q Serve(g_s), s							0.0	0.0	0.0	1.1	28.2	5.2
Cycle Q Clear(g_c), s							0.0	0.0	0.0	1.1	28.2	5.2
Prop In Lane							1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h							902	1696	1765	334	761	647
V/C Ratio(X)							0.38	0.23	0.23	0.09	0.88	0.39
Avail Cap(c_a), veh/h							902	1696	1765	334	761	647
HCM Platoon Ratio							2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)							0.89	0.89	0.89	0.90	0.90	0.90
Uniform Delay (d), s/veh							0.0	0.0	0.0	6.6	9.1	7.0
Incr Delay (d2), s/veh							0.2	0.3	0.3	0.5	12.7	1.6
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							0.1	0.1	0.1	0.3	16.1	2.4
LnGrp Delay(d),s/veh							0.2	0.3	0.3	7.1	21.8	8.6
LnGrp LOS							A	A	A	A	C	A
Approach Vol, veh/h								1150			954	
Approach Delay, s/veh								0.3			17.8	
Approach LOS								A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		
Phs Duration (G+Y+Rc), s		120.0			66.0	54.0		
Change Period (Y+Rc), s		5.0			5.0	5.0		
Max Green Setting (Gmax), s		82.0			28.0	49.0		
Max Q Clear Time (g_c+I1), s		2.0			2.0	30.2		
Green Ext Time (p_c), s		7.7			6.9	5.7		

Intersection Summary	
HCM 2010 Ctrl Delay	8.2
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	257	34	377	0	329	0	588	46	40	629	0
Future Volume (veh/h)	204	257	34	377	0	329	0	588	46	40	629	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	0	1863	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	204	257	34	377	0	329	0	588	46	40	629	0
Adj No. of Lanes	2	2	1	1	0	1	0	2	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	343	353	158	0	0	0	0	2718	212	674	1522	0
Arrive On Green	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.82	0.82	1.00	1.00	0.00
Sat Flow, veh/h	3442	3539	1583		0		0	3420	260	790	1863	0
Grp Volume(v), veh/h	204	257	34		0.0		0	312	322	40	629	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583				0	1770	1817	790	1863	0
Q Serve(g_s), s	6.8	8.5	2.4				0.0	4.7	4.7	0.3	0.0	0.0
Cycle Q Clear(g_c), s	6.8	8.5	2.4				0.0	4.7	4.7	5.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.14	1.00		0.00
Lane Grp Cap(c), veh/h	343	353	158				0	1446	1484	674	1522	0
V/C Ratio(X)	0.59	0.73	0.22				0.00	0.22	0.22	0.06	0.41	0.00
Avail Cap(c_a), veh/h	516	531	237				0	1446	1484	674	1522	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.37	0.37	0.00
Uniform Delay (d), s/veh	51.7	52.4	49.7				0.0	2.4	2.4	0.1	0.0	0.0
Incr Delay (d2), s/veh	1.6	2.9	0.7				0.0	0.3	0.3	0.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	4.3	1.1				0.0	2.4	2.5	0.1	0.1	0.0
LnGrp Delay(d),s/veh	53.3	55.3	50.4				0.0	2.8	2.8	0.2	0.3	0.0
LnGrp LOS	D	E	D					A	A	A	A	
Approach Vol, veh/h		495						634			669	
Approach Delay, s/veh		54.2						2.8			0.3	
Approach LOS		D						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		103.0		17.0		103.0		
Change Period (Y+Rc), s		5.0		5.0		5.0		
Max Green Setting (Gmax), s		52.0		18.0		52.0		
Max Q Clear Time (g_c+I1), s		6.7		10.5		7.0		
Green Ext Time (p_c), s		11.5		1.5		11.5		

Intersection Summary	
HCM 2010 Ctrl Delay	16.0
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	104	27	34	439	899	178
Future Volume (vph)	104	27	34	439	899	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	0.95	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1742		1770	3539	1863	1583
Flt Permitted	0.96		0.27	1.00	1.00	1.00
Satd. Flow (perm)	1742		495	3539	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	104	27	34	439	899	178
RTOR Reduction (vph)	9	0	0	0	0	36
Lane Group Flow (vph)	122	0	34	439	899	142
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	14.0		96.0	96.0	96.0	96.0
Effective Green, g (s)	14.0		96.0	96.0	96.0	96.0
Actuated g/C Ratio	0.12		0.80	0.80	0.80	0.80
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	203		396	2831	1490	1266
v/s Ratio Prot				0.12	c0.48	
v/s Ratio Perm	c0.07		0.07			0.09
v/c Ratio	0.60		0.09	0.16	0.60	0.11
Uniform Delay, d1	50.4		2.6	2.7	4.6	2.6
Progression Factor	1.00		0.22	0.21	0.69	0.84
Incremental Delay, d2	5.0		0.3	0.1	1.4	0.1
Delay (s)	55.3		0.9	0.7	4.6	2.4
Level of Service	E		A	A	A	A
Approach Delay (s)	55.3			0.7	4.2	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱		↑↑↑	↑↑↳	
Traffic Vol, veh/h	0	119	0	437	887	28
Future Vol, veh/h	0	119	0	437	887	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	119	0	437	887	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	458	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	550	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	550	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	550	-	-
HCM Lane V/C Ratio	-	0.216	-	-
HCM Control Delay (s)	-	13.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.8	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	534	40	337	1541	62	41	182	147	77	502	433
Future Volume (veh/h)	202	534	40	337	1541	62	41	182	147	77	502	433
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	202	534	0	337	1541	62	41	182	147	77	502	433
Adj No. of Lanes	1	3	1	2	2	0	1	2	1	1	3	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	207	2203	686	402	1474	59	157	914	594	822	2589	1209
Arrive On Green	0.12	0.43	0.00	0.12	0.43	0.43	0.26	0.26	0.26	0.46	0.76	0.76
Sat Flow, veh/h	1774	5085	1583	3442	3469	139	596	3539	1583	1774	3390	1583
Grp Volume(v), veh/h	202	534	0	337	784	819	41	182	147	77	502	433
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1770	1838	596	1770	1583	1774	1695	1583
Q Serve(g_s), s	13.6	8.0	0.0	11.5	51.0	51.0	7.4	4.8	5.8	2.9	4.9	10.7
Cycle Q Clear(g_c), s	13.6	8.0	0.0	11.5	51.0	51.0	18.9	4.8	5.8	2.9	4.9	10.7
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	207	2203	686	402	752	781	157	914	594	822	2589	1209
V/C Ratio(X)	0.98	0.24	0.00	0.84	1.04	1.05	0.26	0.20	0.25	0.09	0.19	0.36
Avail Cap(c_a), veh/h	207	2203	686	516	752	781	157	914	594	822	2589	1209
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	21.5	0.0	51.9	34.5	34.5	45.2	34.8	31.8	18.0	3.9	4.6
Incr Delay (d2), s/veh	55.5	0.1	0.0	9.4	44.4	45.6	4.0	0.5	1.0	0.0	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	3.7	0.0	6.0	34.1	35.7	1.4	2.4	2.9	1.4	2.4	4.8
LnGrp Delay(d),s/veh	108.3	21.6	0.0	61.3	78.9	80.1	49.2	35.3	32.8	18.1	4.1	5.4
LnGrp LOS	F	C		E	F	F	D	D	C	B	A	A
Approach Vol, veh/h		736			1940			370			1012	
Approach Delay, s/veh		45.4			76.3			35.8			5.7	
Approach LOS		D			E			D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	61.7	36.0	18.0	57.0		97.7	19.0	56.0
Change Period (Y+Rc), s	5.0	* 5	4.0	5.0		5.0	5.0	* 5
Max Green Setting (Gmax), s	6.0	* 31	18.0	47.0		41.0	14.0	* 51
Max Q Clear Time (g_c+I1), s	4.9	20.9	13.5	10.0		12.7	15.6	53.0
Green Ext Time (p_c), s	0.2	1.4	0.5	4.7		7.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.4
HCM 2010 LOS	D

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	462	114	467	1208	60	56	478	499	58	556	65
Future Volume (vph)	115	462	114	467	1208	60	56	478	499	58	556	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	300		0	145		0	130		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970			0.993				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3433	0	1770	3514	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.133			0.950			0.125			0.125		
Satd. Flow (perm)	248	3433	0	1770	3514	0	233	1863	1583	233	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			8				257			64
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		507			578			527			677	
Travel Time (s)		11.5			13.1			12.0			15.4	
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
Adj. Flow (vph)	115	462	114	467	1208	60	56	478	499	58	556	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	576	0	467	1268	0	56	478	499	58	556	65
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4						2		2	6		6

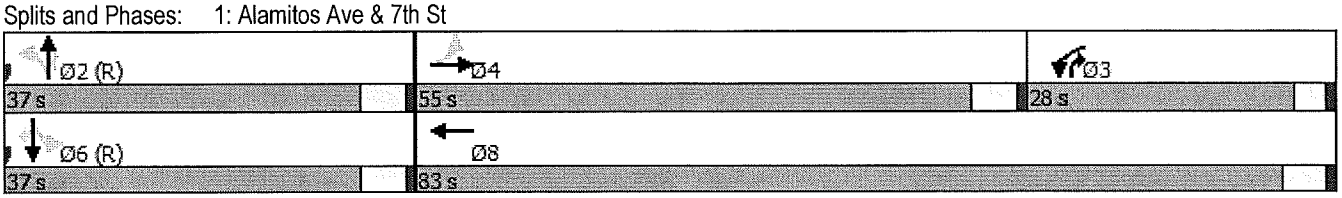
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		3	8		2	2	3	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	33.0	33.0		10.0	26.0		30.0	30.0	10.0	30.0	30.0	30.0
Total Split (s)	55.0	55.0		28.0	83.0		37.0	37.0	28.0	37.0	37.0	37.0
Total Split (%)	45.8%	45.8%		23.3%	69.2%		30.8%	30.8%	23.3%	30.8%	30.8%	30.8%
Maximum Green (s)	50.0	50.0		24.0	78.0		32.0	32.0	24.0	32.0	32.0	32.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead		Lag					Lag			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0			14.0		18.0	18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)	5	5			5		5	5		5	5	5
Act Effct Green (s)	50.0	50.0		24.0	78.0		32.0	32.0	61.0	32.0	32.0	32.0
Actuated g/C Ratio	0.42	0.42		0.20	0.65		0.27	0.27	0.51	0.27	0.27	0.27
v/c Ratio	1.12	0.40		1.32	0.55		0.90	0.96	0.54	0.94	1.12	0.14
Control Delay	159.1	24.0		200.9	12.6		136.1	79.2	16.6	143.5	118.8	9.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	159.1	24.0		200.9	12.6		136.1	79.2	16.8	143.5	118.8	9.1
LOS	F	C		F	B		F	E	B	F	F	A
Approach Delay		46.5			63.2			52.1			110.4	
Approach LOS		D			E			D			F	
Queue Length 50th (ft)	~102	152		~467	258		35	342	123	44	~496	1
Queue Length 95th (ft)	#225	200		#675	315		#118	#564	232	#134	#713	36
Internal Link Dist (ft)		427			498			447			597	
Turn Bay Length (ft)	55			300			145			130		
Base Capacity (vph)	103	1448		354	2286		62	496	931	62	496	469
Starvation Cap Reductn	0	0		0	0		0	0	79	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.12	0.40		1.32	0.55		0.90	0.96	0.59	0.94	1.12	0.14

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.32
Intersection Signal Delay: 65.4 Intersection LOS: E
Intersection Capacity Utilization 92.6% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Alamitos Ave & 7th St



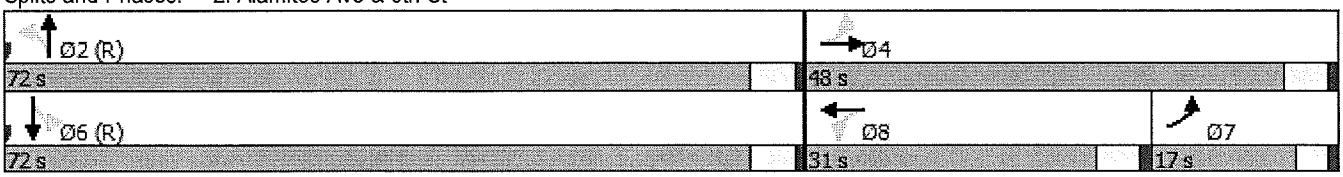
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	14	49	10	5	26	50	858	9	5	953	182
Future Volume (vph)	151	14	49	10	5	26	50	858	9	5	953	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	225		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.883			0.914			0.998			0.976	
Flt Protected	0.950				0.988		0.950			0.950		
Satd. Flow (prot)	1770	1645	0	0	1682	0	1770	3532	0	1770	3454	0
Flt Permitted	0.821				0.907		0.219			0.305		
Satd. Flow (perm)	1529	1645	0	0	1544	0	408	3532	0	568	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			26			1			30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		536			543			380			527	
Travel Time (s)		12.2			12.3			8.6			12.0	
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
Adj. Flow (vph)	151	14	49	10	5	26	50	858	9	5	953	182
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	63	0	0	41	0	50	867	0	5	1135	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	30.0		30.0	30.0		19.0	19.0		23.0	23.0	
Total Split (s)	17.0	48.0		31.0	31.0		72.0	72.0		72.0	72.0	
Total Split (%)	14.2%	40.0%		25.8%	25.8%		60.0%	60.0%		60.0%	60.0%	
Maximum Green (s)	13.0	43.0		26.0	26.0		67.0	67.0		67.0	67.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag			Lead	Lead							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		18.0		18.0	18.0		7.0	7.0		11.0	11.0	
Pedestrian Calls (#/hr)		5		5	5		5	5		5	5	
Act Effct Green (s)	22.1	21.1			10.3		88.9	88.9		88.9	88.9	
Actuated g/C Ratio	0.18	0.18			0.09		0.74	0.74		0.74	0.74	
v/c Ratio	0.51	0.19			0.26		0.17	0.33		0.01	0.44	
Control Delay	48.1	14.8			27.7		4.8	3.2		1.4	1.1	
Queue Delay	0.0	0.0			0.0		0.0	0.1		0.0	0.5	
Total Delay	48.1	14.8			27.7		4.8	3.4		1.4	1.6	
LOS	D	B			C		A	A		A	A	
Approach Delay		38.3			27.7			3.5			1.6	
Approach LOS		D			C			A			A	
Queue Length 50th (ft)	106	9			11		4	42		0	11	
Queue Length 95th (ft)	147	42			41		18	92		m0	m17	
Internal Link Dist (ft)		456			463			300			447	
Turn Bay Length (ft)							100			225		
Base Capacity (vph)	358	620			354		302	2616		420	2566	
Starvation Cap Reductn	0	0			0		0	742		0	909	
Spillback Cap Reductn	0	0			0		0	64		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.42	0.10			0.12		0.17	0.46		0.01	0.68	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 6.2 Intersection LOS: A
Intersection Capacity Utilization 64.7% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Alamitos Ave & 6th St



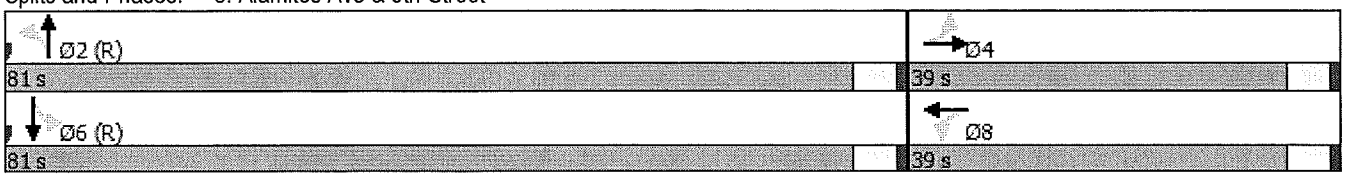
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	22	28	5	43	26	52	869	7	24	931	81
Future Volume (vph)	52	22	28	5	43	26	52	869	7	24	931	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.963			0.953			0.999			0.988	
Flt Protected		0.975			0.997		0.950			0.950		
Satd. Flow (prot)	0	1749	0	0	1770	0	1770	3536	0	1770	3497	0
Flt Permitted		0.778			0.983		0.269			0.313		
Satd. Flow (perm)	0	1396	0	0	1745	0	501	3536	0	583	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			23			1			15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			618			468			380	
Travel Time (s)		12.0			14.0			10.6			8.6	
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
Adj. Flow (vph)	52	22	28	5	43	26	52	869	7	24	931	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	102	0	0	74	0	52	876	0	24	1012	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	11.0		30.0	30.0		19.0	19.0		19.0	19.0	
Total Split (s)	39.0	39.0		39.0	39.0		81.0	81.0		81.0	81.0	
Total Split (%)	32.5%	32.5%		32.5%	32.5%		67.5%	67.5%		67.5%	67.5%	
Maximum Green (s)	34.0	34.0		34.0	34.0		76.0	76.0		76.0	76.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				18.0	18.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)				5	5		5	5		5	5	
Act Effct Green (s)		13.7			13.7		96.3	96.3		96.3	96.3	
Actuated g/C Ratio		0.11			0.11		0.80	0.80		0.80	0.80	
v/c Ratio		0.59			0.34		0.13	0.31		0.05	0.36	
Control Delay		54.3			36.5		1.8	1.2		0.7	0.9	
Queue Delay		0.0			0.0		0.0	0.1		0.0	0.1	
Total Delay		54.3			36.5		1.8	1.3		0.7	1.1	
LOS		D			D		A	A		A	A	
Approach Delay		54.3			36.5			1.4			1.1	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		65			37		2	17		0	5	
Queue Length 95th (ft)		111			75		m7	34		m1	10	
Internal Link Dist (ft)		450			538			388			300	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		407			510		401	2836		467	2808	
Starvation Cap Reductn		0			0		0	818		0	749	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.25			0.15		0.13	0.43		0.05	0.49	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 13 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 5.0 Intersection LOS: A
Intersection Capacity Utilization 58.2% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Alamitos Ave & 5th Street



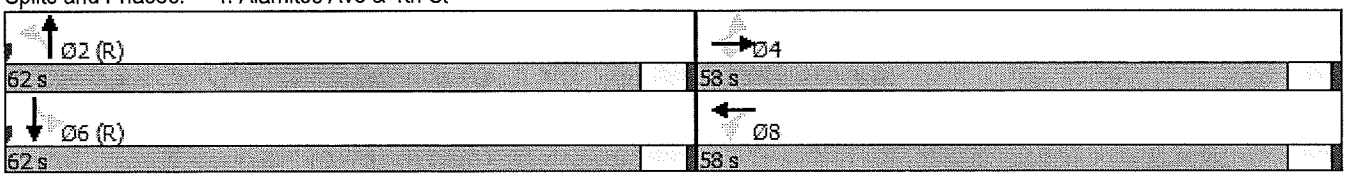
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	206	23	192	455	77	90	814	46	98	819	44
Future Volume (vph)	46	206	23	192	455	77	90	814	46	98	819	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	50		0	115		0	155		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.978			0.992			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1822	0	1770	3511	0	1770	3511	0
Flt Permitted	0.160			0.553			0.267			0.269		
Satd. Flow (perm)	298	1863	1583	1030	1822	0	497	3511	0	501	3511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			23		9			6			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		549			626			397			468	
Travel Time (s)		12.5			14.2			9.0			10.6	
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
Adj. Flow (vph)	46	206	23	192	455	77	90	814	46	98	819	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	206	23	192	532	0	90	860	0	98	863	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		23.0	23.0		26.0	26.0	
Total Split (s)	58.0	58.0	58.0	58.0	58.0		62.0	62.0		62.0	62.0	
Total Split (%)	48.3%	48.3%	48.3%	48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	53.0	53.0	53.0	53.0	53.0		57.0	57.0		57.0	57.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0		11.0	11.0		14.0	14.0	
Pedestrian Calls (#/hr)	5	5	5	5	5		5	5		5	5	
Act Effct Green (s)	42.1	42.1	42.1	42.1	42.1		67.9	67.9		67.9	67.9	
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.35		0.57	0.57		0.57	0.57	
v/c Ratio	0.44	0.32	0.04	0.53	0.83		0.32	0.43		0.35	0.43	
Control Delay	41.6	28.3	7.9	35.4	45.7		18.5	15.3		14.9	11.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.2		0.0	0.2	
Total Delay	41.6	28.3	7.9	35.4	45.7		18.5	15.6		14.9	11.6	
LOS	D	C	A	D	D		B	B		B	B	
Approach Delay		28.8			43.0			15.8			11.9	
Approach LOS		C			D			B			B	
Queue Length 50th (ft)	27	115	0	117	366		29	148		22	104	
Queue Length 95th (ft)	61	154	16	169	443		m52	m175		39	121	
Internal Link Dist (ft)		469			546			317			388	
Turn Bay Length (ft)	55			50			115			155		
Base Capacity (vph)	131	822	712	454	809		281	1990		283	1990	
Starvation Cap Reductn	0	0	0	0	0		0	443		0	378	
Spillback Cap Reductn	0	0	1	0	0		0	0		0	166	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.35	0.25	0.03	0.42	0.66		0.32	0.56		0.35	0.54	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 22.5 Intersection LOS: C
Intersection Capacity Utilization 79.7% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Alamitos Ave & 4th St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	669	72	342	782	26	31	670	253
Future Volume (vph)	0	0	0	0	669	72	342	782	26	31	670	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	60		0	205		0	110		0
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt					0.985			0.995				0.850
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	0	0	3486	0	1770	3522	0	1770	1863	1583
Flt Permitted							0.950			0.300		
Satd. Flow (perm)	0	0	0	0	3486	0	1770	3522	0	559	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9			6				90
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			470			551			397	
Travel Time (s)		12.0			10.7			12.5			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
Adj. Flow (vph)	0	0	0	0	669	72	342	782	26	31	670	253
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	741	0	342	808	0	31	670	253
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					2		1	2		1	2	1
Detector Template					Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)					100		20	100		20	100	20
Trailing Detector (ft)					0		0	0		0	0	0
Detector 1 Position(ft)					0		0	0		0	0	0
Detector 1 Size(ft)					6		20	6		20	6	20
Detector 1 Type					Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)					0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)					0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)					0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type					NA		Prot	NA		Perm	NA	Perm
Protected Phases					8		5	2			6	
Permitted Phases										6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase					8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)					6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)					30.0		11.0	23.0		19.0	19.0	19.0
Total Split (s)					33.0		33.0	87.0		54.0	54.0	54.0
Total Split (%)					27.5%		27.5%	72.5%		45.0%	45.0%	45.0%
Maximum Green (s)					28.0		28.0	82.0		49.0	49.0	49.0
Yellow Time (s)					4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)					1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)					0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)					5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lag			Lead	Lead	Lead
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)					3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode					None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)					7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)					18.0			11.0		7.0	7.0	7.0
Pedestrian Calls (#/hr)					5			5		5	5	5
Act Effct Green (s)					27.6		28.0	82.4		49.4	49.4	49.4
Actuated g/C Ratio					0.23		0.23	0.69		0.41	0.41	0.41
v/c Ratio					0.92		0.83	0.33		0.13	0.87	0.36
Control Delay					61.8		60.7	9.9		20.7	41.6	14.1
Queue Delay					0.0		0.0	0.0		0.0	0.0	0.4
Total Delay					61.8		60.7	9.9		20.7	41.6	14.5
LOS					E		E	A		C	D	B
Approach Delay					61.8			25.0			33.8	
Approach LOS					E			C			C	
Queue Length 50th (ft)					292		243	123		10	439	42
Queue Length 95th (ft)					#402		#416	156		m24	#693	73
Internal Link Dist (ft)		450			390			471			317	
Turn Bay Length (ft)							205			110		
Base Capacity (vph)					820		413	2420		230	767	704
Starvation Cap Reductn					0		0	0		0	0	149
Spillback Cap Reductn					0		0	0		0	0	0
Storage Cap Reductn					0		0	0		0	0	0
Reduced v/c Ratio					0.90		0.83	0.33		0.13	0.87	0.46

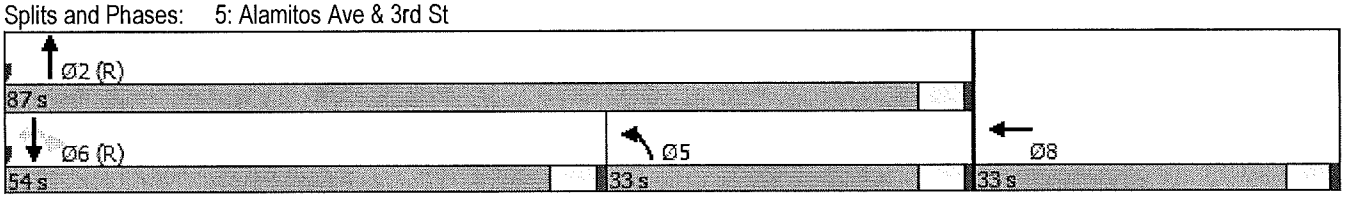
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 37.5 Intersection LOS: D
Intersection Capacity Utilization 87.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Alamitos Ave & 3rd St



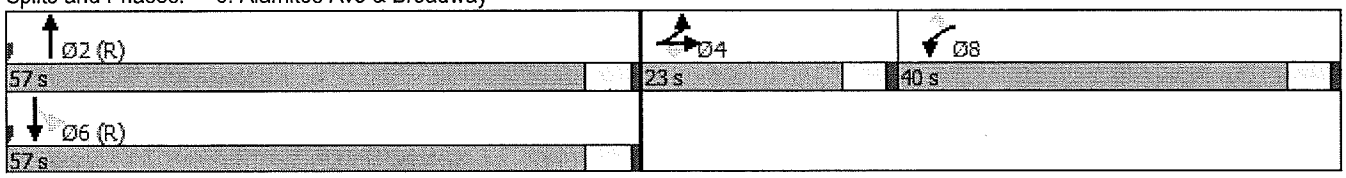
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	257	34	377	0	329	0	588	46	40	629	0
Future Volume (vph)	204	257	34	377	0	329	0	588	46	40	629	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		50	0		0	0		0	120		0
Storage Lanes	2		1	1		1	0		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850			0.850		0.989				
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	3433	3539	1583	1770	0	1583	0	3500	0	1770	1863	0
Flt Permitted	0.950			0.950						0.354		
Satd. Flow (perm)	3433	3539	1583	1770	0	1583	0	3500	0	659	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			64			184		8				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			630			215			551	
Travel Time (s)		13.9			14.3			4.9			12.5	
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
Adj. Flow (vph)	204	257	34	377	0	329	0	588	46	40	629	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	257	34	377	0	329	0	634	0	40	629	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1		1		2		1	2	
Detector Template	Left	Thru	Right	Left		Right		Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20		20		100		20	100	
Trailing Detector (ft)	0	0	0	0		0		0		0	0	
Detector 1 Position(ft)	0	0	0	0		0		0		0	0	
Detector 1 Size(ft)	20	6	20	20		20		6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm	Prot		Perm		NA		Perm	NA	
Protected Phases	4	4		8				2			6	
Permitted Phases			4			8				6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8		8		2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0		6.0		6.0		6.0	6.0	
Minimum Split (s)	23.0	23.0	23.0	11.0		11.0		26.0		30.0	30.0	
Total Split (s)	23.0	23.0	23.0	40.0		40.0		57.0		57.0	57.0	
Total Split (%)	19.2%	19.2%	19.2%	33.3%		33.3%		47.5%		47.5%	47.5%	
Maximum Green (s)	18.0	18.0	18.0	35.0		35.0		52.0		52.0	52.0	
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0		4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0		1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0		5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0		3.0		3.0	3.0	
Recall Mode	None	None	None	None		None		C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0					14.0		18.0	18.0	
Pedestrian Calls (#/hr)	5	5	5					5		5	5	
Act Effct Green (s)	14.4	14.4	14.4	29.9		29.9		60.7		60.7	60.7	
Actuated g/C Ratio	0.12	0.12	0.12	0.25		0.25		0.51		0.51	0.51	
v/c Ratio	0.50	0.61	0.14	0.86		0.62		0.36		0.12	0.67	
Control Delay	53.1	56.0	3.9	61.4		21.6		10.9		0.3	2.2	
Queue Delay	0.0	0.0	0.0	0.2		0.0		0.3		0.0	0.3	
Total Delay	53.1	56.0	3.9	61.6		21.6		11.3		0.3	2.6	
LOS	D	E	A	E		C		B		A	A	
Approach Delay		51.2			43.0			11.3			2.4	
Approach LOS		D			D			B			A	
Queue Length 50th (ft)	76	100	0	277		96		95		0	0	
Queue Length 95th (ft)	112	141	9	379		187		135		m0	m0	
Internal Link Dist (ft)		530			550			135			471	
Turn Bay Length (ft)	120		50							120		
Base Capacity (vph)	514	530	291	516		592		1775		333	942	
Starvation Cap Reductn	0	0	0	0		0		576		0	56	
Spillback Cap Reductn	0	0	0	6		0		0		0	1	
Storage Cap Reductn	0	0	0	0		0		0		0	0	
Reduced v/c Ratio	0.40	0.48	0.12	0.74		0.56		0.53		0.12	0.71	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 25.7 Intersection LOS: C
Intersection Capacity Utilization 72.8% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Alamitos Ave & Broadway



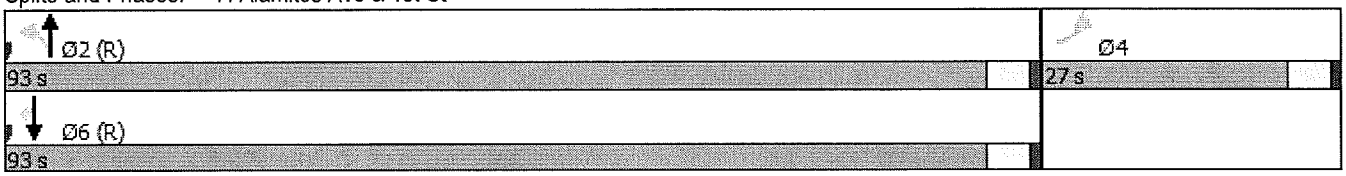
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	104	27	34	439	899	178
Future Volume (vph)	104	27	34	439	899	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	60			0
Storage Lanes	1	0	1			1
Taper Length (ft)	60		60			
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	0.972					0.850
Flt Protected	0.962		0.950			
Satd. Flow (prot)	1742	0	1770	3539	1863	1583
Flt Permitted	0.962		0.266			
Satd. Flow (perm)	1742	0	495	3539	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	10					178
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			219	212	
Travel Time (s)	12.5			5.0	4.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	104	27	34	439	899	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	131	0	34	439	899	178
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (ft)	20		20	100	100	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	26.0		11.0	11.0	19.0	19.0
Total Split (s)	27.0		93.0	93.0	93.0	93.0
Total Split (%)	22.5%		77.5%	77.5%	77.5%	77.5%
Maximum Green (s)	22.0		88.0	88.0	88.0	88.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	14.0				7.0	7.0
Pedestrian Calls (#/hr)	5				5	5
Act Effct Green (s)	14.0		96.0	96.0	96.0	96.0
Actuated g/C Ratio	0.12		0.80	0.80	0.80	0.80
v/c Ratio	0.62		0.09	0.16	0.60	0.14
Control Delay	58.2		1.1	0.8	5.3	0.7
Queue Delay	0.0		0.0	0.0	0.8	0.0
Total Delay	58.2		1.1	0.8	6.1	0.7
LOS	E		A	A	A	A
Approach Delay	58.2			0.8	5.2	
Approach LOS	E			A	A	
Queue Length 50th (ft)	91		1	7	267	5
Queue Length 95th (ft)	147		m3	m13	329	m11
Internal Link Dist (ft)	470			139	132	
Turn Bay Length (ft)			60			
Base Capacity (vph)	327		395	2830	1489	1301
Starvation Cap Reductn	0		0	0	301	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.40		0.09	0.16	0.76	0.14

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 118 (98%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 8.1 Intersection LOS: A
Intersection Capacity Utilization 63.1% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Alamitos Ave & 1st St



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	119	0	437	887	28
Future Volume (vph)	0	119	0	437	887	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.95	0.95
Frt		0.865			0.995	
Flt Protected						
Satd. Flow (prot)	0	1611	0	5085	3522	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	5085	3522	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	472			224	231	
Travel Time (s)	10.7			5.1	5.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	119	0	437	887	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	119	0	437	915	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 39.4% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	534	40	337	1541	62	41	182	147	77	502	433
Future Volume (vph)	202	534	40	337	1541	62	41	182	147	77	502	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		50	230		0	220		0	60		0
Storage Lanes	1		1	2		0	1		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.91	0.91
Frt			0.850		0.994				0.850		0.931	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	3433	3518	0	1770	3539	1583	1770	4734	0
Flt Permitted	0.950			0.950			0.165			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	3518	0	307	3539	1583	1770	4734	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100		4				147		197	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		542			607			703			224	
Travel Time (s)		12.3			13.8			16.0			5.1	
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
Adj. Flow (vph)	202	534	40	337	1541	62	41	182	147	77	502	433
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	534	40	337	1603	0	41	182	147	77	935	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases			4				2		2			

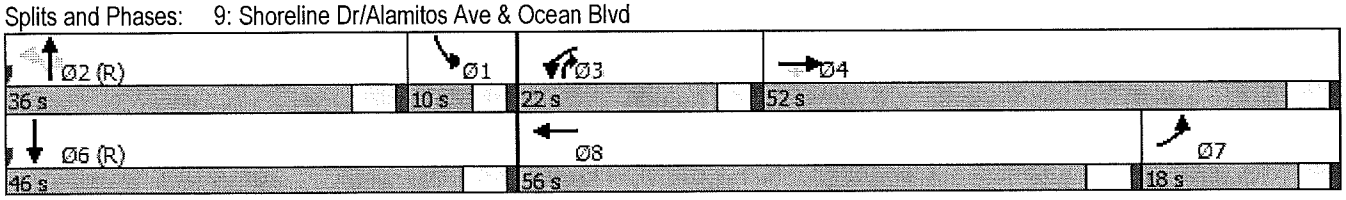
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	36.0	36.0	10.0	36.0		36.0	36.0	10.0	10.0	36.0	
Total Split (s)	18.0	52.0	52.0	22.0	56.0		36.0	36.0	22.0	10.0	46.0	
Total Split (%)	15.0%	43.3%	43.3%	18.3%	46.7%		30.0%	30.0%	18.3%	8.3%	38.3%	
Maximum Green (s)	14.0	47.0	47.0	18.0	51.0		31.0	31.0	18.0	6.0	41.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0		5.0	5.0	4.0	4.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	None	None	C-Max	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		24.0	24.0		24.0		24.0	24.0			24.0	
Pedestrian Calls (#/hr)		5	5		5		5	5			5	
Act Effct Green (s)	14.0	48.8	48.8	16.2	51.0		31.0	31.0	48.2	6.0	41.0	
Actuated g/C Ratio	0.12	0.41	0.41	0.14	0.42		0.26	0.26	0.40	0.05	0.34	
v/c Ratio	0.98	0.26	0.06	0.73	1.07		0.52	0.20	0.20	0.88	0.54	
Control Delay	111.2	24.3	0.1	59.5	78.6		64.0	35.5	3.0	107.1	15.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	111.2	24.3	0.1	59.5	78.6		64.0	35.5	3.0	107.1	15.0	
LOS	F	C	A	E	E		E	D	A	F	B	
Approach Delay		45.7			75.3			25.8			22.0	
Approach LOS		D			E			C			C	
Queue Length 50th (ft)	158	100	0	129	~725		27	58	0	59	113	
Queue Length 95th (ft)	#312	131	0	178	#867		#80	90	30	m#138	163	
Internal Link Dist (ft)		462			527			623			144	
Turn Bay Length (ft)	225		50	230			220			60		
Base Capacity (vph)	206	2069	703	514	1497		79	914	745	88	1747	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.98	0.26	0.06	0.66	1.07		0.52	0.20	0.20	0.88	0.54	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 32 (27%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 52.0 Intersection LOS: D
Intersection Capacity Utilization 96.0% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	1001	268	450	663	61	54	502	749	60	627	21
Future Volume (veh/h)	166	1001	268	450	663	61	54	502	749	60	627	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	166	1001	268	450	663	61	54	502	749	60	627	21
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	222	899	240	414	1967	181	357	1118	1319	316	1118	950
Arrive On Green	0.32	0.32	0.32	0.23	0.60	0.60	1.00	1.00	1.00	0.60	0.60	0.60
Sat Flow, veh/h	727	2765	737	1774	3278	301	780	1863	1583	442	1863	1583
Grp Volume(v), veh/h	166	639	630	450	358	366	54	502	749	60	627	21
Grp Sat Flow(s),veh/h/ln	727	1770	1733	1774	1770	1810	780	1863	1583	442	1863	1583
Q Serve(g_s), s	26.8	39.0	39.0	28.0	12.2	12.2	3.4	0.0	0.0	7.9	24.4	0.6
Cycle Q Clear(g_c), s	39.0	39.0	39.0	28.0	12.2	12.2	29.8	0.0	0.0	10.4	24.4	0.6
Prop In Lane	1.00		0.43	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	222	575	563	414	1062	1086	357	1118	1319	316	1118	950
V/C Ratio(X)	0.75	1.11	1.12	1.09	0.34	0.34	0.15	0.45	0.57	0.19	0.56	0.02
Avail Cap(c_a), veh/h	222	575	563	414	1062	1086	357	1118	1319	316	1118	950
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	40.5	40.5	46.0	12.0	12.0	5.5	0.0	0.0	12.3	14.5	9.7
Incr Delay (d2), s/veh	12.9	71.9	74.8	69.7	0.2	0.2	0.8	1.2	1.6	1.3	2.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	30.5	30.3	21.7	5.9	6.1	0.8	0.4	0.6	1.1	13.0	0.3
LnGrp Delay(d),s/veh	59.8	112.4	115.3	115.7	12.2	12.2	6.3	1.2	1.6	13.6	16.5	9.8
LnGrp LOS	E	F	F	F	B	B	A	A	A	B	B	A
Approach Vol, veh/h		1435			1174			1305			708	
Approach Delay, s/veh		107.6			51.9			1.6			16.1	
Approach LOS		F			D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		78.0	33.0	44.0		78.0		77.0
Change Period (Y+Rc), s		5.0	5.0	* 5		5.0		5.0
Max Green Setting (Gmax), s		39.0	28.0	* 39		39.0		71.0
Max Q Clear Time (g_c+I1), s		31.8	30.0	41.0		26.4		14.2
Green Ext Time (p_c), s		5.6	0.0	0.0		9.0		7.3

Intersection Summary	
HCM 2010 Ctrl Delay	49.5
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	23	56	9	5	14	50	1162	9	8	1149	186
Future Volume (veh/h)	124	23	56	9	5	14	50	1162	9	8	1149	186
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	124	23	56	9	5	14	50	1162	9	8	1149	186
Adj No. of Lanes	1	1	0	0	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	207	72	175	47	24	31	373	2762	21	426	2343	378
Arrive On Green	0.05	0.15	0.15	0.06	0.06	0.06	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1774	482	1174	133	402	535	408	3600	28	477	3053	492
Grp Volume(v), veh/h	124	0	79	28	0	0	50	571	600	8	664	671
Grp Sat Flow(s),veh/h/ln	1774	0	1656	1070	0	0	408	1770	1858	477	1770	1776
Q Serve(g_s), s	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	5.1	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.71	0.32		0.50	1.00		0.02	1.00		0.28
Lane Grp Cap(c), veh/h	207	0	247	102	0	0	373	1358	1425	426	1358	1363
V/C Ratio(X)	0.60	0.00	0.32	0.27	0.00	0.00	0.13	0.42	0.42	0.02	0.49	0.49
Avail Cap(c_a), veh/h	253	0	524	331	0	0	373	1358	1425	426	1358	1363
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.91	0.91	0.91	0.09	0.09	0.09
Uniform Delay (d), s/veh	53.0	0.0	45.6	54.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	2.8	0.0	0.7	1.4	0.0	0.0	0.7	0.9	0.8	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	2.4	0.9	0.0	0.0	0.1	0.3	0.3	0.0	0.0	0.0
LnGrp Delay(d),s/veh	55.8	0.0	46.3	55.5	0.0	0.0	0.7	0.9	0.8	0.0	0.1	0.1
LnGrp LOS	E		D	E			A	A	A	A	A	A
Approach Vol, veh/h		203			28			1221			1343	
Approach Delay, s/veh		52.1			55.5			0.8			0.1	
Approach LOS		D			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		97.1		22.9		97.1	10.9	12.0
Change Period (Y+Rc), s		5.0		5.0		5.0	5.0	* 5
Max Green Setting (Gmax), s		72.0		38.0		72.0	9.0	* 25
Max Q Clear Time (g_c+I1), s		2.0		7.1		2.0	2.0	7.2
Green Ext Time (p_c), s		40.9		0.8		40.9	0.4	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	4.8
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	31	42	3	12	12	18	1171	16	40	1118	31
Future Volume (veh/h)	40	31	42	3	12	12	18	1171	16	40	1118	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	40	31	42	3	12	12	18	1171	16	40	1118	31
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	49	54	40	80	69	463	2954	40	448	2906	81
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	459	545	594	70	889	767	487	3575	49	470	3518	98
Grp Volume(v), veh/h	113	0	0	27	0	0	18	580	607	40	562	587
Grp Sat Flow(s),veh/h/ln	1598	0	0	1726	0	0	487	1770	1854	470	1770	1846
Q Serve(g_s), s	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.2	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.35		0.37	0.11		0.44	1.00		0.03	1.00		0.05
Lane Grp Cap(c), veh/h	185	0	0	190	0	0	463	1462	1532	448	1462	1525
V/C Ratio(X)	0.61	0.00	0.00	0.14	0.00	0.00	0.04	0.40	0.40	0.09	0.38	0.38
Avail Cap(c_a), veh/h	461	0	0	482	0	0	463	1462	1532	448	1462	1525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.84	0.84	0.84	0.86	0.86	0.86
Uniform Delay (d), s/veh	53.3	0.0	0.0	50.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	3.2	0.0	0.0	0.3	0.0	0.0	0.1	0.7	0.6	0.3	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	0.0	0.8	0.0	0.0	0.0	0.3	0.3	0.0	0.3	0.3
LnGrp Delay(d),s/veh	56.5	0.0	0.0	50.8	0.0	0.0	0.1	0.7	0.6	0.3	0.7	0.6
LnGrp LOS	E			D			A	A	A	A	A	A
Approach Vol, veh/h		113			27			1205			1189	
Approach Delay, s/veh		56.5			50.8			0.7			0.6	
Approach LOS		E			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		104.1		15.9		104.1		15.9
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		78.0		32.0		78.0		32.0
Max Q Clear Time (g_c+I1), s		2.0		10.2		2.0		3.7
Green Ext Time (p_c), s		36.7		0.7		36.7		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	3.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	398	44	62	220	53	42	1113	160	173	936	52
Future Volume (veh/h)	50	398	44	62	220	53	42	1113	160	173	936	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	50	398	44	62	220	53	42	1113	160	173	936	52
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	466	396	104	363	87	438	2072	297	349	2273	126
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1102	1863	1583	944	1451	350	567	3108	446	433	3410	189
Grp Volume(v), veh/h	50	398	44	62	0	273	42	633	640	173	486	502
Grp Sat Flow(s),veh/h/ln	1102	1863	1583	944	0	1801	567	1770	1784	433	1770	1829
Q Serve(g_s), s	5.0	24.5	2.6	5.5	0.0	16.1	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	21.1	24.5	2.6	30.0	0.0	16.1	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.25	1.00		0.10
Lane Grp Cap(c), veh/h	188	466	396	104	0	450	438	1180	1189	349	1180	1220
V/C Ratio(X)	0.27	0.85	0.11	0.60	0.00	0.61	0.10	0.54	0.54	0.50	0.41	0.41
Avail Cap(c_a), veh/h	188	466	396	104	0	450	438	1180	1189	349	1180	1220
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.82	0.82	0.82	0.92	0.92	0.92
Uniform Delay (d), s/veh	49.1	42.9	34.7	58.1	0.0	39.8	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.7	14.4	0.1	9.1	0.0	2.3	0.4	1.4	1.4	4.6	1.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	14.5	1.1	2.3	0.0	8.3	0.0	0.5	0.5	0.4	0.3	0.3
LnGrp Delay(d),s/veh	49.9	57.3	34.8	67.2	0.0	42.1	0.4	1.4	1.4	4.6	1.0	0.9
LnGrp LOS	D	E	C	E		D	A	A	A	A	A	A
Approach Vol, veh/h		492			335			1315			1161	
Approach Delay, s/veh		54.5			46.7			1.4			1.5	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		85.0		35.0		85.0		35.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		80.0		30.0		80.0		30.0
Max Q Clear Time (g_c+I1), s		2.0		26.5		2.0		32.0
Green Ext Time (p_c), s		43.4		1.6		43.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	227	53	141	1298	200	96	711	190
Future Volume (veh/h)	0	0	0	0	227	53	141	1298	200	96	711	190
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				0	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h				0	227	53	141	1298	200	96	711	190
Adj No. of Lanes				0	2	0	1	2	0	1	1	1
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	2	0	2	2	2	2	2	2
Cap, veh/h				0	0	0	606	2950	451	261	1071	910
Arrive On Green				0.00	0.00	0.00	0.68	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h					0		1774	3078	471	349	1863	1583
Grp Volume(v), veh/h					0.0		141	742	756	96	711	190
Grp Sat Flow(s),veh/h/ln							1774	1770	1780	349	1863	1583
Q Serve(g_s), s							3.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s							3.6	0.0	0.0	0.0	0.0	0.0
Prop In Lane							1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h							606	1696	1706	261	1071	910
V/C Ratio(X)							0.23	0.44	0.44	0.37	0.66	0.21
Avail Cap(c_a), veh/h							606	1696	1706	261	1071	910
HCM Platoon Ratio							2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)							0.69	0.69	0.69	0.90	0.90	0.90
Uniform Delay (d), s/veh							13.1	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh							0.1	0.6	0.6	3.6	2.9	0.5
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							1.7	0.3	0.3	0.3	0.9	0.1
LnGrp Delay(d),s/veh							13.2	0.6	0.6	3.6	2.9	0.5
LnGrp LOS							B	A	A	A	A	A
Approach Vol, veh/h								1639			997	
Approach Delay, s/veh								1.7			2.5	
Approach LOS								A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		
Phs Duration (G+Y+Rc), s		120.0			46.0	74.0		
Change Period (Y+Rc), s		5.0			5.0	5.0		
Max Green Setting (Gmax), s		85.0			11.0	69.0		
Max Q Clear Time (g_c+I1), s		2.0			5.6	2.0		
Green Ext Time (p_c), s		19.5			4.2	10.3		

Intersection Summary	
HCM 2010 Ctrl Delay	2.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	481	908	69	138	0	173	0	1021	236	90	586	0
Future Volume (veh/h)	481	908	69	138	0	173	0	1021	236	90	586	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	0	1863	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	481	908	69	138	0	173	0	1021	236	90	586	0
Adj No. of Lanes	2	2	1	1	0	1	0	2	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	940	967	433	0	0	0	0	1839	424	255	1199	0
Arrive On Green	0.27	0.27	0.27	0.00	0.00	0.00	0.00	0.64	0.64	1.00	1.00	0.00
Sat Flow, veh/h	3442	3539	1583		0		0	2951	658	440	1863	0
Grp Volume(v), veh/h	481	908	69		0.0		0	631	626	90	586	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583				0	1770	1747	440	1863	0
Q Serve(g_s), s	14.2	30.1	4.0				0.0	23.7	23.9	11.1	0.0	0.0
Cycle Q Clear(g_c), s	14.2	30.1	4.0				0.0	23.7	23.9	35.1	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.38	1.00		0.00
Lane Grp Cap(c), veh/h	940	967	433				0	1139	1124	255	1199	0
V/C Ratio(X)	0.51	0.94	0.16				0.00	0.55	0.56	0.35	0.49	0.00
Avail Cap(c_a), veh/h	946	973	435				0	1139	1124	255	1199	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.78	0.78	0.00
Uniform Delay (d), s/veh	36.8	42.6	33.1				0.0	11.9	11.9	5.4	0.0	0.0
Incr Delay (d2), s/veh	0.5	16.2	0.2				0.0	1.9	2.0	3.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	16.9	1.8				0.0	12.0	12.1	1.5	0.4	0.0
LnGrp Delay(d),s/veh	37.3	58.8	33.3				0.0	13.8	13.9	8.4	1.1	0.0
LnGrp LOS	D	E	C					B	B	A	A	
Approach Vol, veh/h		1458						1257			676	
Approach Delay, s/veh		50.5						13.8			2.1	
Approach LOS		D						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		82.2		37.8		82.2		
Change Period (Y+Rc), s		5.0		5.0		5.0		
Max Green Setting (Gmax), s		61.0		33.0		61.0		
Max Q Clear Time (g_c+I1), s		25.9		32.1		37.1		
Green Ext Time (p_c), s		20.0		0.7		15.7		

Intersection Summary	
HCM 2010 Ctrl Delay	27.3
HCM 2010 LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	181	48	78	1070	654	98
Future Volume (vph)	181	48	78	1070	654	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	0.95	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1741		1770	3539	1863	1583
Flt Permitted	0.96		0.36	1.00	1.00	1.00
Satd. Flow (perm)	1741		669	3539	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	181	48	78	1070	654	98
RTOR Reduction (vph)	9	0	0	0	0	25
Lane Group Flow (vph)	220	0	78	1070	654	73
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	20.4		89.6	89.6	89.6	89.6
Effective Green, g (s)	20.4		89.6	89.6	89.6	89.6
Actuated g/C Ratio	0.17		0.75	0.75	0.75	0.75
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	295		499	2642	1391	1181
v/s Ratio Prot				0.30	c0.35	
v/s Ratio Perm	c0.13		0.12			0.05
v/c Ratio	0.75		0.16	0.40	0.47	0.06
Uniform Delay, d1	47.3		4.4	5.5	5.9	4.0
Progression Factor	1.00		0.38	0.36	0.13	0.11
Incremental Delay, d2	9.8		0.4	0.3	0.9	0.1
Delay (s)	57.1		2.1	2.3	1.7	0.5
Level of Service	E		A	A	A	A
Approach Delay (s)	57.1			2.3	1.5	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱		↑↑↑	↑↑↳	
Traffic Vol, veh/h	0	104	0	1108	600	84
Future Vol, veh/h	0	104	0	1108	600	84
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	104	0	1108	600	84

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	342	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	654	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	654	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	654	-	-
HCM Lane V/C Ratio	-	0.159	-	-
HCM Control Delay (s)	-	11.5	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	377	1561	53	188	833	115	73	641	444	92	321	289
Future Volume (veh/h)	377	1561	53	188	833	115	73	641	444	92	321	289
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	377	1561	0	188	833	115	73	641	444	92	321	289
Adj No. of Lanes	1	3	1	2	2	0	1	2	1	1	3	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	404	2262	704	250	879	121	165	944	537	146	1324	619
Arrive On Green	0.23	0.44	0.00	0.07	0.28	0.28	0.27	0.27	0.27	0.08	0.39	0.39
Sat Flow, veh/h	1774	5085	1583	3442	3125	431	808	3539	1583	1774	3390	1583
Grp Volume(v), veh/h	377	1561	0	188	472	476	73	641	444	92	321	289
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1770	1787	808	1770	1583	1774	1695	1583
Q Serve(g_s), s	25.0	29.5	0.0	6.4	31.3	31.3	10.4	19.5	22.7	6.0	7.6	16.3
Cycle Q Clear(g_c), s	25.0	29.5	0.0	6.4	31.3	31.3	26.7	19.5	22.7	6.0	7.6	16.3
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	404	2262	704	250	498	502	165	944	537	146	1324	619
V/C Ratio(X)	0.93	0.69	0.00	0.75	0.95	0.95	0.44	0.68	0.83	0.63	0.24	0.47
Avail Cap(c_a), veh/h	429	2262	704	430	501	506	165	944	537	146	1324	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	26.7	0.0	54.6	42.3	42.3	49.9	39.4	21.0	53.3	24.6	27.3
Incr Delay (d2), s/veh	26.6	0.9	0.0	4.5	27.5	27.3	8.3	3.9	13.6	8.4	0.4	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.2	13.9	0.0	3.2	19.1	19.3	2.7	10.0	11.9	3.3	3.6	7.6
LnGrp Delay(d),s/veh	72.0	27.6	0.0	59.1	69.7	69.6	58.2	43.3	34.6	61.7	25.0	29.8
LnGrp LOS	E	C		E	E	E	E	D	C	E	C	C
Approach Vol, veh/h		1938			1136			1158			702	
Approach Delay, s/veh		36.2			67.9			40.9			31.8	
Approach LOS		D			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	15.0	37.0	12.7	58.4		52.0	32.3	38.7
Change Period (Y+Rc), s	5.0	* 5	4.0	5.0		5.0	5.0	* 5
Max Green Setting (Gmax), s	7.0	* 32	15.0	48.0		43.0	29.0	* 34
Max Q Clear Time (g_c+I1), s	8.0	28.7	8.4	31.5		18.3	27.0	33.3
Green Ext Time (p_c), s	0.0	1.9	0.3	11.2		4.6	0.3	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	44.0
HCM 2010 LOS	D

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	1001	268	450	663	61	54	502	749	60	627	21
Future Volume (vph)	166	1001	268	450	663	61	54	502	749	60	627	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	300		0	145		0	130		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.968			0.987				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3426	0	1770	3493	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.298			0.950			0.103			0.156		
Satd. Flow (perm)	555	3426	0	1770	3493	0	192	1863	1583	291	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			14				18			64
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		507			578			527			677	
Travel Time (s)		11.5			13.1			12.0			15.4	
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
Adj. Flow (vph)	166	1001	268	450	663	61	54	502	749	60	627	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	1269	0	450	724	0	54	502	749	60	627	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4						2		2	6		6

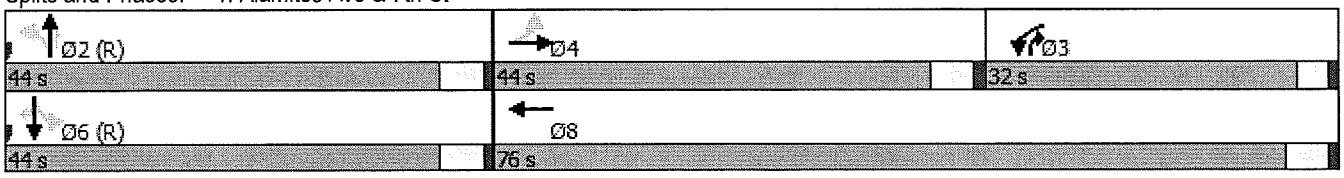
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		3	8		2	2	3	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	33.0	33.0		10.0	26.0		30.0	30.0	10.0	30.0	30.0	30.0
Total Split (s)	44.0	44.0		32.0	76.0		44.0	44.0	32.0	44.0	44.0	44.0
Total Split (%)	36.7%	36.7%		26.7%	63.3%		36.7%	36.7%	26.7%	36.7%	36.7%	36.7%
Maximum Green (s)	39.0	39.0		28.0	71.0		39.0	39.0	28.0	39.0	39.0	39.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead		Lag					Lag			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0			14.0		18.0	18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)	5	5			5		5	5		5	5	5
Act Effct Green (s)	39.0	39.0		28.0	71.0		39.0	39.0	72.0	39.0	39.0	39.0
Actuated g/C Ratio	0.32	0.32		0.23	0.59		0.32	0.32	0.60	0.32	0.32	0.32
v/c Ratio	0.92	1.12		1.09	0.35		0.87	0.83	0.78	0.64	1.04	0.04
Control Delay	90.2	103.3		114.1	12.9		112.6	40.8	18.0	67.2	86.4	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	1.7	0.0	0.0	0.0	0.0
Total Delay	90.2	103.3		114.1	12.9		112.6	42.6	18.0	67.2	86.4	0.1
LOS	F	F		F	B		F	D	B	E	F	A
Approach Delay		101.8			51.7			31.4			82.2	
Approach LOS		F			D			C			F	
Queue Length 50th (ft)	123	~588		~392	140		28	249	270	39	~523	0
Queue Length 95th (ft)	#264	#728		#597	178		#121	#525	237	#112	#750	0
Internal Link Dist (ft)		427			498			447			597	
Turn Bay Length (ft)	55			300			145			130		
Base Capacity (vph)	180	1133		413	2072		62	605	957	94	605	557
Starvation Cap Reductn	0	0		0	0		0	30	1	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.92	1.12		1.09	0.35		0.87	0.87	0.78	0.64	1.04	0.04

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 29 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 66.2 Intersection LOS: E
Intersection Capacity Utilization 115.0% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Alamitos Ave & 7th St



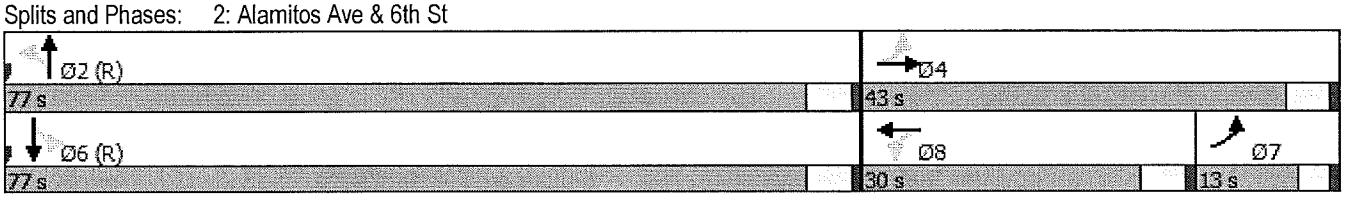
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	23	56	9	5	14	50	1162	9	8	1149	186
Future Volume (vph)	124	23	56	9	5	14	50	1162	9	8	1149	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	225		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.894			0.932			0.999			0.979	
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1770	1665	0	0	1708	0	1770	3536	0	1770	3465	0
Flt Permitted	0.739				0.866		0.172			0.213		
Satd. Flow (perm)	1377	1665	0	0	1503	0	320	3536	0	397	3465	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		56			14			1			27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		536			543			380			527	
Travel Time (s)		12.2			12.3			8.6			12.0	
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
Adj. Flow (vph)	124	23	56	9	5	14	50	1162	9	8	1149	186
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	79	0	0	28	0	50	1171	0	8	1335	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	30.0		30.0	30.0		19.0	19.0		23.0	23.0	
Total Split (s)	13.0	43.0		30.0	30.0		77.0	77.0		77.0	77.0	
Total Split (%)	10.8%	35.8%		25.0%	25.0%		64.2%	64.2%		64.2%	64.2%	
Maximum Green (s)	9.0	38.0		25.0	25.0		72.0	72.0		72.0	72.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag			Lead	Lead							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		18.0		18.0	18.0		7.0	7.0		11.0	11.0	
Pedestrian Calls (#/hr)		5		5	5		5	5		5	5	
Act Effct Green (s)	19.2	18.2			10.2		91.8	91.8		91.8	91.8	
Actuated g/C Ratio	0.16	0.15			0.08		0.76	0.76		0.76	0.76	
v/c Ratio	0.50	0.26			0.20		0.20	0.43		0.03	0.50	
Control Delay	50.9	16.9			32.0		8.6	6.2		3.0	2.4	
Queue Delay	0.0	0.0			0.0		0.0	0.1		0.0	0.5	
Total Delay	50.9	16.9			32.0		8.6	6.3		3.0	2.8	
LOS	D	B			C		A	A		A	A	
Approach Delay		37.6			32.0			6.4			2.8	
Approach LOS		D			C			A			A	
Queue Length 50th (ft)	88	16			11		9	116		1	62	
Queue Length 95th (ft)	124	50			35		25	170		m1	m103	
Internal Link Dist (ft)		456			463			300			447	
Turn Bay Length (ft)							100			225		
Base Capacity (vph)	264	565			324		245	2705		303	2656	
Starvation Cap Reductn	0	0			0		0	336		0	751	
Spillback Cap Reductn	0	0			0		0	44		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.47	0.14			0.09		0.20	0.49		0.03	0.70	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 7.2 Intersection LOS: A
Intersection Capacity Utilization 63.4% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Alamitos Ave & 6th St



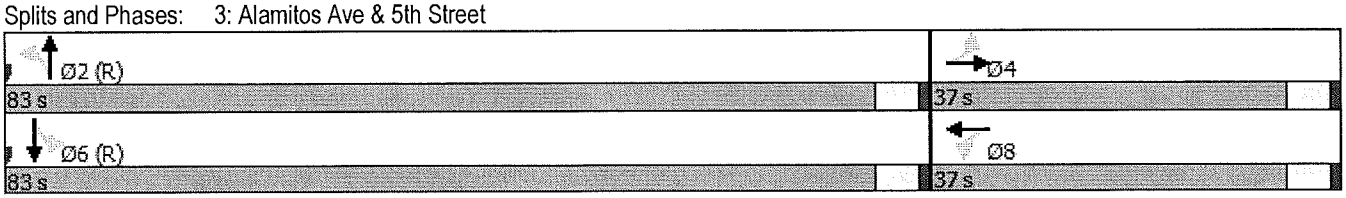
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	31	42	3	12	12	18	1171	16	40	1118	31
Future Volume (vph)	40	31	42	3	12	12	18	1171	16	40	1118	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.950			0.940			0.998			0.996	
Flt Protected		0.983			0.994		0.950			0.950		
Satd. Flow (prot)	0	1740	0	0	1740	0	1770	3532	0	1770	3525	0
Flt Permitted		0.872			0.976		0.229			0.219		
Satd. Flow (perm)	0	1543	0	0	1709	0	427	3532	0	408	3525	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			12			2			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			618			468			380	
Travel Time (s)		12.0			14.0			10.6			8.6	
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
Adj. Flow (vph)	40	31	42	3	12	12	18	1171	16	40	1118	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	113	0	0	27	0	18	1187	0	40	1149	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	11.0		30.0	30.0		19.0	19.0		19.0	19.0	
Total Split (s)	37.0	37.0		37.0	37.0		83.0	83.0		83.0	83.0	
Total Split (%)	30.8%	30.8%		30.8%	30.8%		69.2%	69.2%		69.2%	69.2%	
Maximum Green (s)	32.0	32.0		32.0	32.0		78.0	78.0		78.0	78.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				18.0	18.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)				5	5		5	5		5	5	
Act Effct Green (s)		13.6			13.6		96.4	96.4		96.4	96.4	
Actuated g/C Ratio		0.11			0.11		0.80	0.80		0.80	0.80	
v/c Ratio		0.58			0.13		0.05	0.42		0.12	0.41	
Control Delay		49.5			30.0		1.8	1.6		1.1	1.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.1	
Total Delay		49.5			30.0		1.8	1.7		1.1	1.2	
LOS		D			C		A	A		A	A	
Approach Delay		49.5			30.0			1.7			1.2	
Approach LOS		D			C			A			A	
Queue Length 50th (ft)		67			11		1	39		0	4	
Queue Length 95th (ft)		114			35		m3	60		m2	12	
Internal Link Dist (ft)		450			538			388			300	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		429			464		343	2837		327	2832	
Starvation Cap Reductn		0			0		0	295		0	567	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.26			0.06		0.05	0.47		0.12	0.51	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 19 (16%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 3.9 Intersection LOS: A
Intersection Capacity Utilization 54.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Alamitos Ave & 5th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	398	44	62	220	53	42	1113	160	173	936	52
Future Volume (vph)	50	398	44	62	220	53	42	1113	160	173	936	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	50		0	115		0	155		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.971			0.981			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1809	0	1770	3472	0	1770	3511	0
Flt Permitted	0.353			0.141			0.253			0.171		
Satd. Flow (perm)	658	1863	1583	263	1809	0	471	3472	0	319	3511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			44		10			28			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		549			626			397			468	
Travel Time (s)		12.5			14.2			9.0			10.6	
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
Adj. Flow (vph)	50	398	44	62	220	53	42	1113	160	173	936	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	398	44	62	273	0	42	1273	0	173	988	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		

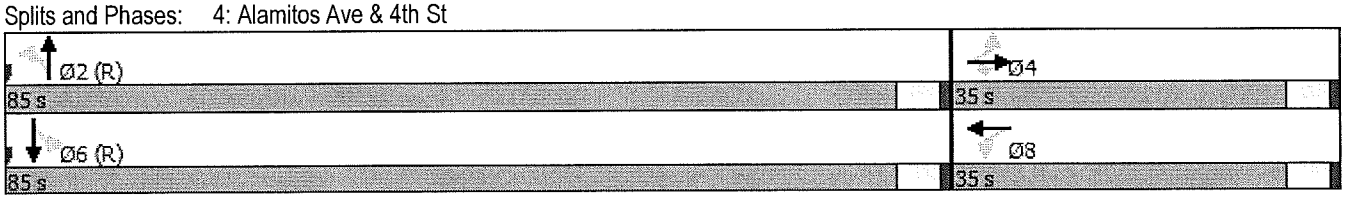
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		23.0	23.0		26.0	26.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		85.0	85.0		85.0	85.0	
Total Split (%)	29.2%	29.2%	29.2%	29.2%	29.2%		70.8%	70.8%		70.8%	70.8%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0		80.0	80.0		80.0	80.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0		11.0	11.0		14.0	14.0	
Pedestrian Calls (#/hr)	5	5	5	5	5		5	5		5	5	
Act Effct Green (s)	28.3	28.3	28.3	28.3	28.3		81.7	81.7		81.7	81.7	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24		0.68	0.68		0.68	0.68	
v/c Ratio	0.32	0.91	0.11	1.02	0.63		0.13	0.54		0.80	0.41	
Control Delay	43.6	69.7	10.8	164.8	46.4		5.8	6.8		35.8	5.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.1		0.0	0.1	
Total Delay	43.6	69.7	10.8	164.8	46.4		5.8	7.0		35.8	5.5	
LOS	D	E	B	F	D		A	A		D	A	
Approach Delay		61.8			68.3			6.9			10.0	
Approach LOS		E			E			A			B	
Queue Length 50th (ft)	32	295	0	47	180		5	246		52	73	
Queue Length 95th (ft)	71	#463	30	#140	273		m10	94		#252	85	
Internal Link Dist (ft)		469			546			317			388	
Turn Bay Length (ft)	55			50			115			155		
Base Capacity (vph)	164	465	428	65	459		320	2373		217	2393	
Starvation Cap Reductn	0	0	0	0	0		0	286		0	426	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.30	0.86	0.10	0.95	0.59		0.13	0.61		0.80	0.50	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 22.4 — Intersection LOS: C
Intersection Capacity Utilization 88.1% — ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Alamitos Ave & 4th St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	227	53	141	1298	200	96	711	190
Future Volume (vph)	0	0	0	0	227	53	141	1298	200	96	711	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	60		0	205		0	110		0
Storage Lanes	0		0	0		0	1		0	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt					0.972			0.980				0.850
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	0	0	3440	0	1770	3468	0	1770	1863	1583
Flt Permitted							0.950			0.140		
Satd. Flow (perm)	0	0	0	0	3440	0	1770	3468	0	261	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					21			35				190
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			470			551			397	
Travel Time (s)		12.0			10.7			12.5			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
Adj. Flow (vph)	0	0	0	0	227	53	141	1298	200	96	711	190
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	280	0	141	1498	0	96	711	190
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					2		1	2		1	2	1
Detector Template					Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)					100		20	100		20	100	20
Trailing Detector (ft)					0		0	0		0	0	0
Detector 1 Position(ft)					0		0	0		0	0	0
Detector 1 Size(ft)					6		20	6		20	6	20
Detector 1 Type					Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)					0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)					0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)					0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type					NA		Prot	NA		Perm	NA	Perm
Protected Phases					8		5	2			6	
Permitted Phases										6		6

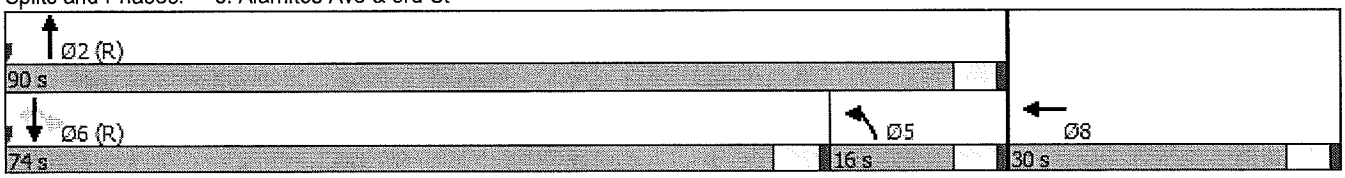
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase					8		5	2		6	6	6
Switch Phase												
Minimum Initial (s)					6.0		6.0	6.0		6.0	6.0	6.0
Minimum Split (s)					30.0		11.0	23.0		19.0	19.0	19.0
Total Split (s)					30.0		16.0	90.0		74.0	74.0	74.0
Total Split (%)					25.0%		13.3%	75.0%		61.7%	61.7%	61.7%
Maximum Green (s)					25.0		11.0	85.0		69.0	69.0	69.0
Yellow Time (s)					4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)					1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)					0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)					5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag							Lag			Lead	Lead	Lead
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)					3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode					None		None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)					7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)					18.0			11.0		7.0	7.0	7.0
Pedestrian Calls (#/hr)					5			5		5	5	5
Act Effct Green (s)					15.7		11.0	94.3		78.3	78.3	78.3
Actuated g/C Ratio					0.13		0.09	0.79		0.65	0.65	0.65
v/c Ratio					0.60		0.87	0.55		0.56	0.59	0.17
Control Delay					50.1		86.0	6.2		26.5	13.2	1.9
Queue Delay					0.0		0.0	0.2		0.0	0.0	0.0
Total Delay					50.1		86.0	6.3		26.5	13.2	1.9
LOS					D		F	A		C	B	A
Approach Delay					50.1			13.2			12.3	
Approach LOS					D			B			B	
Queue Length 50th (ft)					102		109	191		24	176	6
Queue Length 95th (ft)					134		m#198	256		m#139	m342	m20
Internal Link Dist (ft)		450			390			471			317	
Turn Bay Length (ft)							205			110		
Base Capacity (vph)					733		162	2733		170	1215	1099
Starvation Cap Reductn					0		0	422		0	0	0
Spillback Cap Reductn					0		0	0		0	0	0
Storage Cap Reductn					0		0	0		0	0	0
Reduced v/c Ratio					0.38		0.87	0.65		0.56	0.59	0.17

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 5 (4%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 16.4 Intersection LOS: B
Intersection Capacity Utilization 68.0% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Alamitos Ave & 3rd St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	481	908	69	138	0	173	0	1021	236	90	586	0
Future Volume (vph)	481	908	69	138	0	173	0	1021	236	90	586	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		50	0		0	0		0	120		0
Storage Lanes	2		1	1		1	0		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850			0.850		0.972				
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	3433	3539	1583	1770	0	1583	0	3440	0	1770	1863	0
Flt Permitted	0.950			0.950						0.116		
Satd. Flow (perm)	3433	3539	1583	1770	0	1583	0	3440	0	216	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			64			87		34				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			630			215			551	
Travel Time (s)		13.9			14.3			4.9			12.5	
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
Adj. Flow (vph)	481	908	69	138	0	173	0	1021	236	90	586	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	481	908	69	138	0	173	0	1257	0	90	586	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1		1		2		1	2	
Detector Template	Left	Thru	Right	Left		Right		Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20		20		100		20	100	
Trailing Detector (ft)	0	0	0	0		0		0		0	0	
Detector 1 Position(ft)	0	0	0	0		0		0		0	0	
Detector 1 Size(ft)	20	6	20	20		20		6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm	Prot		Perm		NA		Perm	NA	
Protected Phases	4	4		8				2			6	
Permitted Phases			4			8				6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8		8		2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0		6.0		6.0		6.0	6.0	
Minimum Split (s)	23.0	23.0	23.0	11.0		11.0		26.0		30.0	30.0	
Total Split (s)	38.0	38.0	38.0	16.0		16.0		66.0		66.0	66.0	
Total Split (%)	31.7%	31.7%	31.7%	13.3%		13.3%		55.0%		55.0%	55.0%	
Maximum Green (s)	33.0	33.0	33.0	11.0		11.0		61.0		61.0	61.0	
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0		4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0		1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0		5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0		3.0		3.0	3.0	
Recall Mode	None	None	None	None		None		C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0					14.0		18.0	18.0	
Pedestrian Calls (#/hr)	5	5	5					5		5	5	
Act Effct Green (s)	33.0	33.0	33.0	10.9		10.9		61.1		61.1	61.1	
Actuated g/C Ratio	0.28	0.28	0.28	0.09		0.09		0.51		0.51	0.51	
v/c Ratio	0.51	0.93	0.14	0.86		0.78		0.71		0.83	0.62	
Control Delay	39.0	59.4	9.8	95.3		50.0		8.1		56.8	8.5	
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.4		0.0	0.3	
Total Delay	39.0	59.4	9.8	95.3		50.0		8.5		56.8	8.8	
LOS	D	E	A	F		D		A		E	A	
Approach Delay		50.3			70.1			8.5			15.2	
Approach LOS		D			E			A			B	
Queue Length 50th (ft)	162	362	3	107		65		102		60	141	
Queue Length 95th (ft)	215	#487	39	#224		#179		114		m#128	35	
Internal Link Dist (ft)		530			550			135			471	
Turn Bay Length (ft)	120		50							120		
Base Capacity (vph)	944	973	481	162		224		1767		109	948	
Starvation Cap Reductn	0	0	0	0		0		138		0	68	
Spillback Cap Reductn	0	0	0	0		0		0		0	0	
Storage Cap Reductn	0	0	0	0		0		0		0	0	
Reduced v/c Ratio	0.51	0.93	0.14	0.85		0.77		0.77		0.83	0.67	

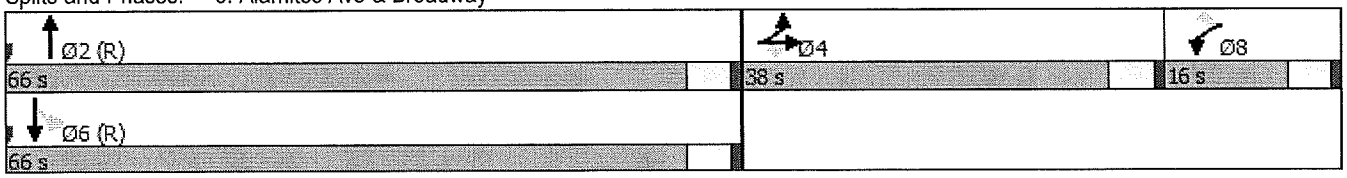
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 20 (17%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 31.3 Intersection LOS: C
Intersection Capacity Utilization 89.3% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Alamitos Ave & Broadway



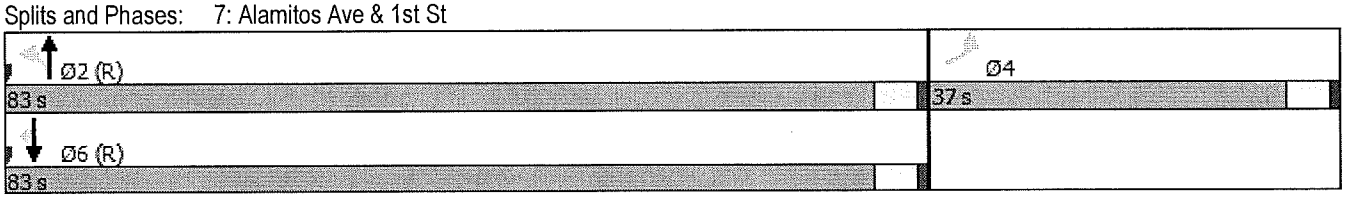
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	181	48	78	1070	654	98
Future Volume (vph)	181	48	78	1070	654	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	60			0
Storage Lanes	1	0	1			1
Taper Length (ft)	60		60			
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	0.972					0.850
Flt Protected	0.962		0.950			
Satd. Flow (prot)	1742	0	1770	3539	1863	1583
Flt Permitted	0.962		0.359			
Satd. Flow (perm)	1742	0	669	3539	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	11					98
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			219	212	
Travel Time (s)	12.5			5.0	4.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	181	48	78	1070	654	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	229	0	78	1070	654	98
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (ft)	20		20	100	100	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	26.0		11.0	11.0	19.0	19.0
Total Split (s)	37.0		83.0	83.0	83.0	83.0
Total Split (%)	30.8%		69.2%	69.2%	69.2%	69.2%
Maximum Green (s)	32.0		78.0	78.0	78.0	78.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	14.0				7.0	7.0
Pedestrian Calls (#/hr)	5				5	5
Act Effct Green (s)	20.4		89.6	89.6	89.6	89.6
Actuated g/C Ratio	0.17		0.75	0.75	0.75	0.75
v/c Ratio	0.75		0.16	0.40	0.47	0.08
Control Delay	60.0		2.5	2.5	1.8	0.2
Queue Delay	0.0		0.0	0.0	0.4	0.0
Total Delay	60.0		2.5	2.5	2.2	0.2
LOS	E		A	A	A	A
Approach Delay	60.0			2.5	1.9	
Approach LOS	E			A	A	
Queue Length 50th (ft)	163		5	34	10	0
Queue Length 95th (ft)	235		m13	m112	m132	m1
Internal Link Dist (ft)	470			139	132	
Turn Bay Length (ft)			60			
Base Capacity (vph)	472		499	2642	1391	1206
Starvation Cap Reductn	0		0	0	302	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.49		0.16	0.40	0.60	0.08

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 25 (21%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 8.5 Intersection LOS: A
Intersection Capacity Utilization 64.9% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Alamitos Ave & 1st St



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	104	0	1108	600	84
Future Volume (vph)	0	104	0	1108	600	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	0.95	0.95
Frt		0.865			0.982	
Flt Protected						
Satd. Flow (prot)	0	1611	0	5085	3476	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	5085	3476	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	472			224	231	
Travel Time (s)	10.7			5.1	5.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	104	0	1108	600	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	104	0	1108	684	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 32.4% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	377	1561	53	188	833	115	73	641	444	92	321	289
Future Volume (vph)	377	1561	53	188	833	115	73	641	444	92	321	289
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		50	230		0	220		0	60		0
Storage Lanes	1		1	2		0	1		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.91	0.91
Frt			0.850		0.982				0.850		0.929	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	3433	3476	0	1770	3539	1583	1770	4724	0
Flt Permitted	0.950			0.950			0.339			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	3476	0	631	3539	1583	1770	4724	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100		13				109		211	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		542			607			703			224	
Travel Time (s)		12.3			13.8			16.0			5.1	
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
Adj. Flow (vph)	377	1561	53	188	833	115	73	641	444	92	321	289
Shared Lane Traffic (%)												
Lane Group Flow (vph)	377	1561	53	188	948	0	73	641	444	92	610	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases			4				2		2			

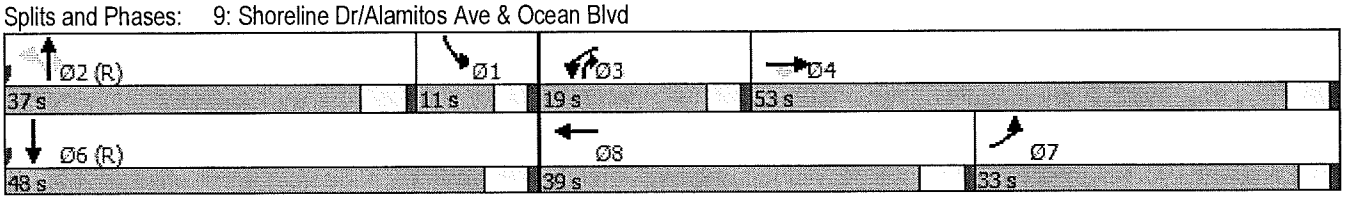
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	36.0	36.0	10.0	36.0		36.0	36.0	10.0	10.0	36.0	
Total Split (s)	33.0	53.0	53.0	19.0	39.0		37.0	37.0	19.0	11.0	48.0	
Total Split (%)	27.5%	44.2%	44.2%	15.8%	32.5%		30.8%	30.8%	15.8%	9.2%	40.0%	
Maximum Green (s)	29.0	48.0	48.0	15.0	34.0		32.0	32.0	15.0	7.0	43.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0		5.0	5.0	4.0	4.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	None	None	C-Max	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		24.0	24.0		24.0		24.0	24.0			24.0	
Pedestrian Calls (#/hr)		5	5		5		5	5			5	
Act Effct Green (s)	27.9	49.9	49.9	12.0	34.0		33.1	33.1	46.1	7.0	44.1	
Actuated g/C Ratio	0.23	0.42	0.42	0.10	0.28		0.28	0.28	0.38	0.06	0.37	
v/c Ratio	0.92	0.74	0.07	0.55	0.95		0.42	0.66	0.66	0.89	0.33	
Control Delay	73.2	32.3	0.5	57.1	61.3		45.3	42.5	20.3	107.1	11.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	73.2	32.3	0.5	57.1	61.3		45.3	42.5	20.3	107.1	11.1	
LOS	E	C	A	E	E		D	D	C	F	B	
Approach Delay		39.2			60.6			34.2			23.7	
Approach LOS		D			E			C			C	
Queue Length 50th (ft)	283	360	0	72	375		47	234	169	69	25	
Queue Length 95th (ft)	#456	438	3	108	#511		98	301	249	#174	60	
Internal Link Dist (ft)		462			527			623			144	
Turn Bay Length (ft)	225		50	230			220			60		
Base Capacity (vph)	427	2113	716	429	994		174	976	712	103	1870	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.88	0.74	0.07	0.44	0.95		0.42	0.66	0.62	0.89	0.33	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 29 (24%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 40.8 Intersection LOS: D
Intersection Capacity Utilization 85.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd



APPENDIX B-VII

YEAR 2020 CUMULATIVE PLUS PROJECT TRAFFIC CONDITIONS (ICU METHODOLOGY)

AM Cumulative Plus Project Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Alamitos Avenue at 7th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.004
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Alamitos Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	56	478	499	58	556	65	115	462	114	467	1208	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	56	478	499	58	556	65	115	462	114	467	1208	60
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	56	478	499	58	556	65	115	462	114	467	1208	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	56	478	499	58	556	65	115	462	114	467	1208	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	478	499	58	556	65	115	462	114	467	1208	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	56	478	499	58	556	65	115	462	114	467	1208	60
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.60	0.40	1.00	1.91	0.09
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	2567	633	1600	3049	151
Capacity Analysis Module:												
Vol/Sat:	0.04	0.30	0.31	0.04	0.35	0.04	0.07	0.18	0.18	0.29	0.40	0.40
Crit Moves:	****				****			****		****		

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AM Cumulative Plus Project Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Alamitos Avenue at 6th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.981
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	164	Level Of Service:	E

Street Name:	Alamitos Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permit+Prot			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	0 1	0	0 0	1! 0	0
Volume Module:												
Base Vol:	50	858	9	5	953	182	151	14	49	10	5	26
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	858	9	5	953	182	151	14	49	10	5	26
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	858	9	5	953	182	151	14	49	10	5	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	858	9	5	953	182	151	14	49	10	5	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	858	9	5	953	182	151	14	49	10	5	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	858	9	5	953	182	151	14	49	10	5	26
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.84	0.16	1.00	0.22	0.78	0.24	0.12	0.64
Final Sat.:	1600	1600	1600	1600	1343	257	1600	356	1244	390	195	1015
Capacity Analysis Module:												
Vol/Sat:	0.03	0.54	0.01	0.00	0.71	0.71	0.09	0.04	0.04	0.03	0.03	0.03
Crit Moves:	****				****		****				****	

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AM Cumulative Plus Project Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Alamitos Avenue at 5th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.844
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	78	Level Of Service:	D

Street Name:	Alamitos Avenue						5th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	52	869	7	24	931	81	52	22	28	5	43	26
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	52	869	7	24	931	81	52	22	28	5	43	26
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	52	869	7	24	931	81	52	22	28	5	43	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	52	869	7	24	931	81	52	22	28	5	43	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	869	7	24	931	81	52	22	28	5	43	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	52	869	7	24	931	81	52	22	28	5	43	26
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.99	0.01	1.00	0.92	0.08	0.51	0.22	0.27	0.07	0.58	0.35
Final Sat.:	1600	1587	13	1600	1472	128	816	345	439	108	930	562
Capacity Analysis Module:												
Vol/Sat:	0.03	0.55	0.55	0.02	0.63	0.63	0.03	0.06	0.06	0.00	0.05	0.05
Crit Moves:	****				****		****				****	

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AM Cumulative Plus Project Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Alamitos Avenue at 4th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.057
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Alamitos Avenue						4th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	90	814	46	98	819	44	46	206	23	192	455	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	814	46	98	819	44	46	206	23	192	455	77
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	814	46	98	819	44	46	206	23	192	455	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	814	46	98	819	44	46	206	23	192	455	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	814	46	98	819	44	46	206	23	192	455	77
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	814	46	98	819	44	46	206	23	192	455	77
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.95	0.05	1.00	0.95	0.05	1.00	1.00	1.00	1.00	0.86	0.14
Final Sat.:	1600	1514	86	1600	1518	82	1600	1600	1600	1600	1368	232
Capacity Analysis Module:												
Vol/Sat:	0.06	0.54	0.54	0.06	0.54	0.54	0.03	0.13	0.01	0.12	0.33	0.33
Crit Moves:	****				****		****				****	

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AM Cumulative Plus Project Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alamitos Avenue at 3rd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.172
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Alamitos Avenue						3rd Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	0 0	0 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	342	782	26	31	670	253	0	0	0	0	669	72
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	342	782	26	31	670	253	0	0	0	0	669	72
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	342	782	26	31	670	253	0	0	0	0	669	72
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	342	782	26	31	670	253	0	0	0	0	669	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	342	782	26	31	670	253	0	0	0	0	669	72
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	342	782	26	31	670	253	0	0	0	0	669	72
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.73	0.27	0.00	0.00	0.00	0.00	1.81	0.19
Final Sat.:	1600	1600	1600	1600	1161	439	0	0	0	0	2889	311
Capacity Analysis Module:												
Vol/Sat:	0.21	0.49	0.02	0.02	0.58	0.58	0.00	0.00	0.00	0.00	0.23	0.23
Crit Moves:	****				****							****

AM Cumulative Plus Project Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Alamitos Avenue at Broadway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.906
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	110	Level Of Service:	E

Street Name:	Alamitos Avenue						Broadway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 0	1	1 0	1 0	0	1 0	2 0	1	1 0	0 0	1
Volume Module:												
Base Vol:	0	588	46	40	629	0	204	257	34	377	0	329
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	588	46	40	629	0	204	257	34	377	0	329
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	588	46	40	629	0	204	257	34	377	0	329
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	588	46	40	629	0	204	257	34	377	0	329
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	588	46	40	629	0	204	257	34	377	0	329
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	588	46	40	629	0	204	257	34	377	0	329
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	2.00	1.00	1.00	0.00	1.00
Final Sat.:	0	1600	1600	1600	1600	0	1600	3200	1600	1600	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.37	0.03	0.03	0.39	0.00	0.13	0.08	0.02	0.24	0.00	0.21
Crit Moves:		****		****			****			****		

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AM Cumulative Plus Project Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Alamitos Avenue at 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.765
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	60	Level Of Service:	C

Street Name:	Alamitos Avenue						1st Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	0	0 0	1 0	1	0 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	34	439	0	0	899	178	104	0	27	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	439	0	0	899	178	104	0	27	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	34	439	0	0	899	178	104	0	27	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	34	439	0	0	899	178	104	0	27	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	439	0	0	899	178	104	0	27	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	439	0	0	899	178	104	0	27	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.00	1.00	0.79	0.00	0.21	0.00	0.00	0.00
Final Sat.:	1600	1600	0	0	1600	1600	1270	0	330	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.27	0.00	0.00	0.56	0.11	0.08	0.00	0.08	0.00	0.00	0.00
Crit Moves:	****				****				****			

AM Cumulative Plus Project Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Alamitos Avenue/Shoreline Drive at Ocean Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.964
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Alamitos Avenue/Shoreline Drive						Ocean Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	3 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	41	182	147	77	502	433	202	534	40	337	1541	62
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	182	147	77	502	433	202	534	40	337	1541	62
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	182	147	77	502	433	202	534	40	337	1541	62
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	41	182	147	77	502	433	202	534	40	337	1541	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	182	147	77	502	433	202	534	40	337	1541	62
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	182	147	77	502	433	202	534	40	337	1541	62
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	2.00	1.92	0.08
Final Sat.:	1600	3200	1600	1600	3200	1600	1600	4800	1600	2880	3076	124
Capacity Analysis Module:												
Vol/Sat:	0.03	0.06	0.09	0.05	0.16	0.27	0.13	0.11	0.03	0.12	0.50	0.50
OvlAdjV/S:			0.00									
Crit Moves:					****		****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Alamitos Avenue at 7th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.333
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Alamitos Avenue						7th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	54	502	749	60	627	21	166	1001	268	450	663	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	502	749	60	627	21	166	1001	268	450	663	61
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	54	502	749	60	627	21	166	1001	268	450	663	61
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	54	502	749	60	627	21	166	1001	268	450	663	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	502	749	60	627	21	166	1001	268	450	663	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	502	749	60	627	21	166	1001	268	450	663	61
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.58	0.42	1.00	1.83	0.17
Final Sat.:	1600	1600	1600	1600	1600	1600	1600	2524	676	1600	2930	270
Capacity Analysis Module:												
Vol/Sat:	0.03	0.31	0.47	0.04	0.39	0.01	0.10	0.40	0.40	0.28	0.23	0.23
Crit Moves:			****	****				****		****		

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2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Alamitos Avenue at 6th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.081
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Alamitos Avenue						6th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permit+Prot			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	0 1	0	0 0	1! 0	0
Volume Module:												
Base Vol:	50	1162	9	8	1149	186	124	23	56	9	5	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	1162	9	8	1149	186	124	23	56	9	5	14
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	1162	9	8	1149	186	124	23	56	9	5	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	1162	9	8	1149	186	124	23	56	9	5	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	1162	9	8	1149	186	124	23	56	9	5	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	1162	9	8	1149	186	124	23	56	9	5	14
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.86	0.14	1.00	0.29	0.71	0.32	0.18	0.50
Final Sat.:	1600	1600	1600	1600	1377	223	1600	466	1134	514	286	800
Capacity Analysis Module:												
Vol/Sat:	0.03	0.73	0.01	0.01	0.83	0.83	0.08	0.05	0.05	0.02	0.02	0.02
Crit Moves:	****				****		****				****	

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PM Cumulative Plus Project Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Alamitos Avenue at 5th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.939
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	125	Level Of Service:	E

Street Name:	Alamitos Avenue						5th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	18	1171	16	40	1118	31	40	31	42	3	12	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	18	1171	16	40	1118	31	40	31	42	3	12	12
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	18	1171	16	40	1118	31	40	31	42	3	12	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	18	1171	16	40	1118	31	40	31	42	3	12	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	18	1171	16	40	1118	31	40	31	42	3	12	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	18	1171	16	40	1118	31	40	31	42	3	12	12
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.99	0.01	1.00	0.97	0.03	0.35	0.27	0.38	0.11	0.45	0.44
Final Sat.:	1600	1578	22	1600	1557	43	566	439	595	178	711	711
Capacity Analysis Module:												
Vol/Sat:	0.01	0.74	0.74	0.03	0.72	0.72	0.03	0.07	0.07	0.00	0.02	0.02
Crit Moves:		****		****				****		****		

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PM Cumulative Plus Project Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Alamitos Avenue at 4th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.291
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Alamitos Avenue						4th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	42	1113	160	173	936	52	50	398	44	62	220	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	1113	160	173	936	52	50	398	44	62	220	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	1113	160	173	936	52	50	398	44	62	220	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	42	1113	160	173	936	52	50	398	44	62	220	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	1113	160	173	936	52	50	398	44	62	220	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	1113	160	173	936	52	50	398	44	62	220	53
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.87	0.13	1.00	0.95	0.05	1.00	1.00	1.00	1.00	0.81	0.19
Final Sat.:	1600	1399	201	1600	1516	84	1600	1600	1600	1600	1289	311
Capacity Analysis Module:												
Vol/Sat:	0.03	0.80	0.80	0.11	0.62	0.62	0.03	0.25	0.03	0.04	0.17	0.17
Crit Moves:		****		****				****		****		

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PM Cumulative Plus Project Traffic Conditions
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alamitos Avenue at 3rd Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.049
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Alamitos Avenue						3rd Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	0 0	0 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	141	1298	200	96	711	190	0	0	0	0	227	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	141	1298	200	96	711	190	0	0	0	0	227	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	141	1298	200	96	711	190	0	0	0	0	227	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	141	1298	200	96	711	190	0	0	0	0	227	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	141	1298	200	96	711	190	0	0	0	0	227	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	141	1298	200	96	711	190	0	0	0	0	227	53
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.79	0.21	0.00	0.00	0.00	0.00	1.62	0.38
Final Sat.:	1600	1600	1600	1600	1263	337	0	0	0	0	2594	606
Capacity Analysis Module:												
Vol/Sat:	0.09	0.81	0.13	0.06	0.56	0.56	0.00	0.00	0.00	0.00	0.09	0.09
Crit Moves:		****									****	

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PM Cumulative Plus Project Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Alamitos Avenue at Broadway

Cycle (sec):	100	Critical Vol./Cap.(X):	1.253
Loss Time (sec):	15	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Alamitos Avenue						Broadway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 0	1	1 0	1 0	0	1 0	2 0	1	1 0	0 0	1
Volume Module:												
Base Vol:	0	1021	236	90	586	0	481	908	69	138	0	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1021	236	90	586	0	481	908	69	138	0	173
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1021	236	90	586	0	481	908	69	138	0	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1021	236	90	586	0	481	908	69	138	0	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1021	236	90	586	0	481	908	69	138	0	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1021	236	90	586	0	481	908	69	138	0	173
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	1.00	2.00	1.00	1.00	0.00	1.00
Final Sat.:	0	1600	1600	1600	1600	0	1600	3200	1600	1600	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.64	0.15	0.06	0.37	0.00	0.30	0.28	0.04	0.09	0.00	0.11
Crit Moves:		****		****			****					****

PM Cumulative Plus Project Traffic Conditions
2-16-3754-1 Alamitos Avenue Road Diet, Long Beach

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 Alamitos Avenue at 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.912
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	106	Level Of Service:	E

Street Name:	Alamitos Avenue						1st Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	0	0 0	1 0	1	0 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	78	1070	0	0	654	98	181	0	48	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	78	1070	0	0	654	98	181	0	48	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	78	1070	0	0	654	98	181	0	48	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	78	1070	0	0	654	98	181	0	48	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	1070	0	0	654	98	181	0	48	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	78	1070	0	0	654	98	181	0	48	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.00	1.00	0.79	0.00	0.21	0.00	0.00	0.00
Final Sat.:	1600	1600	0	0	1600	1600	1265	0	335	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.67	0.00	0.00	0.41	0.06	0.14	0.00	0.14	0.00	0.00	0.00
Crit Moves:		****		****			****					

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Alamitos Avenue/Shoreline Drive at Ocean Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.982
Loss Time (sec):	18	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	157	Level Of Service:	E

Street Name:	Alamitos Avenue/Shoreline Drive						Ocean Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	3 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	73	641	444	92	321	289	377	1561	53	188	833	115
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	73	641	444	92	321	289	377	1561	53	188	833	115
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	73	641	444	92	321	289	377	1561	53	188	833	115
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	73	641	444	92	321	289	377	1561	53	188	833	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	73	641	444	92	321	289	377	1561	53	188	833	115
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	73	641	444	92	321	289	377	1561	53	188	833	115
OvlAdjVol:			340									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	2.00	1.76	0.24
Final Sat.:	1600	3200	1600	1600	3200	1600	1600	4800	1600	2880	2812	388
Capacity Analysis Module:												
Vol/Sat:	0.05	0.20	0.28	0.06	0.10	0.18	0.24	0.33	0.03	0.07	0.30	0.30
OvlAdjV/S:			0.21									
Crit Moves:			****	****			****				****	

APPENDIX B-VIII

YEAR 2020 CUMULATIVE PLUS PROJECT TRAFFIC CONDITIONS (HCM METHODOLOGY)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	462	114	467	1208	60	56	478	499	58	556	65
Future Volume (veh/h)	115	462	114	467	1208	60	56	478	499	58	556	65
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	115	462	114	467	1208	60	56	478	499	58	556	65
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	155	1151	282	355	2231	111	334	1025	1188	342	1025	871
Arrive On Green	0.41	0.41	0.41	0.20	0.65	0.65	0.92	0.92	0.92	0.55	0.55	0.55
Sat Flow, veh/h	435	2819	691	1774	3432	170	800	1863	1583	573	1863	1583
Grp Volume(v), veh/h	115	289	287	467	622	646	56	478	499	58	556	65
Grp Sat Flow(s),veh/h/ln	435	1770	1741	1774	1770	1833	800	1863	1583	573	1863	1583
Q Serve(g_s), s	26.2	13.8	14.0	24.0	22.8	22.8	4.1	4.4	0.0	6.9	23.0	2.3
Cycle Q Clear(g_c), s	49.0	13.8	14.0	24.0	22.8	22.8	28.9	4.4	0.0	13.7	23.0	2.3
Prop In Lane	1.00		0.40	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	155	723	711	355	1150	1191	334	1025	1188	342	1025	871
V/C Ratio(X)	0.74	0.40	0.40	1.32	0.54	0.54	0.17	0.47	0.42	0.17	0.54	0.07
Avail Cap(c_a), veh/h	155	723	711	355	1150	1191	334	1025	1188	342	1025	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.75	0.75	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	25.1	25.2	48.0	11.3	11.3	9.4	2.4	0.7	17.2	17.3	12.7
Incr Delay (d2), s/veh	17.4	0.4	0.4	161.0	0.5	0.5	0.8	1.2	0.8	1.1	2.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	6.8	6.8	27.6	11.2	11.6	1.0	2.3	1.1	1.2	12.3	1.1
LnGrp Delay(d),s/veh	66.6	25.5	25.5	209.0	11.9	11.8	10.2	3.5	1.5	18.3	19.4	12.8
LnGrp LOS	E	C	C	F	B	B	B	A	A	B	B	B
Approach Vol, veh/h		691			1735			1033			679	
Approach Delay, s/veh		32.3			64.9			2.9			18.7	
Approach LOS		C			E			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		72.0	29.0	54.0		72.0		83.0
Change Period (Y+Rc), s		5.0	5.0	* 5		5.0		5.0
Max Green Setting (Gmax), s		33.0	24.0	* 49		33.0		77.0
Max Q Clear Time (g_c+I1), s		30.9	26.0	51.0		25.0		24.8
Green Ext Time (p_c), s		1.7	0.0	0.0		5.5		15.6

Intersection Summary	
HCM 2010 Ctrl Delay	36.4
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	14	49	10	5	26	50	858	9	5	953	182
Future Volume (veh/h)	151	14	49	10	5	26	50	858	9	5	953	182
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	151	14	49	10	5	26	50	858	9	5	953	182
Adj No. of Lanes	1	1	0	0	1	0	1	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	240	48	168	50	15	49	448	1462	1243	559	1194	228
Arrive On Green	0.05	0.13	0.13	0.05	0.05	0.05	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1774	364	1274	261	318	1003	494	1863	1583	636	1521	290
Grp Volume(v), veh/h	151	0	63	41	0	0	50	858	9	5	0	1135
Grp Sat Flow(s),veh/h/ln	1774	0	1638	1582	0	0	494	1863	1583	636	0	1811
Q Serve(g_s), s	6.0	0.0	4.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.0	0.0	4.2	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.78	0.24		0.63	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	240	0	216	114	0	0	448	1462	1243	559	0	1422
V/C Ratio(X)	0.63	0.00	0.29	0.36	0.00	0.00	0.11	0.59	0.01	0.01	0.00	0.80
Avail Cap(c_a), veh/h	240	0	478	360	0	0	448	1462	1243	559	0	1422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.78	0.78	0.78	0.09	0.00	0.09
Uniform Delay (d), s/veh	51.5	0.0	47.0	55.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	5.2	0.0	0.7	1.9	0.0	0.0	0.4	1.4	0.0	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	1.9	1.4	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.2
LnGrp Delay(d),s/veh	56.7	0.0	47.8	57.6	0.0	0.0	0.4	1.4	0.0	0.0	0.0	0.4
LnGrp LOS	E		D	E			A	A	A	A		A
Approach Vol, veh/h		214			41			917			1140	
Approach Delay, s/veh		54.1			57.6			1.3			0.4	
Approach LOS		D			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		99.2		20.8		99.2	10.0	10.8
Change Period (Y+Rc), s		5.0		5.0		5.0	4.0	5.0
Max Green Setting (Gmax), s		75.0		35.0		75.0	6.0	25.0
Max Q Clear Time (g_c+I1), s		2.0		6.2		2.0	8.0	5.0
Green Ext Time (p_c), s		38.3		0.6		38.3	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	22	28	5	43	26	52	869	7	24	931	81
Future Volume (veh/h)	52	22	28	5	43	26	52	869	7	24	931	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	52	22	28	5	43	26	52	869	7	24	931	81
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	36	37	36	89	51	523	1540	12	586	1410	123
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	747	437	448	53	1088	618	555	1845	15	630	1690	147
Grp Volume(v), veh/h	102	0	0	74	0	0	52	0	876	24	0	1012
Grp Sat Flow(s),veh/h/ln	1631	0	0	1759	0	0	555	0	1860	630	0	1837
Q Serve(g_s), s	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.1	0.0	0.0	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.51		0.27	0.07		0.35	1.00		0.01	1.00		0.08
Lane Grp Cap(c), veh/h	179	0	0	177	0	0	523	0	1552	586	0	1533
V/C Ratio(X)	0.57	0.00	0.00	0.42	0.00	0.00	0.10	0.00	0.56	0.04	0.00	0.66
Avail Cap(c_a), veh/h	367	0	0	393	0	0	523	0	1552	586	0	1533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.54	0.00	0.54	0.47	0.00	0.47
Uniform Delay (d), s/veh	53.7	0.0	0.0	52.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	2.8	0.0	0.0	1.6	0.0	0.0	0.2	0.0	0.8	0.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.5
LnGrp Delay(d),s/veh	56.5	0.0	0.0	54.3	0.0	0.0	0.2	0.0	0.8	0.1	0.0	1.1
LnGrp LOS	E			D			A		A	A		A
Approach Vol, veh/h		102			74			928			1036	
Approach Delay, s/veh		56.5			54.3			0.8			1.0	
Approach LOS		E			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		105.1		14.9		105.1		14.9
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		85.0		25.0		85.0		25.0
Max Q Clear Time (g_c+I1), s		2.0		9.1		2.0		6.9
Green Ext Time (p_c), s		34.9		0.8		34.9		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	5.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	206	23	192	455	77	90	814	46	98	819	44
Future Volume (veh/h)	46	206	23	192	455	77	90	814	46	98	819	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	46	206	23	192	455	77	90	814	46	98	819	44
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	636	541	358	531	90	427	1004	57	428	1008	54
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	868	1863	1583	1147	1553	263	638	1747	99	640	1752	94
Grp Volume(v), veh/h	46	206	23	192	0	532	90	0	860	98	0	863
Grp Sat Flow(s),veh/h/ln	868	1863	1583	1147	0	1816	638	0	1845	640	0	1846
Q Serve(g_s), s	6.2	9.8	1.2	17.9	0.0	32.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	39.0	9.8	1.2	27.7	0.0	32.7	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.05	1.00		0.05
Lane Grp Cap(c), veh/h	120	636	541	358	0	620	427	0	1061	428	0	1062
V/C Ratio(X)	0.38	0.32	0.04	0.54	0.00	0.86	0.21	0.00	0.81	0.23	0.00	0.81
Avail Cap(c_a), veh/h	120	636	541	358	0	621	427	0	1061	428	0	1062
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.78	0.00	0.78	0.67	0.00	0.67
Uniform Delay (d), s/veh	54.9	29.2	26.4	39.5	0.0	36.8	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	2.0	0.3	0.0	1.6	0.0	11.5	0.9	0.0	5.3	0.8	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	5.1	0.5	5.8	0.0	18.4	0.1	0.0	1.6	0.1	0.0	1.4
LnGrp Delay(d),s/veh	56.9	29.5	26.4	41.1	0.0	48.3	0.9	0.0	5.3	0.8	0.0	4.7
LnGrp LOS	E	C	C	D		D	A		A	A		A
Approach Vol, veh/h		275			724			950			961	
Approach Delay, s/veh		33.9			46.4			4.9			4.3	
Approach LOS		C			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		74.0		46.0		74.0		46.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		69.0		41.0		69.0		41.0
Max Q Clear Time (g_c+I1), s		2.0		41.0		2.0		34.7
Green Ext Time (p_c), s		29.1		0.0		29.1		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	669	72	342	782	26	31	670	253
Future Volume (veh/h)	0	0	0	0	669	72	342	782	26	31	670	253
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				0	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				0	669	72	342	782	26	31	670	253
Adj No. of Lanes				0	2	0	1	1	1	1	1	0
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	2	0	2	2	2	2	2	2
Cap, veh/h				0	0	0	769	1785	1517	385	623	235
Arrive On Green				0.00	0.00	0.00	0.87	1.00	1.00	0.97	0.97	0.97
Sat Flow, veh/h					0		1774	1863	1583	672	1290	487
Grp Volume(v), veh/h					0.0		342	782	26	31	0	923
Grp Sat Flow(s),veh/h/ln							1774	1863	1583	672	0	1777
Q Serve(g_s), s							5.0	0.0	0.0	0.2	0.0	58.0
Cycle Q Clear(g_c), s							5.0	0.0	0.0	0.2	0.0	58.0
Prop In Lane							1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h							769	1785	1517	385	0	859
V/C Ratio(X)							0.44	0.44	0.02	0.08	0.00	1.07
Avail Cap(c_a), veh/h							769	1785	1517	385	0	859
HCM Platoon Ratio							2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)							0.69	0.69	0.69	0.60	0.00	0.60
Uniform Delay (d), s/veh							4.9	0.0	0.0	1.0	0.0	2.0
Incr Delay (d2), s/veh							0.3	0.5	0.0	0.2	0.0	46.8
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							2.3	0.3	0.0	0.1	0.0	25.9
LnGrp Delay(d),s/veh							5.1	0.5	0.0	1.3	0.0	48.8
LnGrp LOS							A	A	A	A		F
Approach Vol, veh/h								1150			954	
Approach Delay, s/veh								1.9			47.2	
Approach LOS								A			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		
Phs Duration (G+Y+Rc), s		120.0			57.0	63.0		
Change Period (Y+Rc), s		5.0			5.0	5.0		
Max Green Setting (Gmax), s		85.0			22.0	58.0		
Max Q Clear Time (g_c+I1), s		2.0			7.0	60.0		
Green Ext Time (p_c), s		8.9			6.1	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	257	34	377	0	329	0	588	46	40	629	0
Future Volume (veh/h)	204	257	34	377	0	329	0	588	46	40	629	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	0	1863	0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	204	257	34	377	0	329	0	588	46	40	629	0
Adj No. of Lanes	1	2	1	1	0	1	0	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	243	486	217	0	0	0	0	1452	1234	595	1452	0
Arrive On Green	0.14	0.14	0.14	0.00	0.00	0.00	0.00	0.78	0.78	1.00	1.00	0.00
Sat Flow, veh/h	1774	3539	1583		0		0	1863	1583	790	1863	0
Grp Volume(v), veh/h	204	257	34		0.0		0	588	46	40	629	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583				0	1863	1583	790	1863	0
Q Serve(g_s), s	13.5	8.1	2.3				0.0	12.2	0.8	0.8	0.0	0.0
Cycle Q Clear(g_c), s	13.5	8.1	2.3				0.0	12.2	0.8	13.1	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	243	486	217				0	1452	1234	595	1452	0
V/C Ratio(X)	0.84	0.53	0.16				0.00	0.40	0.04	0.07	0.43	0.00
Avail Cap(c_a), veh/h	296	590	264				0	1452	1234	595	1452	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.09	0.09	0.00
Uniform Delay (d), s/veh	50.5	48.2	45.6				0.0	4.3	3.0	0.9	0.0	0.0
Incr Delay (d2), s/veh	16.1	0.9	0.3				0.0	0.8	0.1	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	4.0	1.0				0.0	6.5	0.4	0.2	0.0	0.0
LnGrp Delay(d),s/veh	66.6	49.1	46.0				0.0	5.1	3.1	0.9	0.1	0.0
LnGrp LOS	E	D	D					A	A	A	A	
Approach Vol, veh/h		495						634			669	
Approach Delay, s/veh		56.1						5.0			0.1	
Approach LOS		E						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		98.5		21.5		98.5		
Change Period (Y+Rc), s		5.0		5.0		5.0		
Max Green Setting (Gmax), s		51.0		20.0		51.0		
Max Q Clear Time (g_c+I1), s		14.2		15.5		15.1		
Green Ext Time (p_c), s		11.3		1.0		11.3		

Intersection Summary	
HCM 2010 Ctrl Delay	17.2
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	104	27	34	439	899	178
Future Volume (vph)	104	27	34	439	899	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1742		1770	1863	1863	1583
Flt Permitted	0.96		0.27	1.00	1.00	1.00
Satd. Flow (perm)	1742		494	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	104	27	34	439	899	178
RTOR Reduction (vph)	8	0	0	0	0	36
Lane Group Flow (vph)	123	0	34	439	899	142
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	14.1		95.9	95.9	95.9	95.9
Effective Green, g (s)	14.1		95.9	95.9	95.9	95.9
Actuated g/C Ratio	0.12		0.80	0.80	0.80	0.80
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	204		394	1488	1488	1265
v/s Ratio Prot				0.24	c0.48	
v/s Ratio Perm	c0.07		0.07			0.09
v/c Ratio	0.60		0.09	0.30	0.60	0.11
Uniform Delay, d1	50.3		2.6	3.2	4.7	2.7
Progression Factor	1.00		0.32	0.48	0.63	0.71
Incremental Delay, d2	5.0		0.3	0.4	1.3	0.1
Delay (s)	55.3		1.2	1.9	4.3	2.0
Level of Service	E		A	A	A	A
Approach Delay (s)	55.3			1.9	3.9	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	119	0	437	887	28
Future Vol, veh/h	0	119	0	437	887	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	119	0	437	887	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	901	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	336	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	336	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	336	-	-
HCM Lane V/C Ratio	-	0.354	-	-
HCM Control Delay (s)	-	21.5	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	1.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	534	40	337	1541	62	41	182	147	77	502	433
Future Volume (veh/h)	202	534	40	337	1541	62	41	182	147	77	502	433
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	202	534	0	337	1541	62	41	182	147	77	502	433
Adj No. of Lanes	1	3	1	2	2	0	1	2	1	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	207	2207	687	400	1474	59	189	914	593	829	2715	1215
Arrive On Green	0.12	0.43	0.00	0.12	0.43	0.43	0.26	0.26	0.26	0.47	0.77	0.77
Sat Flow, veh/h	1774	5085	1583	3442	3469	139	596	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	202	534	0	337	784	819	41	182	147	77	502	433
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1770	1838	596	1770	1583	1774	1770	1583
Q Serve(g_s), s	13.6	8.0	0.0	11.5	51.0	51.0	6.9	4.8	5.8	2.9	4.6	10.5
Cycle Q Clear(g_c), s	13.6	8.0	0.0	11.5	51.0	51.0	11.9	4.8	5.8	2.9	4.6	10.5
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	207	2207	687	400	752	781	189	914	593	829	2715	1215
V/C Ratio(X)	0.98	0.24	0.00	0.84	1.04	1.05	0.22	0.20	0.25	0.09	0.18	0.36
Avail Cap(c_a), veh/h	207	2207	687	488	752	781	189	914	593	829	2715	1215
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	21.5	0.0	52.0	34.5	34.5	39.5	34.8	32.1	17.8	3.8	4.5
Incr Delay (d2), s/veh	55.5	0.1	0.0	10.9	44.4	45.6	2.6	0.5	1.0	0.0	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	3.7	0.0	6.1	34.1	35.7	1.3	2.4	2.9	1.4	2.3	4.8
LnGrp Delay(d),s/veh	108.3	21.5	0.0	62.8	78.9	80.1	42.1	35.3	33.1	17.9	3.9	5.3
LnGrp LOS	F	C		E	F	F	D	D	C	B	A	A
Approach Vol, veh/h		736			1940			370			1012	
Approach Delay, s/veh		45.4			76.6			35.2			5.6	
Approach LOS		D			E			D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	62.1	36.0	17.9	57.1		98.1	19.0	56.0
Change Period (Y+Rc), s	5.0	* 5	4.0	5.0		5.0	5.0	* 5
Max Green Setting (Gmax), s	6.0	* 31	17.0	48.0		41.0	14.0	* 51
Max Q Clear Time (g_c+I1), s	4.9	13.9	13.5	10.0		12.5	15.6	53.0
Green Ext Time (p_c), s	0.1	1.8	0.4	4.8		5.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.4
HCM 2010 LOS	D

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	462	114	467	1208	60	56	478	499	58	556	65
Future Volume (vph)	115	462	114	467	1208	60	56	478	499	58	556	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	300		0	145		60	130		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970			0.993				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3433	0	1770	3514	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.128			0.950			0.121			0.121		
Satd. Flow (perm)	238	3433	0	1770	3514	0	225	1863	1583	225	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			8				220			64
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		507			578			527			677	
Travel Time (s)		11.5			13.1			12.0			15.4	
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
Adj. Flow (vph)	115	462	114	467	1208	60	56	478	499	58	556	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	576	0	467	1268	0	56	478	499	58	556	65
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4						2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		3	8		2	2	3	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	33.0	33.0		10.0	26.0		30.0	30.0	10.0	30.0	30.0	30.0
Total Split (s)	54.0	54.0		28.0	82.0		38.0	38.0	28.0	38.0	38.0	38.0
Total Split (%)	45.0%	45.0%		23.3%	68.3%		31.7%	31.7%	23.3%	31.7%	31.7%	31.7%
Maximum Green (s)	49.0	49.0		24.0	77.0		33.0	33.0	24.0	33.0	33.0	33.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0	4.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead		Lag					Lag			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0			14.0		18.0	18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)	5	5			5		5	5		5	5	5
Act Effct Green (s)	49.0	49.0		24.0	77.0		33.0	33.0	62.0	33.0	33.0	33.0
Actuated g/C Ratio	0.41	0.41		0.20	0.64		0.28	0.28	0.52	0.28	0.28	0.28
v/c Ratio	1.19	0.41		1.32	0.56		0.92	0.93	0.54	0.95	1.09	0.14
Control Delay	184.3	24.8		200.9	13.2		129.2	65.3	13.3	148.0	106.5	8.9
Queue Delay	0.0	0.0		1.1	0.0		0.0	0.2	0.5	0.0	6.4	0.0
Total Delay	184.3	24.8		202.0	13.2		129.2	65.5	13.8	148.0	112.9	8.9
LOS	F	C		F	B		F	E	B	F	F	A
Approach Delay		51.3			64.0			44.0			106.0	
Approach LOS		D			E			D			F	
Queue Length 50th (ft)	~107	154		~467	266		39	337	132	44	~483	1
Queue Length 95th (ft)	#230	203		#675	324		m#99	#564	156	#134	#701	35
Internal Link Dist (ft)		427			498			447			597	
Turn Bay Length (ft)	55			300			145		60	130		
Base Capacity (vph)	97	1420		354	2257		61	512	924	61	512	481
Starvation Cap Reductn	0	0		0	0		0	1	142	0	0	0
Spillback Cap Reductn	0	0		35	0		0	0	0	0	57	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.19	0.41		1.46	0.56		0.92	0.94	0.64	0.95	1.22	0.14

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 24 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.32
Intersection Signal Delay: 63.8 Intersection LOS: E
Intersection Capacity Utilization 92.6% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.

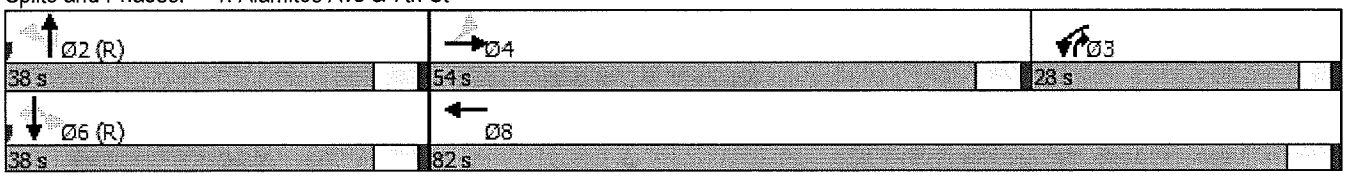
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Alamitos Ave & 7th St



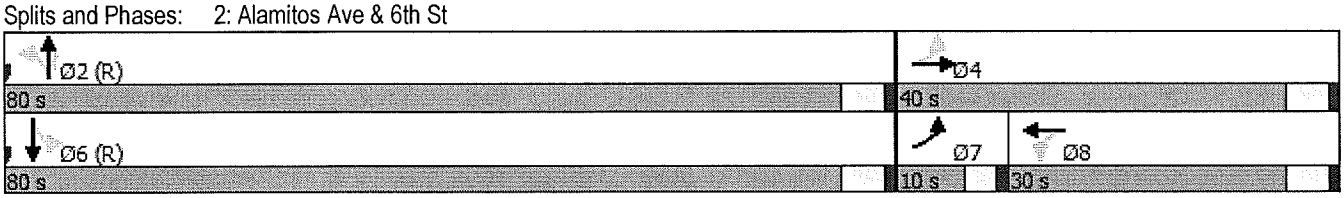
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	14	49	10	5	26	50	858	9	5	953	182
Future Volume (vph)	151	14	49	10	5	26	50	858	9	5	953	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		60	225		0
Storage Lanes	1		0	0		0	1		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.883			0.914				0.850		0.976	
Flt Protected	0.950				0.988		0.950			0.950		
Satd. Flow (prot)	1770	1645	0	0	1682	0	1770	1863	1583	1770	1818	0
Flt Permitted	0.647				0.907		0.134			0.262		
Satd. Flow (perm)	1205	1645	0	0	1544	0	250	1863	1583	488	1818	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			26				55		15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		536			543			380			527	
Travel Time (s)		12.2			12.3			8.6			12.0	
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
Adj. Flow (vph)	151	14	49	10	5	26	50	858	9	5	953	182
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	63	0	0	41	0	50	858	9	5	1135	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2		2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	30.0		30.0	30.0		19.0	19.0	19.0	23.0	23.0	
Total Split (s)	10.0	40.0		30.0	30.0		80.0	80.0	80.0	80.0	80.0	
Total Split (%)	8.3%	33.3%		25.0%	25.0%		66.7%	66.7%	66.7%	66.7%	66.7%	
Maximum Green (s)	6.0	35.0		25.0	25.0		75.0	75.0	75.0	75.0	75.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		18.0		18.0	18.0		7.0	7.0	7.0	11.0	11.0	
Pedestrian Calls (#/hr)		5		5	5		5	5	5	5	5	
Act Effct Green (s)	19.3	18.3			10.3		91.7	91.7	91.7	91.7	91.7	
Actuated g/C Ratio	0.16	0.15			0.09		0.76	0.76	0.76	0.76	0.76	
v/c Ratio	0.68	0.22			0.26		0.26	0.60	0.01	0.01	0.82	
Control Delay	59.9	15.9			27.7		9.2	7.2	0.0	2.2	8.4	
Queue Delay	0.0	0.0			0.0		0.0	0.2	0.0	0.0	2.9	
Total Delay	59.9	15.9			27.7		9.2	7.4	0.0	2.2	11.3	
LOS	E	B			C		A	A	A	A	B	
Approach Delay		46.9			27.7			7.4			11.2	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)	111	10			11		7	152	0	0	550	
Queue Length 95th (ft)	148	42			41		m19	335	m0	m0	m67	
Internal Link Dist (ft)		456			463			300			447	
Turn Bay Length (ft)							100		60	225		
Base Capacity (vph)	222	514			342		190	1423	1222	372	1392	
Starvation Cap Reductn	0	0			0		0	95	0	0	160	
Spillback Cap Reductn	0	0			1		0	81	0	0	0	
Storage Cap Reductn	0	0			0		0	0	0	0	0	
Reduced v/c Ratio	0.68	0.12			0.12		0.26	0.65	0.01	0.01	0.92	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 13.3 Intersection LOS: B
Intersection Capacity Utilization 84.6% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Alamitos Ave & 6th St



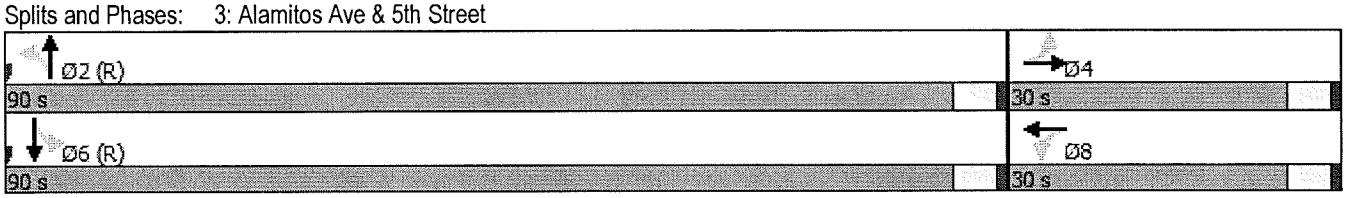
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	22	28	5	43	26	52	869	7	24	931	81
Future Volume (vph)	52	22	28	5	43	26	52	869	7	24	931	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.953			0.999			0.988	
Flt Protected		0.975			0.997		0.950			0.950		
Satd. Flow (prot)	0	1749	0	0	1770	0	1770	1861	0	1770	1840	0
Flt Permitted		0.779			0.982		0.218			0.276		
Satd. Flow (perm)	0	1397	0	0	1743	0	406	1861	0	514	1840	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			21			1			9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			618			468			380	
Travel Time (s)		12.0			14.0			10.6			8.6	
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
Adj. Flow (vph)	52	22	28	5	43	26	52	869	7	24	931	81
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	102	0	0	74	0	52	876	0	24	1012	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	11.0		30.0	30.0		19.0	19.0		19.0	19.0	
Total Split (s)	30.0	30.0		30.0	30.0		90.0	90.0		90.0	90.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		75.0%	75.0%		75.0%	75.0%	
Maximum Green (s)	25.0	25.0		25.0	25.0		85.0	85.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				18.0	18.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)				5	5		5	5		5	5	
Act Effct Green (s)		13.9			13.9		96.1	96.1		96.1	96.1	
Actuated g/C Ratio		0.12			0.12		0.80	0.80		0.80	0.80	
v/c Ratio		0.59			0.34		0.16	0.59		0.06	0.69	
Control Delay		55.3			37.6		1.8	2.2		1.0	2.6	
Queue Delay		0.0			0.0		0.0	0.2		0.0	0.6	
Total Delay		55.3			37.6		1.8	2.4		1.0	3.3	
LOS		E			D		A	A		A	A	
Approach Delay		55.3			37.6			2.3			3.2	
Approach LOS		E			D			A			A	
Queue Length 50th (ft)		66			39		2	47		0	21	
Queue Length 95th (ft)		112			77		m5	91		m1	47	
Internal Link Dist (ft)		450			538			388			300	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		302			379		325	1491		411	1475	
Starvation Cap Reductn		0			0		0	122		0	172	
Spillback Cap Reductn		0			0		0	58		0	41	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.34			0.20		0.16	0.64		0.06	0.78	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 6.5 Intersection LOS: A
Intersection Capacity Utilization 74.7% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Alamitos Ave & 5th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	206	23	192	455	77	90	814	46	98	819	44
Future Volume (vph)	46	206	23	192	455	77	90	814	46	98	819	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	50		0	115		0	155		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.978			0.992			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1822	0	1770	1848	0	1770	1848	0
Flt Permitted	0.108			0.537			0.155			0.156		
Satd. Flow (perm)	201	1863	1583	1000	1822	0	289	1848	0	291	1848	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			23		8			4			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		549			626			397			468	
Travel Time (s)		12.5			14.2			9.0			10.6	
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
Adj. Flow (vph)	46	206	23	192	455	77	90	814	46	98	819	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	206	23	192	532	0	90	860	0	98	863	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		23.0	23.0		26.0	26.0	
Total Split (s)	46.0	46.0	46.0	46.0	46.0		74.0	74.0		74.0	74.0	
Total Split (%)	38.3%	38.3%	38.3%	38.3%	38.3%		61.7%	61.7%		61.7%	61.7%	
Maximum Green (s)	41.0	41.0	41.0	41.0	41.0		69.0	69.0		69.0	69.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0		11.0	11.0		14.0	14.0	
Pedestrian Calls (#/hr)	5	5	5	5	5		5	5		5	5	
Act Effct Green (s)	38.2	38.2	38.2	38.2	38.2		71.8	71.8		71.8	71.8	
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32		0.60	0.60		0.60	0.60	
v/c Ratio	0.73	0.35	0.04	0.60	0.91		0.52	0.78		0.56	0.78	
Control Delay	92.2	32.5	10.3	42.9	59.3		22.0	18.4		24.0	18.3	
Queue Delay	0.0	0.0	0.0	1.4	0.0		0.0	0.2		0.0	1.5	
Total Delay	92.2	32.5	10.3	44.2	59.3		22.0	18.7		24.0	19.8	
LOS	F	C	B	D	E		C	B		C	B	
Approach Delay		40.6			55.3			19.0			20.2	
Approach LOS		D			E			B			C	
Queue Length 50th (ft)	30	118	0	120	375		24	438		32	285	
Queue Length 95th (ft)	#99	183	19	202	#564		m80	m565		m42	390	
Internal Link Dist (ft)		469			546			317			388	
Turn Bay Length (ft)	55			50			115			155		
Base Capacity (vph)	68	636	556	341	627		173	1107		174	1107	
Starvation Cap Reductn	0	0	0	0	0		0	27		0	105	
Spillback Cap Reductn	0	0	75	47	0		0	0		0	80	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.68	0.32	0.05	0.65	0.85		0.52	0.80		0.56	0.86	

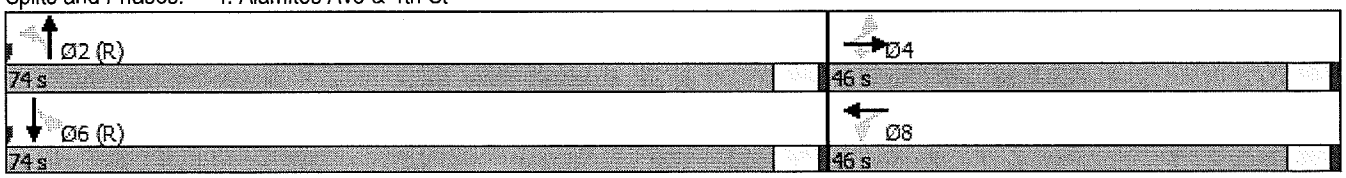
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 6 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 30.5 Intersection LOS: C
Intersection Capacity Utilization 101.3% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Alamitos Ave & 4th St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	669	72	342	782	26	31	670	253
Future Volume (vph)	0	0	0	0	669	72	342	782	26	31	670	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	60		0	205		60	110		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.985				0.850		0.959	
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	0	0	3486	0	1770	1863	1583	1770	1786	0
Flt Permitted							0.950			0.230		
Satd. Flow (perm)	0	0	0	0	3486	0	1770	1863	1583	428	1786	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9				18		22	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			470			551			397	
Travel Time (s)		12.0			10.7			12.5			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
Adj. Flow (vph)	0	0	0	0	669	72	342	782	26	31	670	253
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	741	0	342	782	26	31	923	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					2		1	2	1	1	2	
Detector Template					Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)					100		20	100	20	20	100	
Trailing Detector (ft)					0		0	0	0	0	0	
Detector 1 Position(ft)					0		0	0	0	0	0	
Detector 1 Size(ft)					6		20	6	20	20	6	
Detector 1 Type					Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type					NA		Prot	NA	Perm	Perm	NA	
Protected Phases					8		5	2			6	
Permitted Phases									2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase					8		5	2	2	6	6	
Switch Phase												
Minimum Initial (s)					6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)					30.0		11.0	23.0	23.0	19.0	19.0	
Total Split (s)					30.0		27.0	90.0	90.0	63.0	63.0	
Total Split (%)					25.0%		22.5%	75.0%	75.0%	52.5%	52.5%	
Maximum Green (s)					25.0		22.0	85.0	85.0	58.0	58.0	
Yellow Time (s)					4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)					1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)					5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag							Lag			Lead	Lead	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)					3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode					None		None	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)					7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)					18.0			11.0	11.0	7.0	7.0	
Pedestrian Calls (#/hr)					5			5	5	5	5	
Act Effct Green (s)					25.0		22.0	85.0	85.0	58.0	58.0	
Actuated g/C Ratio					0.21		0.18	0.71	0.71	0.48	0.48	
v/c Ratio					1.01		1.06	0.59	0.02	0.15	1.06	
Control Delay					82.7		104.2	10.2	3.0	19.5	69.2	
Queue Delay					0.0		0.0	0.6	0.0	0.0	17.5	
Total Delay					82.7		104.2	10.8	3.0	19.5	86.7	
LOS					F		F	B	A	B	F	
Approach Delay					82.7			38.4			84.5	
Approach LOS					F			D			F	
Queue Length 50th (ft)					~306		~296	236	1	11	~769	
Queue Length 95th (ft)					#440		#483	306	m3	m18	#614	
Internal Link Dist (ft)		450			390			471			317	
Turn Bay Length (ft)							205		60	110		
Base Capacity (vph)					733		324	1319	1126	206	874	
Starvation Cap Reductn					0		0	209	0	0	63	
Spillback Cap Reductn					0		0	156	0	0	18	
Storage Cap Reductn					0		0	0	0	0	0	
Reduced v/c Ratio					1.01		1.06	0.70	0.02	0.15	1.14	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 65.4 Intersection LOS: E
Intersection Capacity Utilization 102.9% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.

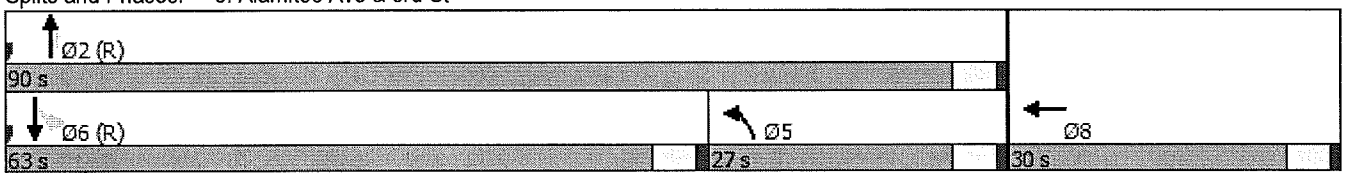
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Alamitos Ave & 3rd St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	257	34	377	0	329	0	588	46	40	629	0
Future Volume (vph)	204	257	34	377	0	329	0	588	46	40	629	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		50	0		0	0		60	120		0
Storage Lanes	1		1	1		1	0		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1770	3539	1583	1770	0	1583	0	1863	1583	1770	1863	0
Flt Permitted	0.950			0.950						0.248		
Satd. Flow (perm)	1770	3539	1583	1770	0	1583	0	1863	1583	462	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			64			189			64			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			630			215			551	
Travel Time (s)		13.9			14.3			4.9			12.5	
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
Adj. Flow (vph)	204	257	34	377	0	329	0	588	46	40	629	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	257	34	377	0	329	0	588	46	40	629	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1		1		2	1	1	2	
Detector Template	Left	Thru	Right	Left		Right		Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20		20		100	20	20	100	
Trailing Detector (ft)	0	0	0	0		0		0	0	0	0	
Detector 1 Position(ft)	0	0	0	0		0		0	0	0	0	
Detector 1 Size(ft)	20	6	20	20		20		6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm	Prot		Perm		NA	Perm	Perm	NA	
Protected Phases	4	4		8				2			6	
Permitted Phases			4			8			2	6		

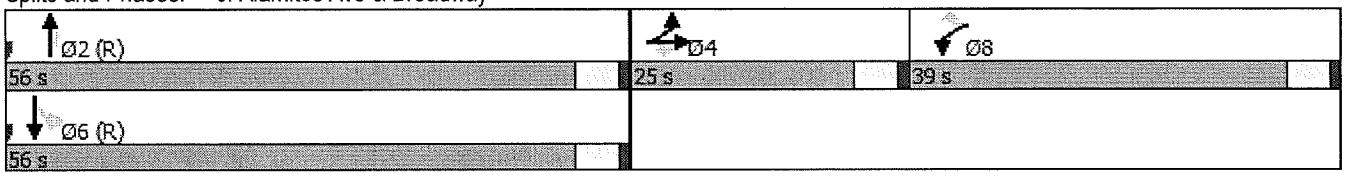
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8		8		2	2	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0		6.0		6.0	6.0	6.0	6.0	
Minimum Split (s)	23.0	23.0	23.0	11.0		11.0		26.0	26.0	30.0	30.0	
Total Split (s)	25.0	25.0	25.0	39.0		39.0		56.0	56.0	56.0	56.0	
Total Split (%)	20.8%	20.8%	20.8%	32.5%		32.5%		46.7%	46.7%	46.7%	46.7%	
Maximum Green (s)	20.0	20.0	20.0	34.0		34.0		51.0	51.0	51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0		5.0	5.0	5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None		None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0					14.0	14.0	18.0	18.0	
Pedestrian Calls (#/hr)	5	5	5					5	5	5	5	
Act Effct Green (s)	17.8	17.8	17.8	29.6		29.6		57.6	57.6	57.6	57.6	
Actuated g/C Ratio	0.15	0.15	0.15	0.25		0.25		0.48	0.48	0.48	0.48	
v/c Ratio	0.78	0.49	0.12	0.86		0.62		0.66	0.06	0.18	0.70	
Control Delay	69.2	49.8	3.4	62.9		21.2		16.5	1.4	1.2	2.9	
Queue Delay	0.0	0.0	0.0	0.2		0.0		2.0	0.0	0.0	1.1	
Total Delay	69.2	49.8	3.4	63.0		21.2		18.5	1.4	1.2	4.0	
LOS	E	D	A	E		C		B	A	A	A	
Approach Delay		54.6			43.5			17.3			3.8	
Approach LOS		D			D			B			A	
Queue Length 50th (ft)	151	95	0	277		92		193	1	0	7	
Queue Length 95th (ft)	#241	137	9	384		185		273	4	m2	m57	
Internal Link Dist (ft)		530			550			135			471	
Turn Bay Length (ft)	120		50						60	120		
Base Capacity (vph)	295	589	317	501		583		894	793	221	894	
Starvation Cap Reductn	0	0	0	0		0		171	0	0	102	
Spillback Cap Reductn	0	0	0	5		0		0	0	0	1	
Storage Cap Reductn	0	0	0	0		0		0	0	0	0	
Reduced v/c Ratio	0.69	0.44	0.11	0.76		0.56		0.81	0.06	0.18	0.79	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 20 (17%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 28.5 Intersection LOS: C
Intersection Capacity Utilization 75.1% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Alamitos Ave & Broadway



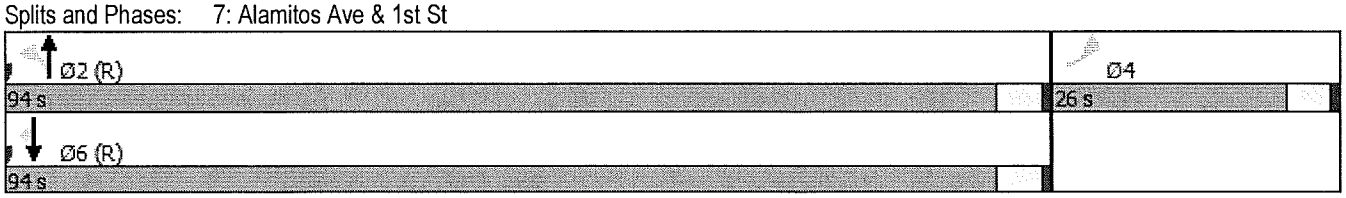
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	104	27	34	439	899	178
Future Volume (vph)	104	27	34	439	899	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	60			0
Storage Lanes	1	0	1			1
Taper Length (ft)	60		60			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.972					0.850
Flt Protected	0.962		0.950			
Satd. Flow (prot)	1742	0	1770	1863	1863	1583
Flt Permitted	0.962		0.265			
Satd. Flow (perm)	1742	0	494	1863	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	9					178
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			219	212	
Travel Time (s)	12.5			5.0	4.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	104	27	34	439	899	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	131	0	34	439	899	178
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (ft)	20		20	100	100	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	26.0		11.0	11.0	19.0	19.0
Total Split (s)	26.0		94.0	94.0	94.0	94.0
Total Split (%)	21.7%		78.3%	78.3%	78.3%	78.3%
Maximum Green (s)	21.0		89.0	89.0	89.0	89.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	14.0				7.0	7.0
Pedestrian Calls (#/hr)	5				5	5
Act Effct Green (s)	14.1		95.9	95.9	95.9	95.9
Actuated g/C Ratio	0.12		0.80	0.80	0.80	0.80
v/c Ratio	0.62		0.09	0.30	0.60	0.14
Control Delay	58.6		1.5	2.2	4.8	0.6
Queue Delay	0.0		0.0	0.0	1.2	0.0
Total Delay	58.6		1.5	2.2	6.1	0.6
LOS	E		A	A	A	A
Approach Delay	58.6			2.1	5.1	
Approach LOS	E			A	A	
Queue Length 50th (ft)	92		2	21	164	2
Queue Length 95th (ft)	148		m3	m35	330	m10
Internal Link Dist (ft)	470			139	132	
Turn Bay Length (ft)			60			
Base Capacity (vph)	312		394	1488	1488	1300
Starvation Cap Reductn	0		0	0	350	0
Spillback Cap Reductn	0		0	1	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.42		0.09	0.30	0.79	0.14

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 6 (5%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 8.5 Intersection LOS: A
Intersection Capacity Utilization 63.1% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Alamitos Ave & 1st St



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	119	0	437	887	28
Future Volume (vph)	0	119	0	437	887	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt		0.865			0.996	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	1855	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	1855	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	472			224	231	
Travel Time (s)	10.7			5.1	5.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	119	0	437	887	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	119	0	437	915	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 62.4% ICU Level of Service B
Analysis Period (min) 15

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	534	40	337	1541	62	41	182	147	77	502	433
Future Volume (vph)	202	534	40	337	1541	62	41	182	147	77	502	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		50	230		0	220		0	60		60
Storage Lanes	1		1	2		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.994				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	3433	3518	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.338			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	3518	0	630	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100		4				147			242
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		542			607			703			224	
Travel Time (s)		12.3			13.8			16.0			5.1	
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
Adj. Flow (vph)	202	534	40	337	1541	62	41	182	147	77	502	433
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	534	40	337	1603	0	41	182	147	77	502	433
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases			4				2		2			6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		2	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0	10.0	36.0		36.0	36.0	10.0	10.0	36.0	36.0
Total Split (s)	18.0	53.0	53.0	21.0	56.0		36.0	36.0	21.0	10.0	46.0	46.0
Total Split (%)	15.0%	44.2%	44.2%	17.5%	46.7%		30.0%	30.0%	17.5%	8.3%	38.3%	38.3%
Maximum Green (s)	14.0	48.0	48.0	17.0	51.0		31.0	31.0	17.0	6.0	41.0	41.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0		5.0	5.0	4.0	4.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	None	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0		7.0	7.0			7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0		24.0	24.0			24.0	24.0
Pedestrian Calls (#/hr)		5	5		5		5	5			5	5
Act Effct Green (s)	14.0	49.3	49.3	15.7	51.0		31.0	31.0	47.7	6.0	41.0	41.0
Actuated g/C Ratio	0.12	0.41	0.41	0.13	0.42		0.26	0.26	0.40	0.05	0.34	0.34
v/c Ratio	0.98	0.26	0.06	0.75	1.07		0.25	0.20	0.20	0.88	0.42	0.62
Control Delay	111.2	23.9	0.1	61.2	78.6		40.4	35.5	3.1	109.4	23.4	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.2	23.9	0.1	61.2	78.6		40.4	35.5	3.1	109.4	23.4	11.0
LOS	F	C	A	E	E		D	D	A	F	C	B
Approach Delay		45.4			75.6			23.2			24.6	
Approach LOS		D			E			C			C	
Queue Length 50th (ft)	158	100	0	129	~725		25	58	0	60	135	89
Queue Length 95th (ft)	#312	128	0	180	#867		60	90	31	m#136	155	123
Internal Link Dist (ft)		462			527			623			144	
Turn Bay Length (ft)	225		50	230			220			60		60
Base Capacity (vph)	206	2088	709	486	1497		162	914	733	88	1209	700
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.26	0.06	0.69	1.07		0.25	0.20	0.20	0.88	0.42	0.62

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 35 (29%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 52.5 Intersection LOS: D
Intersection Capacity Utilization 90.5% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.

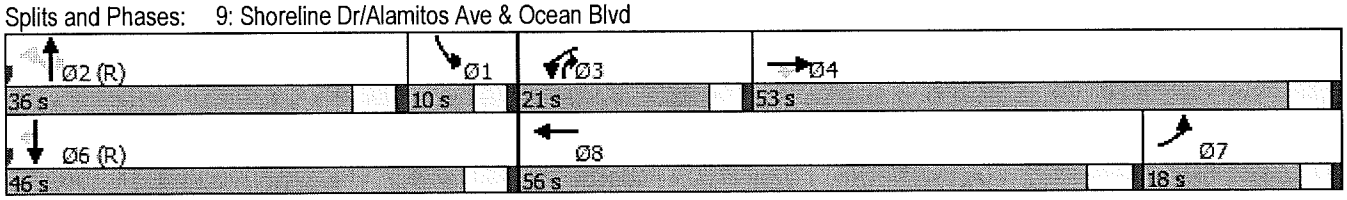
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	1001	268	450	663	61	54	502	749	60	627	21
Future Volume (veh/h)	166	1001	268	450	663	61	54	502	749	60	627	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	166	1001	268	450	663	61	54	502	749	60	627	21
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	306	860	229	375	1857	171	80	600	844	122	600	510
Arrive On Green	0.31	0.31	0.31	0.21	0.57	0.57	0.54	0.54	0.54	0.32	0.32	0.32
Sat Flow, veh/h	727	2765	737	1774	3278	301	780	1863	1583	442	1863	1583
Grp Volume(v), veh/h	166	639	630	450	358	366	54	502	749	60	627	21
Grp Sat Flow(s),veh/h/ln	727	1770	1733	1774	1770	1810	780	1863	1583	442	1863	1583
Q Serve(g_s), s	18.4	28.0	28.0	19.0	9.9	9.9	0.0	20.4	29.0	8.6	29.0	0.8
Cycle Q Clear(g_c), s	18.4	28.0	28.0	19.0	9.9	9.9	29.0	20.4	29.0	29.0	29.0	0.8
Prop In Lane	1.00		0.43	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	306	551	539	375	1003	1025	80	600	844	122	600	510
V/C Ratio(X)	0.54	1.16	1.17	1.20	0.36	0.36	0.67	0.84	0.89	0.49	1.04	0.04
Avail Cap(c_a), veh/h	306	551	539	375	1003	1025	80	600	844	122	600	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.43	0.43	0.43	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	31.0	31.0	35.5	10.6	10.6	35.3	18.8	14.8	42.0	30.5	21.0
Incr Delay (d2), s/veh	2.0	91.2	94.4	113.6	0.2	0.2	18.1	6.1	6.5	13.4	48.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	27.6	27.5	21.1	4.8	4.9	1.7	11.2	19.0	1.9	23.0	0.4
LnGrp Delay(d),s/veh	29.6	122.2	125.4	149.1	10.8	10.8	53.4	24.9	21.2	55.3	79.4	21.1
LnGrp LOS	C	F	F	F	B	B	D	C	C	E	F	C
Approach Vol, veh/h		1435			1174			1305			708	
Approach Delay, s/veh		112.9			63.8			24.0			75.6	
Approach LOS		F			E			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		34.0	23.0	33.0		34.0		56.0
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0		5.0
Max Green Setting (Gmax), s		29.0	19.0	28.0		29.0		51.0
Max Q Clear Time (g_c+I1), s		31.0	21.0	30.0		31.0		11.9
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0		22.7

Intersection Summary	
HCM 2010 Ctrl Delay	69.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	23	56	9	5	14	50	1162	9	8	1149	186
Future Volume (veh/h)	124	23	56	9	5	14	50	1162	9	8	1149	186
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	124	23	56	9	5	14	50	1162	9	8	1149	186
Adj No. of Lanes	1	1	0	0	1	0	1	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	330	83	203	72	30	49	80	1333	1133	422	1120	181
Arrive On Green	0.07	0.17	0.17	0.06	0.06	0.06	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1774	482	1174	315	480	795	408	1863	1583	477	1565	253
Grp Volume(v), veh/h	124	0	79	28	0	0	50	1162	9	8	0	1335
Grp Sat Flow(s),veh/h/ln	1774	0	1656	1591	0	0	408	1863	1583	477	0	1818
Q Serve(g_s), s	5.7	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	64.4
Cycle Q Clear(g_c), s	5.7	0.0	3.7	1.4	0.0	0.0	64.4	0.0	0.0	0.0	0.0	64.4
Prop In Lane	1.00		0.71	0.32		0.50	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	330	0	287	152	0	0	80	1333	1133	422	0	1301
V/C Ratio(X)	0.38	0.00	0.28	0.18	0.00	0.00	0.62	0.87	0.01	0.02	0.00	1.03
Avail Cap(c_a), veh/h	330	0	644	480	0	0	80	1333	1133	422	0	1301
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.48	0.48	0.48	0.09	0.00	0.09
Uniform Delay (d), s/veh	34.9	0.0	32.3	40.2	0.0	0.0	32.2	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.5	0.6	0.0	0.0	16.5	4.1	0.0	0.0	0.0	15.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	1.8	0.7	0.0	0.0	1.6	1.5	0.0	0.0	0.0	5.6
LnGrp Delay(d),s/veh	35.6	0.0	32.8	40.8	0.0	0.0	48.7	4.1	0.0	0.0	0.0	15.4
LnGrp LOS	D		C	D			D	A	A	A		F
Approach Vol, veh/h		203			28			1221			1343	
Approach Delay, s/veh		34.5			40.8			5.9			15.3	
Approach LOS		C			D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		69.4		20.6		69.4	10.0	10.6
Change Period (Y+Rc), s		5.0		5.0		5.0	4.0	5.0
Max Green Setting (Gmax), s		45.0		35.0		45.0	6.0	25.0
Max Q Clear Time (g_c+I1), s		66.4		5.7		66.4	7.7	3.4
Green Ext Time (p_c), s		0.0		0.6		0.0	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	12.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	31	42	3	12	12	18	1171	16	40	1118	31
Future Volume (veh/h)	40	31	42	3	12	12	18	1171	16	40	1118	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	40	31	42	3	12	12	18	1171	16	40	1118	31
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	52	56	51	83	72	467	1456	20	453	1433	40
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	450	555	595	74	882	765	487	1833	25	470	1804	50
Grp Volume(v), veh/h	113	0	0	27	0	0	18	0	1187	40	0	1149
Grp Sat Flow(s),veh/h/ln	1601	0	0	1722	0	0	487	0	1858	470	0	1854
Q Serve(g_s), s	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.1	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.35		0.37	0.11		0.44	1.00		0.01	1.00		0.03
Lane Grp Cap(c), veh/h	205	0	0	207	0	0	467	0	1476	453	0	1473
V/C Ratio(X)	0.55	0.00	0.00	0.13	0.00	0.00	0.04	0.00	0.80	0.09	0.00	0.78
Avail Cap(c_a), veh/h	493	0	0	511	0	0	467	0	1476	453	0	1473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.09	0.00	0.09	0.09	0.00	0.09
Uniform Delay (d), s/veh	39.6	0.0	0.0	37.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	2.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
LnGrp Delay(d),s/veh	41.9	0.0	0.0	37.8	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
LnGrp LOS	D			D			A		A	A		A
Approach Vol, veh/h		113			27			1205			1189	
Approach Delay, s/veh		41.9			37.8			0.4			0.4	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		76.5		13.5		76.5		13.5
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		55.0		25.0		55.0		25.0
Max Q Clear Time (g_c+I1), s		2.0		8.1		2.0		3.3
Green Ext Time (p_c), s		40.7		0.6		40.7		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	2.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	398	44	62	220	53	42	1113	160	173	936	52
Future Volume (veh/h)	50	398	44	62	220	53	42	1113	160	173	936	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	50	398	44	62	220	53	42	1113	160	173	936	52
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	244	517	440	157	403	97	173	974	140	80	1069	59
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.61	0.61	0.61	0.61	0.61	0.61
Sat Flow, veh/h	1102	1863	1583	944	1451	350	567	1593	229	433	1748	97
Grp Volume(v), veh/h	50	398	44	62	0	273	42	0	1273	173	0	988
Grp Sat Flow(s),veh/h/ln	1102	1863	1583	944	0	1801	567	0	1822	433	0	1846
Q Serve(g_s), s	3.6	17.7	1.9	5.8	0.0	11.6	6.0	0.0	55.0	0.0	0.0	40.3
Cycle Q Clear(g_c), s	15.3	17.7	1.9	23.5	0.0	11.6	46.3	0.0	55.0	55.0	0.0	40.3
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.13	1.00		0.05
Lane Grp Cap(c), veh/h	244	517	440	157	0	500	173	0	1114	80	0	1128
V/C Ratio(X)	0.21	0.77	0.10	0.40	0.00	0.55	0.24	0.00	1.14	2.16	0.00	0.88
Avail Cap(c_a), veh/h	244	517	440	157	0	500	173	0	1114	80	0	1128
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.21	0.00	0.21	0.52	0.00	0.52
Uniform Delay (d), s/veh	34.2	29.9	24.1	40.6	0.0	27.7	34.0	0.0	17.5	45.0	0.0	14.6
Incr Delay (d2), s/veh	0.4	6.9	0.1	1.6	0.0	1.2	0.7	0.0	67.0	544.2	0.0	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	10.1	0.8	1.6	0.0	5.9	1.0	0.0	48.0	14.1	0.0	22.0
LnGrp Delay(d),s/veh	34.6	36.8	24.2	42.2	0.0	28.9	34.7	0.0	84.5	589.2	0.0	20.0
LnGrp LOS	C	D	C	D		C	C		F	F		C
Approach Vol, veh/h		492			335			1315			1161	
Approach Delay, s/veh		35.4			31.4			82.9			104.9	
Approach LOS		D			C			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		60.0		30.0		60.0		30.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		55.0		25.0		55.0		25.0
Max Q Clear Time (g_c+I1), s		57.0		19.7		57.0		25.5
Green Ext Time (p_c), s		0.0		2.3		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	78.3
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	227	53	141	1298	200	96	711	190
Future Volume (veh/h)	0	0	0	0	227	53	141	1298	200	96	711	190
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				0	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h				0	227	53	141	1298	200	96	711	190
Adj No. of Lanes				0	2	0	1	1	1	1	1	0
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	2	0	2	2	2	2	2	2
Cap, veh/h				0	0	0	710	1759	1495	251	693	185
Arrive On Green				0.00	0.00	0.00	0.80	1.00	1.00	0.65	0.65	0.65
Sat Flow, veh/h					0		1774	1863	1583	349	1417	379
Grp Volume(v), veh/h					0.0		141	1298	200	96	0	901
Grp Sat Flow(s),veh/h/ln							1774	1863	1583	349	0	1796
Q Serve(g_s), s							1.7	0.0	0.0	13.6	0.0	44.0
Cycle Q Clear(g_c), s							1.7	0.0	0.0	13.6	0.0	44.0
Prop In Lane							1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h							710	1759	1495	251	0	878
V/C Ratio(X)							0.20	0.74	0.13	0.38	0.00	1.03
Avail Cap(c_a), veh/h							710	1759	1495	251	0	878
HCM Platoon Ratio							2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)							0.09	0.09	0.09	0.50	0.00	0.50
Uniform Delay (d), s/veh							5.6	0.0	0.0	10.4	0.0	15.7
Incr Delay (d2), s/veh							0.0	0.3	0.0	2.2	0.0	28.5
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							0.8	0.1	0.0	1.5	0.0	28.2
LnGrp Delay(d),s/veh							5.6	0.3	0.0	12.6	0.0	44.2
LnGrp LOS							A	A	A	B		F
Approach Vol, veh/h								1639			997	
Approach Delay, s/veh								0.7			41.2	
Approach LOS								A			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		
Phs Duration (G+Y+Rc), s		90.0			41.0	49.0		
Change Period (Y+Rc), s		5.0			5.0	5.0		
Max Green Setting (Gmax), s		55.0			6.0	44.0		
Max Q Clear Time (g_c+I1), s		2.0			3.7	46.0		
Green Ext Time (p_c), s		24.4			2.0	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	16.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	481	908	69	138	0	173	0	1021	236	90	586	0
Future Volume (veh/h)	481	908	69	138	0	173	0	1021	236	90	586	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	0	1863	0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	481	908	69	138	0	173	0	1021	236	90	586	0
Adj No. of Lanes	1	2	1	1	0	1	0	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	453	904	405	0	0	0	0	1180	1003	163	1180	0
Arrive On Green	0.26	0.26	0.26	0.00	0.00	0.00	0.00	0.63	0.63	1.00	1.00	0.00
Sat Flow, veh/h	1774	3539	1583		0		0	1863	1583	440	1863	0
Grp Volume(v), veh/h	481	908	69		0.0		0	1021	236	90	586	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583				0	1863	1583	440	1863	0
Q Serve(g_s), s	23.0	23.0	3.1				0.0	40.0	5.8	17.0	0.0	0.0
Cycle Q Clear(g_c), s	23.0	23.0	3.1				0.0	40.0	5.8	57.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	453	904	405				0	1180	1003	163	1180	0
V/C Ratio(X)	1.06	1.00	0.17				0.00	0.87	0.24	0.55	0.50	0.00
Avail Cap(c_a), veh/h	453	904	405				0	1180	1003	163	1180	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	0.48	0.48	0.00
Uniform Delay (d), s/veh	33.5	33.5	26.1				0.0	13.4	7.1	20.7	0.0	0.0
Incr Delay (d2), s/veh	59.4	30.9	0.2				0.0	8.6	0.6	6.4	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.7	15.1	1.4				0.0	23.0	2.6	2.5	0.2	0.0
LnGrp Delay(d),s/veh	92.9	64.4	26.3				0.0	22.0	7.7	27.1	0.7	0.0
LnGrp LOS	F	F	C					C	A	C	A	
Approach Vol, veh/h		1458						1257			676	
Approach Delay, s/veh		72.0						19.3			4.2	
Approach LOS		E						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		62.0		28.0		62.0		
Change Period (Y+Rc), s		5.0		5.0		5.0		
Max Green Setting (Gmax), s		45.0		23.0		45.0		
Max Q Clear Time (g_c+I1), s		42.0		25.0		59.0		
Green Ext Time (p_c), s		2.6		0.0		0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	38.9
HCM 2010 LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	181	48	78	1070	654	98
Future Volume (vph)	181	48	78	1070	654	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	0.96		0.95	1.00	1.00	1.00
Satd. Flow (prot)	1741		1770	1863	1863	1583
Flt Permitted	0.96		0.35	1.00	1.00	1.00
Satd. Flow (perm)	1741		656	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	181	48	78	1070	654	98
RTOR Reduction (vph)	12	0	0	0	0	28
Lane Group Flow (vph)	217	0	78	1070	654	70
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6
Actuated Green, G (s)	16.0		64.0	64.0	64.0	64.0
Effective Green, g (s)	16.0		64.0	64.0	64.0	64.0
Actuated g/C Ratio	0.18		0.71	0.71	0.71	0.71
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	309		466	1324	1324	1125
v/s Ratio Prot				c0.57	0.35	
v/s Ratio Perm	c0.12		0.12			0.04
v/c Ratio	0.70		0.17	0.81	0.49	0.06
Uniform Delay, d1	34.8		4.3	8.8	5.8	3.9
Progression Factor	1.00		1.00	1.00	0.13	0.08
Incremental Delay, d2	7.1		0.8	5.4	1.0	0.1
Delay (s)	41.9		5.0	14.2	1.8	0.4
Level of Service	D		A	B	A	A
Approach Delay (s)	41.9			13.6	1.6	
Approach LOS	D			B	A	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱		↑↑	↱	
Traffic Vol, veh/h	0	104	0	1108	600	84
Future Vol, veh/h	0	104	0	1108	600	84
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	104	0	1108	600	84

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	642	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	473	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	473	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	473	-	-
HCM Lane V/C Ratio	-	0.22	-	-
HCM Control Delay (s)	-	14.7	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.8	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	377	1561	53	188	833	115	73	641	444	92	321	289
Future Volume (veh/h)	377	1561	53	188	833	115	73	641	444	92	321	289
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	377	1561	0	188	833	115	73	641	444	92	321	289
Adj No. of Lanes	1	3	1	2	2	0	1	2	1	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	317	2037	634	252	894	123	254	1031	577	100	1396	625
Arrive On Green	0.18	0.40	0.00	0.07	0.29	0.29	0.29	0.29	0.29	0.06	0.39	0.39
Sat Flow, veh/h	1774	5085	1583	3442	3125	431	808	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	377	1561	0	188	472	476	73	641	444	92	321	289
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1770	1787	808	1770	1583	1774	1770	1583
Q Serve(g_s), s	19.0	28.3	0.0	5.7	27.6	27.6	8.1	16.7	18.6	5.5	6.4	14.4
Cycle Q Clear(g_c), s	19.0	28.3	0.0	5.7	27.6	27.6	14.6	16.7	18.6	5.5	6.4	14.4
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	317	2037	634	252	506	511	254	1031	577	100	1396	625
V/C Ratio(X)	1.19	0.77	0.00	0.75	0.93	0.93	0.29	0.62	0.77	0.92	0.23	0.46
Avail Cap(c_a), veh/h	317	2037	634	323	515	520	254	1031	577	100	1396	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	27.6	0.0	48.4	37.0	37.0	34.6	32.7	15.6	50.0	21.5	23.9
Incr Delay (d2), s/veh	112.8	1.8	0.0	6.8	23.8	23.6	2.8	2.8	9.5	64.7	0.4	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.2	13.5	0.0	3.0	16.8	17.0	2.0	8.5	9.6	4.5	3.2	6.7
LnGrp Delay(d),s/veh	156.5	29.4	0.0	55.1	60.8	60.6	37.4	35.5	25.1	114.7	21.8	26.3
LnGrp LOS	F	C		E	E	E	D	D	C	F	C	C
Approach Vol, veh/h		1938			1136			1158			702	
Approach Delay, s/veh		54.1			59.8			31.6			35.9	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	11.0	36.0	11.8	47.6		47.0	24.0	35.4
Change Period (Y+Rc), s	5.0	* 5	4.0	5.0		5.0	5.0	* 5
Max Green Setting (Gmax), s	6.0	* 31	10.0	40.0		41.0	19.0	* 31
Max Q Clear Time (g_c+I1), s	7.5	20.6	7.7	30.3		16.4	21.0	29.6
Green Ext Time (p_c), s	0.0	4.8	0.1	7.4		3.5	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	47.5
HCM 2010 LOS	D

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	1001	268	450	663	61	54	502	749	60	627	21
Future Volume (vph)	166	1001	268	450	663	61	54	502	749	60	627	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	300		0	145		60	130		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.968			0.987				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3426	0	1770	3493	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.376			0.950			0.138			0.172		
Satd. Flow (perm)	700	3426	0	1770	3493	0	257	1863	1583	320	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			18				24			73
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		507			578			527			677	
Travel Time (s)		11.5			13.1			12.0			15.4	
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
Adj. Flow (vph)	166	1001	268	450	663	61	54	502	749	60	627	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	1269	0	450	724	0	54	502	749	60	627	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4						2		2	6		6

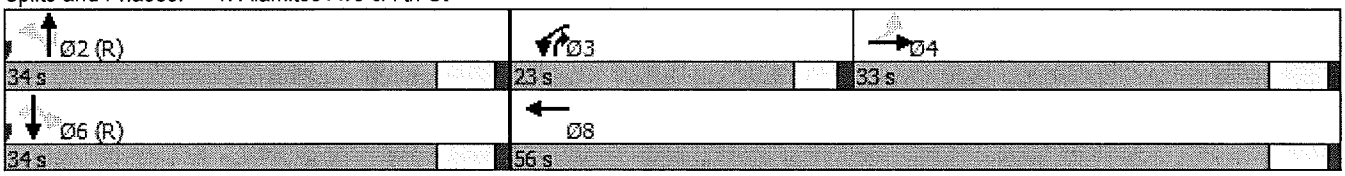
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		3	8		2	2	3	6	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	33.0	33.0		10.0	26.0		30.0	30.0	10.0	30.0	30.0	30.0
Total Split (s)	33.0	33.0		23.0	56.0		34.0	34.0	23.0	34.0	34.0	34.0
Total Split (%)	36.7%	36.7%		25.6%	62.2%		37.8%	37.8%	25.6%	37.8%	37.8%	37.8%
Maximum Green (s)	28.0	28.0		19.0	51.0		29.0	29.0	19.0	29.0	29.0	29.0
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		4.0	5.0		5.0	5.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	Yes	Yes		Yes					Yes			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0			14.0		18.0	18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)	5	5			5		5	5		5	5	5
Act Effct Green (s)	28.0	28.0		19.0	51.0		29.0	29.0	53.0	29.0	29.0	29.0
Actuated g/C Ratio	0.31	0.31		0.21	0.57		0.32	0.32	0.59	0.32	0.32	0.32
v/c Ratio	0.76	1.16		1.21	0.36		0.66	0.84	0.80	0.58	1.04	0.04
Control Delay	53.1	112.9		149.1	11.0		51.9	36.0	11.0	51.8	80.8	0.1
Queue Delay	0.0	0.6		0.0	0.0		0.0	0.0	1.7	0.0	0.0	0.0
Total Delay	53.1	113.5		149.1	11.0		51.9	36.0	12.7	51.8	80.8	0.1
LOS	D	F		F	B		D	D	B	D	F	A
Approach Delay		106.5			63.9			23.3			75.9	
Approach LOS		F			E			C			E	
Queue Length 50th (ft)	85	~448		~315	107		23	240	166	28	~391	0
Queue Length 95th (ft)	#193	#581		#499	143		m24	m251	m48	#90	#596	0
Internal Link Dist (ft)		427			498			447			597	
Turn Bay Length (ft)	55			300			145		60	130		
Base Capacity (vph)	217	1092		373	1987		82	600	942	103	600	559
Starvation Cap Reductn	0	0		0	0		0	0	80	0	0	0
Spillback Cap Reductn	0	140		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.76	1.33		1.21	0.36		0.66	0.84	0.87	0.58	1.04	0.04

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 20 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.21
Intersection Signal Delay: 67.5 — Intersection LOS: E
Intersection Capacity Utilization 115.0% — ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Alamitos Ave & 7th St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	23	56	9	5	14	50	1162	9	8	1149	186
Future Volume (vph)	124	23	56	9	5	14	50	1162	9	8	1149	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		60	225		0
Storage Lanes	1		0	0		0	1		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.894			0.932				0.850		0.979	
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1770	1665	0	0	1708	0	1770	1863	1583	1770	1824	0
Flt Permitted	0.690				0.871		0.065			0.066		
Satd. Flow (perm)	1285	1665	0	0	1512	0	121	1863	1583	123	1824	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		50			14				73		13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		536			543			380			527	
Travel Time (s)		12.2			12.3			8.6			12.0	
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
Adj. Flow (vph)	124	23	56	9	5	14	50	1162	9	8	1149	186
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	79	0	0	28	0	50	1162	9	8	1335	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2		2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	10.0	30.0		30.0	30.0		19.0	19.0	19.0	23.0	23.0	
Total Split (s)	10.0	40.0		30.0	30.0		50.0	50.0	50.0	50.0	50.0	
Total Split (%)	11.1%	44.4%		33.3%	33.3%		55.6%	55.6%	55.6%	55.6%	55.6%	
Maximum Green (s)	6.0	35.0		25.0	25.0		45.0	45.0	45.0	45.0	45.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0			5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		18.0		18.0	18.0		7.0	7.0	7.0	11.0	11.0	
Pedestrian Calls (#/hr)		5		5	5		5	5	5	5	5	
Act Effct Green (s)	17.1	16.1			10.1		63.9	63.9	63.9	63.9	63.9	
Actuated g/C Ratio	0.19	0.18			0.11		0.71	0.71	0.71	0.71	0.71	
v/c Ratio	0.45	0.23			0.15		0.59	0.88	0.01	0.09	1.03	
Control Delay	33.8	13.0			22.4		30.5	13.3	0.0	10.2	32.5	
Queue Delay	0.0	0.1			0.0		0.0	0.8	0.0	0.0	5.6	
Total Delay	33.8	13.1			22.4		30.5	14.1	0.0	10.2	38.1	
LOS	C	B			C		C	B	A	B	D	
Approach Delay		25.7			22.4			14.7			37.9	
Approach LOS		C			C			B			D	
Queue Length 50th (ft)	62	14			8		2	116	0	2	~456	
Queue Length 95th (ft)	82	38			26		m#39	#1065	m0	m2	m#876	
Internal Link Dist (ft)		456			463			300			447	
Turn Bay Length (ft)							100		60	225		
Base Capacity (vph)	278	678			430		85	1322	1145	87	1299	
Starvation Cap Reductn	0	0			0		0	37	0	0	20	
Spillback Cap Reductn	0	147			0		0	0	0	0	1	
Storage Cap Reductn	0	0			0		0	0	0	0	0	
Reduced v/c Ratio	0.45	0.15			0.07		0.59	0.90	0.01	0.09	1.04	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 26.7 Intersection LOS: C
Intersection Capacity Utilization 93.6% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.

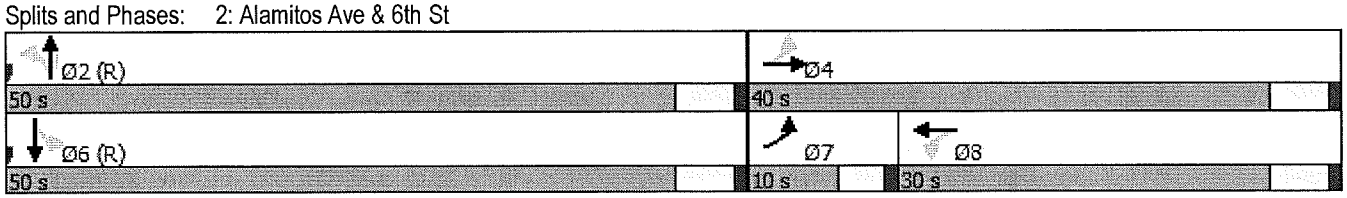
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Alamitos Ave & 6th St



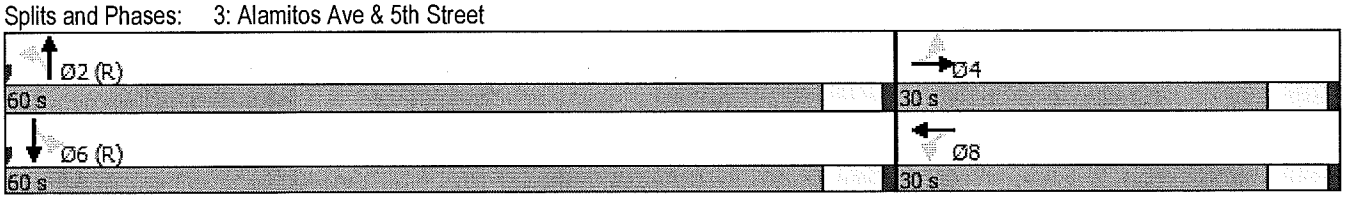
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	31	42	3	12	12	18	1171	16	40	1118	31
Future Volume (vph)	40	31	42	3	12	12	18	1171	16	40	1118	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.950			0.940			0.998			0.996	
Flt Protected		0.983			0.994		0.950			0.950		
Satd. Flow (prot)	0	1740	0	0	1740	0	1770	1859	0	1770	1855	0
Flt Permitted		0.872			0.968		0.140			0.122		
Satd. Flow (perm)	0	1543	0	0	1695	0	261	1859	0	227	1855	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			12			1			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			618			468			380	
Travel Time (s)		12.0			14.0			10.6			8.6	
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
Adj. Flow (vph)	40	31	42	3	12	12	18	1171	16	40	1118	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	113	0	0	27	0	18	1187	0	40	1149	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	11.0		30.0	30.0		19.0	19.0		19.0	19.0	
Total Split (s)	30.0	30.0		30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s)	25.0	25.0		25.0	25.0		55.0	55.0		55.0	55.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)				7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)				18.0	18.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)				5	5		5	5		5	5	
Act Effct Green (s)		12.2			12.2		71.0	71.0		71.0	71.0	
Actuated g/C Ratio		0.14			0.14		0.79	0.79		0.79	0.79	
v/c Ratio		0.48			0.11		0.09	0.81		0.22	0.78	
Control Delay		30.3			21.1		1.7	5.9		7.7	10.7	
Queue Delay		0.0			0.0		0.0	1.3		0.0	1.7	
Total Delay		30.3			21.1		1.7	7.1		7.7	12.3	
LOS		C			C		A	A		A	B	
Approach Delay		30.3			21.1			7.1			12.2	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)		43			8		1	63		6	175	
Queue Length 95th (ft)		78			26		m1	m68		m9	m312	
Internal Link Dist (ft)		450			538			388			300	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		452			479		206	1466		179	1464	
Starvation Cap Reductn		0			0		0	118		0	165	
Spillback Cap Reductn		1			0		0	110		0	34	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.25			0.06		0.09	0.88		0.22	0.88	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 10.6 Intersection LOS: B
Intersection Capacity Utilization 84.0% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Alamitos Ave & 5th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	398	44	62	220	53	42	1113	160	173	936	52
Future Volume (vph)	50	398	44	62	220	53	42	1113	160	173	936	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	55		0	50		0	115		0	155		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.971			0.981			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1809	0	1770	1827	0	1770	1848	0
Flt Permitted	0.410			0.202			0.119			0.070		
Satd. Flow (perm)	764	1863	1583	376	1809	0	222	1827	0	130	1848	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			44		13			15			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		549			626			397			468	
Travel Time (s)		12.5			14.2			9.0			10.6	
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
Adj. Flow (vph)	50	398	44	62	220	53	42	1113	160	173	936	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	398	44	62	273	0	42	1273	0	173	988	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		23.0	23.0		26.0	26.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		60.0	60.0		60.0	60.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0		55.0	55.0		55.0	55.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0		11.0	11.0		14.0	14.0	
Pedestrian Calls (#/hr)	5	5	5	5	5		5	5		5	5	
Act Effct Green (s)	22.8	22.8	22.8	22.8	22.8		57.2	57.2		57.2	57.2	
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25		0.64	0.64		0.64	0.64	
v/c Ratio	0.26	0.85	0.10	0.65	0.58		0.30	1.09		2.11	0.84	
Control Delay	29.6	49.0	8.5	62.8	33.1		12.5	64.8		540.4	17.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	4.0		0.0	2.5	
Total Delay	29.6	49.0	8.5	62.8	33.1		12.5	68.8		540.4	19.7	
LOS	C	D	A	E	C		B	E		F	B	
Approach Delay		43.4			38.6			67.0			97.3	
Approach LOS		D			D			E			F	
Queue Length 50th (ft)	22	207	0	30	125		9	~530		~160	354	
Queue Length 95th (ft)	54	#342	25	#93	204		m12	m#924		m#220	#721	
Internal Link Dist (ft)		469			546			317			388	
Turn Bay Length (ft)	55			50			115			155		
Base Capacity (vph)	212	517	471	104	511		140	1167		82	1177	
Starvation Cap Reductn	0	0	0	0	0		0	24		0	85	
Spillback Cap Reductn	0	0	2	0	0		0	64		0	99	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.24	0.77	0.09	0.60	0.53		0.30	1.15		2.11	0.92	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 80 (89%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.11
Intersection Signal Delay: 71.2 Intersection LOS: E
Intersection Capacity Utilization 120.5% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.

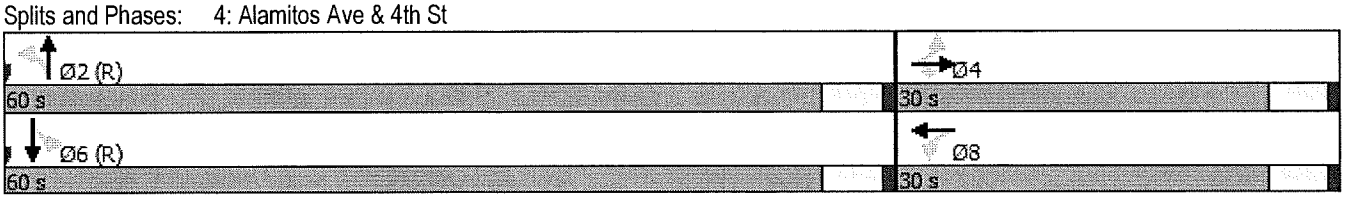
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Alamitos Ave & 4th St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	227	53	141	1298	200	96	711	190
Future Volume (vph)	0	0	0	0	227	53	141	1298	200	96	711	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	60		0	205		60	110		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.972				0.850		0.968	
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	0	0	3440	0	1770	1863	1583	1770	1803	0
Flt Permitted							0.950			0.072		
Satd. Flow (perm)	0	0	0	0	3440	0	1770	1863	1583	134	1803	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					31				54		21	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		530			470			551			397	
Travel Time (s)		12.0			10.7			12.5			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
Adj. Flow (vph)	0	0	0	0	227	53	141	1298	200	96	711	190
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	280	0	141	1298	200	96	901	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					2		1	2	1	1	2	
Detector Template					Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)					100		20	100	20	20	100	
Trailing Detector (ft)					0		0	0	0	0	0	
Detector 1 Position(ft)					0		0	0	0	0	0	
Detector 1 Size(ft)					6		20	6	20	20	6	
Detector 1 Type					Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type					NA		Prot	NA	Perm	Perm	NA	
Protected Phases					8		5	2			6	
Permitted Phases									2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase					8		5	2	2	6	6	
Switch Phase												
Minimum Initial (s)					6.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)					30.0		11.0	23.0	23.0	19.0	19.0	
Total Split (s)					30.0		11.0	60.0	60.0	49.0	49.0	
Total Split (%)					33.3%		12.2%	66.7%	66.7%	54.4%	54.4%	
Maximum Green (s)					25.0		6.0	55.0	55.0	44.0	44.0	
Yellow Time (s)					4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)					1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)					0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)					5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag							Lag			Lead	Lead	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)					3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode					None		None	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)					7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)					18.0			11.0	11.0	7.0	7.0	
Pedestrian Calls (#/hr)					5			5	5	5	5	
Act Effct Green (s)					13.8		6.0	66.2	66.2	55.2	55.2	
Actuated g/C Ratio					0.15		0.07	0.74	0.74	0.61	0.61	
v/c Ratio					0.51		1.19	0.95	0.17	1.17	0.81	
Control Delay					33.1		132.7	13.5	3.2	151.7	12.2	
Queue Delay					0.1		0.0	18.9	0.0	0.0	1.6	
Total Delay					33.1		132.7	32.4	3.2	151.7	13.9	
LOS					C		F	C	A	F	B	
Approach Delay					33.1			37.5			27.2	
Approach LOS					C			D			C	
Queue Length 50th (ft)					70		~98	350	12	~64	90	
Queue Length 95th (ft)					91		m#88	m#784	m27	m#68	m#738	
Internal Link Dist (ft)		450			390			471			317	
Turn Bay Length (ft)							205		60	110		
Base Capacity (vph)					977		118	1369	1178	82	1113	
Starvation Cap Reductn					0		0	117	0	0	90	
Spillback Cap Reductn					119		0	29	0	0	0	
Storage Cap Reductn					0		0	0	0	0	0	
Reduced v/c Ratio					0.33		1.19	1.04	0.17	1.17	0.88	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 3 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 33.5 Intersection LOS: C
Intersection Capacity Utilization 94.1% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.

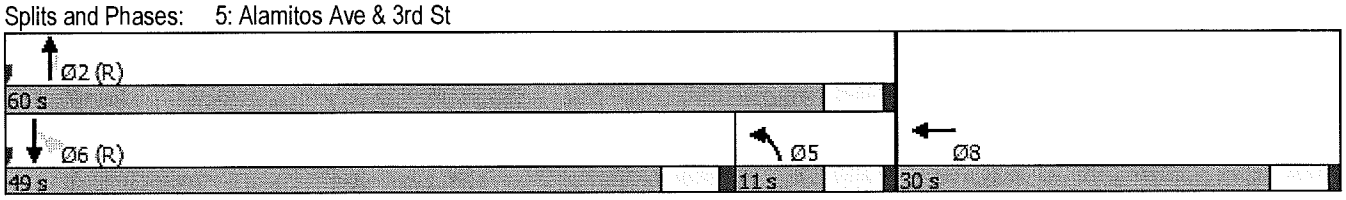
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Alamitos Ave & 3rd St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	481	908	69	138	0	173	0	1021	236	90	586	0
Future Volume (vph)	481	908	69	138	0	173	0	1021	236	90	586	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		50	0		0	0		60	120		0
Storage Lanes	1		1	1		1	0		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1770	3539	1583	1770	0	1583	0	1863	1583	1770	1863	0
Flt Permitted	0.950			0.950						0.089		
Satd. Flow (perm)	1770	3539	1583	1770	0	1583	0	1863	1583	166	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			85			85			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			630			215			551	
Travel Time (s)		13.9			14.3			4.9			12.5	
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
Adj. Flow (vph)	481	908	69	138	0	173	0	1021	236	90	586	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	481	908	69	138	0	173	0	1021	236	90	586	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1		1		2	1	1	2	
Detector Template	Left	Thru	Right	Left		Right		Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20		20		100	20	20	100	
Trailing Detector (ft)	0	0	0	0		0		0	0	0	0	
Detector 1 Position(ft)	0	0	0	0		0		0	0	0	0	
Detector 1 Size(ft)	20	6	20	20		20		6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm	Prot		Perm		NA	Perm	Perm	NA	
Protected Phases	4	4		8				2			6	
Permitted Phases			4			8			2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8		8		2	2	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0		6.0		6.0	6.0	6.0	6.0	
Minimum Split (s)	23.0	23.0	23.0	11.0		11.0		26.0	26.0	30.0	30.0	
Total Split (s)	28.0	28.0	28.0	12.0		12.0		50.0	50.0	50.0	50.0	
Total Split (%)	31.1%	31.1%	31.1%	13.3%		13.3%		55.6%	55.6%	55.6%	55.6%	
Maximum Green (s)	23.0	23.0	23.0	7.0		7.0		45.0	45.0	45.0	45.0	
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0		5.0	5.0	5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None		None		C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0					14.0	14.0	18.0	18.0	
Pedestrian Calls (#/hr)	5	5	5					5	5	5	5	
Act Effct Green (s)	23.0	23.0	23.0	7.0		7.0		45.0	45.0	45.0	45.0	
Actuated g/C Ratio	0.26	0.26	0.26	0.08		0.08		0.50	0.50	0.50	0.50	
v/c Ratio	1.06	1.00	0.15	1.01		0.86		1.10	0.28	1.08	0.63	
Control Delay	94.8	65.8	5.4	123.4		59.2		75.9	8.3	120.5	9.1	
Queue Delay	0.0	0.0	0.0	0.0		2.3		2.2	0.0	0.0	0.4	
Total Delay	94.8	65.8	5.4	123.4		61.5		78.1	8.3	120.5	9.5	
LOS	F	E	A	F		E		E	A	F	A	
Approach Delay		72.5			89.0			65.0			24.3	
Approach LOS		E			F			E			C	
Queue Length 50th (ft)	~305	~274	0	~80		50		~664	18	~53	73	
Queue Length 95th (ft)	#492	#407	24	#197		#166		#898	m66	m#81	m91	
Internal Link Dist (ft)		530			550			135			471	
Turn Bay Length (ft)	120		50						60	120		
Base Capacity (vph)	452	904	467	137		201		931	834	83	931	
Starvation Cap Reductn	0	0	0	0		0		73	0	0	76	
Spillback Cap Reductn	0	0	0	0		5		129	0	0	0	
Storage Cap Reductn	0	0	0	0		0		0	0	0	0	
Reduced v/c Ratio	1.06	1.00	0.15	1.01		0.88		1.27	0.28	1.08	0.69	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 6 (7%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 62.5 Intersection LOS: E
Intersection Capacity Utilization 108.1% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.

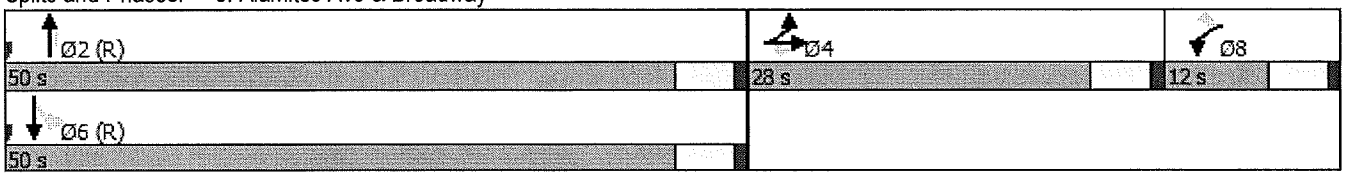
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Alamitos Ave & Broadway



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	181	48	78	1070	654	98
Future Volume (vph)	181	48	78	1070	654	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	60			0
Storage Lanes	1	0	1			1
Taper Length (ft)	60		60			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.972					0.850
Flt Protected	0.962		0.950			
Satd. Flow (prot)	1742	0	1770	1863	1863	1583
Flt Permitted	0.962		0.352			
Satd. Flow (perm)	1742	0	656	1863	1863	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	14					98
Link Speed (mph)	30			30	30	
Link Distance (ft)	550			219	212	
Travel Time (s)	12.5			5.0	4.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	181	48	78	1070	654	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	229	0	78	1070	654	98
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	1
Detector Template	Left		Left	Thru	Thru	Right
Leading Detector (ft)	20		20	100	100	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm		Perm	NA	NA	Perm
Protected Phases				2	6	
Permitted Phases	4		2			6

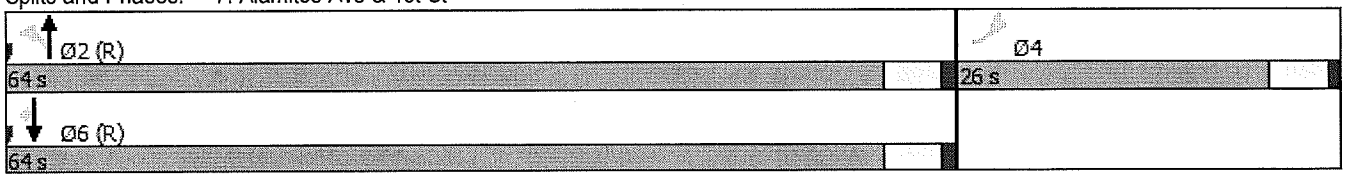
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4		2	2	6	6
Switch Phase						
Minimum Initial (s)	6.0		6.0	6.0	6.0	6.0
Minimum Split (s)	26.0		11.0	11.0	19.0	19.0
Total Split (s)	26.0		64.0	64.0	64.0	64.0
Total Split (%)	28.9%		71.1%	71.1%	71.1%	71.1%
Maximum Green (s)	21.0		59.0	59.0	59.0	59.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		C-Max	C-Max	C-Max	C-Max
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	14.0				7.0	7.0
Pedestrian Calls (#/hr)	5				5	5
Act Effct Green (s)	16.0		64.0	64.0	64.0	64.0
Actuated g/C Ratio	0.18		0.71	0.71	0.71	0.71
v/c Ratio	0.71		0.17	0.81	0.49	0.08
Control Delay	44.6		6.3	16.6	1.9	0.2
Queue Delay	3.5		0.0	10.4	0.3	0.0
Total Delay	48.1		6.3	27.0	2.2	0.2
LOS	D		A	C	A	A
Approach Delay	48.1			25.6	2.0	
Approach LOS	D			C	A	
Queue Length 50th (ft)	116		13	357	8	0
Queue Length 95th (ft)	181		35	#787	m17	m0
Internal Link Dist (ft)	470			139	132	
Turn Bay Length (ft)			60			
Base Capacity (vph)	417		466	1323	1323	1153
Starvation Cap Reductn	0		0	141	230	0
Spillback Cap Reductn	111		0	238	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.75		0.17	0.99	0.60	0.08

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 8 (9%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 19.6 Intersection LOS: B
Intersection Capacity Utilization 77.6% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Alamitos Ave & 1st St



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	104	0	1108	600	84
Future Volume (vph)	0	104	0	1108	600	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt		0.865			0.983	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	1831	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	1831	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	472			224	231	
Travel Time (s)	10.7			5.1	5.3	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	104	0	1108	600	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	104	0	1108	684	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 49.8% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	377	1561	53	188	833	115	73	641	444	92	321	289
Future Volume (vph)	377	1561	53	188	833	115	73	641	444	92	321	289
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		50	230		0	220		0	60		60
Storage Lanes	1		1	2		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.982				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	3433	3476	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.529			0.950		
Satd. Flow (perm)	1770	5085	1583	3433	3476	0	985	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			114		15				125			289
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		542			607			703			224	
Travel Time (s)		12.3			13.8			16.0			5.1	
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
Adj. Flow (vph)	377	1561	53	188	833	115	73	641	444	92	321	289
Shared Lane Traffic (%)												
Lane Group Flow (vph)	377	1561	53	188	948	0	73	641	444	92	321	289
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8			2	3	1	6	
Permitted Phases			4				2		2			6

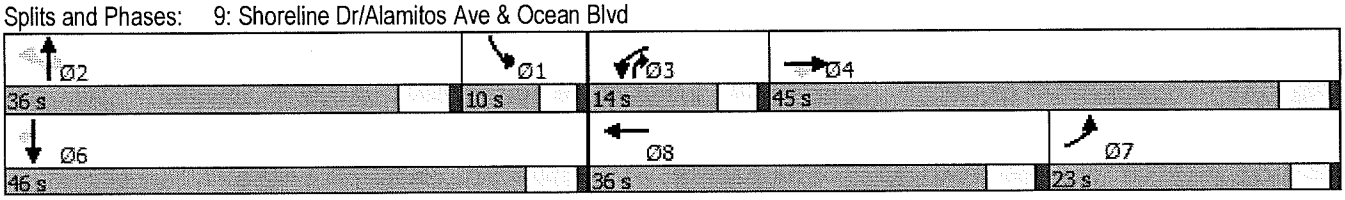
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		2	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0	10.0	36.0		36.0	36.0	10.0	10.0	36.0	36.0
Total Split (s)	23.0	45.0	45.0	14.0	36.0		36.0	36.0	14.0	10.0	46.0	46.0
Total Split (%)	21.9%	42.9%	42.9%	13.3%	34.3%		34.3%	34.3%	13.3%	9.5%	43.8%	43.8%
Maximum Green (s)	19.0	40.0	40.0	10.0	31.0		31.0	31.0	10.0	6.0	41.0	41.0
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0		5.0	5.0	4.0	4.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		Max	Max	None	None	Max	Max
Walk Time (s)		7.0	7.0		7.0		7.0	7.0			7.0	7.0
Flash Dont Walk (s)		24.0	24.0		24.0		24.0	24.0			24.0	24.0
Pedestrian Calls (#/hr)		5	5		5		5	5			5	5
Act Effct Green (s)	19.0	40.0	40.0	9.5	30.6		31.0	31.0	41.6	6.0	41.0	41.0
Actuated g/C Ratio	0.18	0.38	0.38	0.09	0.29		0.30	0.30	0.40	0.06	0.39	0.39
v/c Ratio	1.17	0.80	0.08	0.60	0.92		0.25	0.61	0.63	0.91	0.23	0.36
Control Delay	144.9	32.7	0.2	54.3	50.8		31.1	34.7	16.1	117.8	21.9	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	144.9	32.7	0.2	54.3	50.8		31.1	34.7	16.1	117.8	21.9	3.9
LOS	F	C	A	D	D		C	C	B	F	C	A
Approach Delay		53.1			51.4			27.3			27.1	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	~304	338	0	63	318		37	194	125	63	74	0
Queue Length 95th (ft)	#488	400	0	100	#442		77	255	208	#162	107	52
Internal Link Dist (ft)		462			527			623			144	
Turn Bay Length (ft)	225		50	230			220			60		60
Base Capacity (vph)	321	1947	676	327	1040		291	1049	710	101	1387	796
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.17	0.80	0.08	0.57	0.91		0.25	0.61	0.63	0.91	0.23	0.36

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 104.6
Natural Cycle: 105
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 43.1 Intersection LOS: D
Intersection Capacity Utilization 85.4% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd



APPENDIX C

SIMTRAFFIC QUEUING WORKSHEETS

APPENDIX C-I

EXISTING PLUS PROJECT TRAFFIC CONDITIONS

Queuing and Blocking Report

Intersection: 1: Alamitos Ave & 7th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	105	224	202	359	486	431	204	413	120	189	301	92
Average Queue (ft)	26	128	71	157	273	251	67	148	86	47	149	29
95th Queue (ft)	69	202	156	297	405	373	153	317	153	127	259	66
Link Distance (ft)		460	460		531	531		425			620	620
Upstream Blk Time (%)					0	0		0				
Queuing Penalty (veh)					0	0		1				
Storage Bay Dist (ft)	55			300			145		60	130		
Storage Blk Time (%)	2	41		0	4		1	21	2	0	13	
Queuing Penalty (veh)	3	9		1	9		4	98	9	0	7	

Intersection: 2: Alamitos Ave & 6th St

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	TR	LTR	T	R	L	T
Maximum Queue (ft)	303	87	81	187	11	24	172
Average Queue (ft)	169	42	28	72	1	2	35
95th Queue (ft)	270	71	65	150	7	12	115
Link Distance (ft)	490	490	500	296			425
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)					60	225	
Storage Blk Time (%)				11			0
Queuing Penalty (veh)				1			0

Intersection: 3: Alamitos Ave & 5th Street

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	145	115	76	67	46	196
Average Queue (ft)	63	46	23	14	8	45
95th Queue (ft)	115	92	54	44	30	129
Link Distance (ft)	486	574		385		296
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			60		60	
Storage Blk Time (%)			1	0	0	4
Queuing Penalty (veh)			3	0	0	1

Queuing and Blocking Report

Intersection: 4: Alamitos Ave & 4th St

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	95	182	38	110	622	174	273	196	364
Average Queue (ft)	24	85	9	98	507	67	130	66	167
95th Queue (ft)	64	152	31	136	730	143	239	160	318
Link Distance (ft)		503	503		581		274		385
Upstream Blk Time (%)					38		0		0
Queuing Penalty (veh)					0		1		2
Storage Bay Dist (ft)	55			50		115		155	
Storage Blk Time (%)	6	17		57	48	3	9		10
Queuing Penalty (veh)	12	6		276	84	12	8		9

Intersection: 5: Alamitos Ave & 3rd St

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	T	TR	L	T	R	L	TR
Maximum Queue (ft)	423	368	260	356	76	169	293
Average Queue (ft)	273	226	182	116	6	25	237
95th Queue (ft)	391	343	270	293	37	101	344
Link Distance (ft)	410	410		474			274
Upstream Blk Time (%)	2	1		0			10
Queuing Penalty (veh)	0	0		3			71
Storage Bay Dist (ft)			205		60	110	
Storage Blk Time (%)			8	12			38
Queuing Penalty (veh)			33	39			11

Intersection: 6: Alamitos Ave & Broadway

Movement	EB	EB	EB	EB	WB	WB	NB	NB	B28	SB	SB
Directions Served	L	T	T	R	L	R	T	R	T	L	T
Maximum Queue (ft)	154	195	172	66	352	176	181	116	40	52	50
Average Queue (ft)	56	112	58	17	205	76	90	16	2	12	12
95th Queue (ft)	114	177	137	45	309	131	162	66	25	38	41
Link Distance (ft)		572	572		587	587	131		157		474
Upstream Blk Time (%)							4	0			
Queuing Penalty (veh)							11	0			
Storage Bay Dist (ft)	120			50				60		120	
Storage Blk Time (%)	0	10	12	1			22	0			
Queuing Penalty (veh)	0	7	3	1			8	0			

Queuing and Blocking Report

Intersection: 7: Alamitos Ave & 1st St

Movement	EB	NB	NB	SB	SB	B28
Directions Served	LR	L	T	T	R	T
Maximum Queue (ft)	106	40	40	166	48	9
Average Queue (ft)	49	11	6	23	5	0
95th Queue (ft)	96	37	27	100	27	5
Link Distance (ft)	508		160	157	157	131
Upstream Blk Time (%)				0		
Queuing Penalty (veh)				1		
Storage Bay Dist (ft)		60				
Storage Blk Time (%)		0	0			
Queuing Penalty (veh)		0	0			

Intersection: 8: Alamitos Ave & Medio St

Movement	EB	SB	B29
Directions Served	R	TR	T
Maximum Queue (ft)	26	251	83
Average Queue (ft)	5	57	4
95th Queue (ft)	22	181	36
Link Distance (ft)	402	180	160
Upstream Blk Time (%)		2	0
Queuing Penalty (veh)		11	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Intersection: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	L	T	TR	L	T	T
Maximum Queue (ft)	155	187	169	76	36	220	290	547	554	76	89	23
Average Queue (ft)	73	118	76	11	2	125	266	473	458	22	25	1
95th Queue (ft)	144	181	151	45	16	208	348	611	613	58	67	11
Link Distance (ft)		457	457	457				506	506		608	608
Upstream Blk Time (%)								25	20			
Queuing Penalty (veh)								0	0			
Storage Bay Dist (ft)	225				50	230	230			220		
Storage Blk Time (%)		0		1	0	0	1	42				
Queuing Penalty (veh)		0		0	0	0	7	133				

Intersection: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	R
Maximum Queue (ft)	38	58	78	103	65
Average Queue (ft)	7	14	30	55	51
95th Queue (ft)	26	41	71	106	77
Link Distance (ft)	608		65	65	
Upstream Blk Time (%)		1	1	7	6
Queuing Penalty (veh)		0	5	24	0
Storage Bay Dist (ft)		60			60
Storage Blk Time (%)		1	2	8	8
Queuing Penalty (veh)		1	1	29	11

Network Summary

Network wide Queuing Penalty: 967

Queuing and Blocking Report

Intersection: 1: Alamitos Ave & 7th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	114	464	440	281	314	201	204	444	120	189	648	642
Average Queue (ft)	34	265	218	111	138	99	99	410	114	70	385	231
95th Queue (ft)	95	416	377	241	236	178	221	521	149	191	770	708
Link Distance (ft)		460	460		531	531		425			620	620
Upstream Blk Time (%)		3	2					18			39	21
Queuing Penalty (veh)		0	0					228			0	0
Storage Bay Dist (ft)	55			300			145		60	130		
Storage Blk Time (%)	3	59		2	0		3	51	13	0	54	
Queuing Penalty (veh)	9	22		8	0		38	433	66	0	31	

Intersection: 2: Alamitos Ave & 6th St

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	TR	LTR	T	R	L	T
Maximum Queue (ft)	533	523	168	310	99	232	438
Average Queue (ft)	457	388	52	265	9	16	240
95th Queue (ft)	633	684	144	373	58	115	559
Link Distance (ft)	490	490	500	296			425
Upstream Blk Time (%)	71	40		16			22
Queuing Penalty (veh)	0	0		131			109
Storage Bay Dist (ft)					60	225	
Storage Blk Time (%)				48			41
Queuing Penalty (veh)				4			3

Intersection: 3: Alamitos Ave & 5th Street

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	311	88	119	394	119	311
Average Queue (ft)	120	23	14	203	26	203
95th Queue (ft)	282	59	67	417	92	414
Link Distance (ft)	486	574		385		296
Upstream Blk Time (%)	2			1		35
Queuing Penalty (veh)	0			9		269
Storage Bay Dist (ft)			60		60	
Storage Blk Time (%)				36	0	49
Queuing Penalty (veh)				6	3	19

Queuing and Blocking Report

Intersection: 4: Alamitos Ave & 4th St

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	115	456	144	109	347	174	286	215	400
Average Queue (ft)	51	276	23	59	165	35	192	184	293
95th Queue (ft)	118	456	95	119	288	124	337	263	522
Link Distance (ft)		503	503		581		274		385
Upstream Blk Time (%)		2	0				2		34
Queuing Penalty (veh)		0	0				24		241
Storage Bay Dist (ft)	55			50		115		155	
Storage Blk Time (%)	12	60		34	51		19	71	3
Queuing Penalty (veh)	45	26		85	28		7	394	6

Intersection: 5: Alamitos Ave & 3rd St

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	T	TR	L	T	R	L	TR
Maximum Queue (ft)	195	168	265	484	120	167	235
Average Queue (ft)	96	56	129	277	66	71	81
95th Queue (ft)	161	122	267	511	154	150	202
Link Distance (ft)	410	410		474			274
Upstream Blk Time (%)				2			0
Queuing Penalty (veh)				24			0
Storage Bay Dist (ft)			205		60	110	
Storage Blk Time (%)			5	27	0	11	6
Queuing Penalty (veh)			55	82	1	54	5

Intersection: 6: Alamitos Ave & Broadway

Movement	EB	EB	EB	EB	WB	WB	NB	NB	B28	SB	SB
Directions Served	L	T	T	R	L	R	T	R	T	L	T
Maximum Queue (ft)	180	603	577	110	192	269	232	120	251	160	259
Average Queue (ft)	177	478	414	42	92	102	194	86	154	70	60
95th Queue (ft)	194	673	620	119	160	207	247	159	309	150	197
Link Distance (ft)		572	572		587	587	131		157		474
Upstream Blk Time (%)		18	4				39	1	20		0
Queuing Penalty (veh)		0	0				376	0	193		1
Storage Bay Dist (ft)	120			50				60		120	
Storage Blk Time (%)	53	48	66	1			46	7		10	1
Queuing Penalty (veh)	224	177	33	4			103	49		27	1

Queuing and Blocking Report

Intersection: 7: Alamitos Ave & 1st St

Movement	EB	NB	NB	B29	SB	SB
Directions Served	LR	L	T	T	T	R
Maximum Queue (ft)	222	119	256	288	83	35
Average Queue (ft)	110	15	141	90	17	6
95th Queue (ft)	186	66	292	286	56	26
Link Distance (ft)	508		160	180	157	157
Upstream Blk Time (%)			21	9		
Queuing Penalty (veh)			170	37		
Storage Bay Dist (ft)		60				
Storage Blk Time (%)			27			
Queuing Penalty (veh)			5			

Intersection: 8: Alamitos Ave & Medio St

Movement	EB	NB	NB	SB
Directions Served	R	T	T	TR
Maximum Queue (ft)	26	166	72	23
Average Queue (ft)	9	28	5	1
95th Queue (ft)	28	118	33	10
Link Distance (ft)	402	65	65	180
Upstream Blk Time (%)		6	1	
Queuing Penalty (veh)		26	3	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report

Intersection: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	L	T	TR	L	T	T
Maximum Queue (ft)	285	497	473	415	110	179	232	373	349	187	470	419
Average Queue (ft)	265	410	347	242	27	55	117	205	190	26	226	91
95th Queue (ft)	341	560	509	401	103	156	199	303	286	101	408	331
Link Distance (ft)		457	457	457				506	506		608	608
Upstream Blk Time (%)		36	2	1				0			2	1
Queuing Penalty (veh)		0	0	0				0			0	0
Storage Bay Dist (ft)	225				50	230	230			220		
Storage Blk Time (%)	53	15		48	0	0	0	4			15	
Queuing Penalty (veh)	248	45		24	0	0	0	8			6	

Intersection: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	R
Maximum Queue (ft)	327	54	72	72	50
Average Queue (ft)	106	17	13	7	9
95th Queue (ft)	261	43	49	37	34
Link Distance (ft)	608		65	65	
Upstream Blk Time (%)	1	0	1	0	0
Queuing Penalty (veh)	0	0	2	1	0
Storage Bay Dist (ft)		60			60
Storage Blk Time (%)		0	1	0	0
Queuing Penalty (veh)		0	1	1	0

Network Summary

Network wide Queuing Penalty: 4232

APPENDIX C-II

YEAR 2020 CUMULATIVE PLUS PROJECT TRAFFIC CONDITIONS

Queuing and Blocking Report

Intersection: 1: Alamitos Ave & 7th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	115	496	489	360	581	546	204	445	120	190	670	648
Average Queue (ft)	108	412	307	359	550	497	94	426	115	84	620	525
95th Queue (ft)	127	588	580	368	584	583	218	477	144	205	719	903
Link Distance (ft)		460	460		531	531		425			620	620
Upstream Blk Time (%)		52	8		82	2		34			76	35
Queuing Penalty (veh)		0	0		0	0		355			0	0
Storage Bay Dist (ft)	55			300			145		60	130		
Storage Blk Time (%)	93	9		84	1		6	61	29	1	72	
Queuing Penalty (veh)	215	11		505	2		63	339	153	8	42	

Intersection: 2: Alamitos Ave & 6th St

Movement	EB	EB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	LTR	L	T	R	L	TR
Maximum Queue (ft)	488	344	101	160	311	120	24	158
Average Queue (ft)	291	106	42	71	286	9	1	62
95th Queue (ft)	572	379	91	182	372	61	11	135
Link Distance (ft)	490	490	500		296			425
Upstream Blk Time (%)	23	7			32			
Queuing Penalty (veh)	0	0			305			
Storage Bay Dist (ft)				100		60	225	
Storage Blk Time (%)				2	66			
Queuing Penalty (veh)				14	39			

Intersection: 3: Alamitos Ave & 5th Street

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	295	151	119	396	81	247
Average Queue (ft)	112	54	49	324	11	106
95th Queue (ft)	271	115	129	518	45	197
Link Distance (ft)	486	574		385		296
Upstream Blk Time (%)	0			9		0
Queuing Penalty (veh)	0			81		0
Storage Bay Dist (ft)			60		60	
Storage Blk Time (%)			0	61		14
Queuing Penalty (veh)			3	32		3

Intersection: 4: Alamitos Ave & 4th St

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	114	238	56	110	620	175	292	214	388
Average Queue (ft)	37	113	15	96	597	104	265	81	234
95th Queue (ft)	94	200	44	139	630	226	341	195	363
Link Distance (ft)		503	503		581		274		385
Upstream Blk Time (%)					82		36		1
Queuing Penalty (veh)					0		309		5
Storage Bay Dist (ft)	55			50		115		155	
Storage Blk Time (%)	11	30		73	48	4	67	2	24
Queuing Penalty (veh)	22	14		390	92	32	60	18	24

Intersection: 5: Alamitos Ave & 3rd St

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	T	TR	L	T	R	L	TR
Maximum Queue (ft)	451	449	265	495	120	169	294
Average Queue (ft)	402	391	250	442	39	32	269
95th Queue (ft)	500	513	315	596	130	120	328
Link Distance (ft)	410	410		474			274
Upstream Blk Time (%)	64	73		25			13
Queuing Penalty (veh)	0	0		284			135
Storage Bay Dist (ft)			205		60	110	
Storage Blk Time (%)			10	67	0		41
Queuing Penalty (veh)			77	246	0		13

Intersection: 6: Alamitos Ave & Broadway

Movement	EB	EB	EB	EB	WB	WB	NB	NB	B28	SB	SB
Directions Served	L	T	T	R	L	R	T	R	T	L	T
Maximum Queue (ft)	180	574	537	110	613	632	232	120	255	53	178
Average Queue (ft)	157	311	222	30	477	477	198	44	164	16	51
95th Queue (ft)	216	621	520	92	771	801	231	136	293	45	120
Link Distance (ft)		572	572		587	587	131		157		474
Upstream Blk Time (%)		9	0		45	62	72	0	48		
Queuing Penalty (veh)		0	0		0	0	390	0	260		
Storage Bay Dist (ft)	120			50				60		120	
Storage Blk Time (%)	65	6	38	1			76	0			1
Queuing Penalty (veh)	83	11	13	1			35	1			0

Queuing and Blocking Report

Intersection: 7: Alamitos Ave & 1st St

Movement	EB	NB	NB	B29	SB	SB	B28
Directions Served	LR	L	T	T	T	R	T
Maximum Queue (ft)	526	106	243	254	215	58	111
Average Queue (ft)	329	30	131	73	93	15	9
95th Queue (ft)	644	91	286	243	197	47	66
Link Distance (ft)	508		160	180	157	157	131
Upstream Blk Time (%)	46		31	9	3		1
Queuing Penalty (veh)	0		136	19	14		6
Storage Bay Dist (ft)		60					
Storage Blk Time (%)		1	41				
Queuing Penalty (veh)		3	14				

Intersection: 8: Alamitos Ave & Medio St

Movement	EB	NB	NB	SB	B29
Directions Served	R	T	T	TR	T
Maximum Queue (ft)	188	99	15	236	148
Average Queue (ft)	63	20	2	73	23
95th Queue (ft)	142	82	20	226	126
Link Distance (ft)	402	65	65	180	160
Upstream Blk Time (%)		5	1	4	2
Queuing Penalty (veh)		10	1	40	17
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Intersection: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	L	T	TR	L	T	T
Maximum Queue (ft)	284	447	402	217	86	225	290	554	543	147	254	171
Average Queue (ft)	217	256	171	45	6	113	263	524	518	35	102	14
95th Queue (ft)	329	516	405	146	40	217	365	541	556	99	211	109
Link Distance (ft)		457	457	457				506	506		608	608
Upstream Blk Time (%)		19	0					49	46			
Queuing Penalty (veh)		0	0					0	0			
Storage Bay Dist (ft)	225				50	230	230			220		
Storage Blk Time (%)	35	1		10	0	0	2	50			3	
Queuing Penalty (veh)	63	1		4	1	0	15	169			1	

Intersection: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	R
Maximum Queue (ft)	51	64	88	98	65
Average Queue (ft)	10	24	49	63	51
95th Queue (ft)	34	58	95	106	77
Link Distance (ft)	608		65	65	
Upstream Blk Time (%)		2	7	16	7
Queuing Penalty (veh)		0	35	83	0
Storage Bay Dist (ft)		60			60
Storage Blk Time (%)		2	10	17	9
Queuing Penalty (veh)		5	8	75	23

Network Summary

Network wide Queuing Penalty: 5429

Intersection: 1: Alamitos Ave & 7th St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	115	498	508	360	574	538	204	441	120	190	651	662
Average Queue (ft)	66	463	475	352	519	241	53	330	116	61	614	526
95th Queue (ft)	144	587	502	392	680	627	160	521	144	190	724	906
Link Distance (ft)		460	460		531	531		425			620	620
Upstream Blk Time (%)		68	87		85	0		6			84	62
Queuing Penalty (veh)		0	0		0	0		78			0	0
Storage Bay Dist (ft)	55			300			145		60	130		
Storage Blk Time (%)	15	52		87	0		0	54	9	0	85	
Queuing Penalty (veh)	74	86		289	0		0	434	49	1	51	

Intersection: 2: Alamitos Ave & 6th St

Movement	EB	EB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	LTR	L	T	R	L	TR
Maximum Queue (ft)	219	356	180	159	309	75	226	441
Average Queue (ft)	87	144	68	37	246	5	10	382
95th Queue (ft)	249	389	260	120	385	40	85	519
Link Distance (ft)	490	490	500		296			425
Upstream Blk Time (%)	1	6	2		7			40
Queuing Penalty (veh)	0	0	0		89			532
Storage Bay Dist (ft)				100		60	225	
Storage Blk Time (%)				2	46			59
Queuing Penalty (veh)				24	27			5

Intersection: 3: Alamitos Ave & 5th Street

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	445	114	99	399	100	310
Average Queue (ft)	167	28	10	215	19	249
95th Queue (ft)	409	91	56	440	76	394
Link Distance (ft)	486	574		385		296
Upstream Blk Time (%)	8			2		39
Queuing Penalty (veh)	0			25		478
Storage Bay Dist (ft)			60		60	
Storage Blk Time (%)				41	1	59
Queuing Penalty (veh)				7	6	24

Intersection: 4: Alamitos Ave & 4th St

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	115	438	226	109	545	175	291	215	402
Average Queue (ft)	46	245	88	73	299	44	268	151	345
95th Queue (ft)	113	440	306	131	647	150	327	279	476
Link Distance (ft)		503	503		581		274		385
Upstream Blk Time (%)		5	5		28		19		41
Queuing Penalty (veh)		0	0		0		262		478
Storage Bay Dist (ft)	55			50		115		155	
Storage Blk Time (%)	5	50		57	35		45	36	49
Queuing Penalty (veh)	22	25		156	22		19	351	85

Intersection: 5: Alamitos Ave & 3rd St

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	T	TR	L	T	R	L	TR
Maximum Queue (ft)	183	184	265	493	120	170	292
Average Queue (ft)	102	77	136	424	64	129	195
95th Queue (ft)	164	154	301	592	156	206	361
Link Distance (ft)	410	410		474			274
Upstream Blk Time (%)				9			31
Queuing Penalty (veh)				146			322
Storage Bay Dist (ft)			205		60	110	
Storage Blk Time (%)			0	42	0	63	7
Queuing Penalty (veh)			6	142	0	565	7

Intersection: 6: Alamitos Ave & Broadway

Movement	EB	EB	EB	EB	WB	WB	NB	NB	B28	SB	SB
Directions Served	L	T	T	R	L	R	T	R	T	L	T
Maximum Queue (ft)	180	626	603	110	330	436	231	120	248	103	172
Average Queue (ft)	179	584	541	54	159	226	205	100	209	30	47
95th Queue (ft)	188	655	665	135	365	474	220	164	276	79	124
Link Distance (ft)		572	572		587	587	131		157		474
Upstream Blk Time (%)		76	15		3	4	61	1	48		
Queuing Penalty (veh)		0	0		0	0	769	0	599		
Storage Bay Dist (ft)	120			50				60		120	
Storage Blk Time (%)	72	42	70	2			64	3		0	1
Queuing Penalty (veh)	325	202	49	8			151	35		1	1

Intersection: 7: Alamitos Ave & 1st St

Movement	EB	NB	NB	B29	B29	SB	SB	B28
Directions Served	LR	L	T	T		T	R	T
Maximum Queue (ft)	546	120	254	297	42	189	31	18
Average Queue (ft)	452	52	226	236	3	53	5	1
95th Queue (ft)	684	131	284	366	40	143	22	9
Link Distance (ft)	508		160	180	180	157	157	131
Upstream Blk Time (%)	76		60	41	0	1		
Queuing Penalty (veh)	0		665	227	1	3		
Storage Bay Dist (ft)		60						
Storage Blk Time (%)		1	61					
Queuing Penalty (veh)		10	47					

Intersection: 8: Alamitos Ave & Medio St

Movement	EB	NB	NB	SB	B29
Directions Served	R	T	T	TR	T
Maximum Queue (ft)	97	184	101	173	10
Average Queue (ft)	35	106	33	12	0
95th Queue (ft)	66	197	93	82	5
Link Distance (ft)	402	65	65	180	160
Upstream Blk Time (%)		33	4	0	
Queuing Penalty (veh)		185	23	3	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Intersection: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	L	T	TR	L	T	T
Maximum Queue (ft)	285	508	480	477	110	178	290	558	545	280	647	645
Average Queue (ft)	281	467	385	283	18	54	230	471	465	149	606	591
95th Queue (ft)	312	536	568	474	84	145	384	641	640	368	720	758
Link Distance (ft)		457	457	457				506	506		608	608
Upstream Blk Time (%)		80	4	4				49	51		81	63
Queuing Penalty (veh)		0	0	0				0	0		0	0
Storage Bay Dist (ft)	225				50	230	230			220		
Storage Blk Time (%)	85	5		50	0		0	63			87	
Queuing Penalty (veh)	442	20		27	1		1	118			64	

Intersection: 9: Shoreline Dr/Alamitos Ave & Ocean Blvd

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	R
Maximum Queue (ft)	637	61	92	88	65
Average Queue (ft)	521	24	30	24	22
95th Queue (ft)	852	58	79	73	63
Link Distance (ft)	608		65	65	
Upstream Blk Time (%)	30	3	4	1	1
Queuing Penalty (veh)	0	0	16	5	0
Storage Bay Dist (ft)		60			60
Storage Blk Time (%)		3	5	1	1
Queuing Penalty (veh)		4	5	4	1

Network Summary

Network wide Queuing Penalty: 8897

APPENDIX D

MULTIMODAL CALCULATION WORKSHEETS

APPENDIX D-I

EXISTING TRAFFIC CONDITIONS

Table 1
Multimodal Level of Service Summary Table
Alamitos Avenue, between 7th Street and Ocean Boulevard

CHECKLIST FOR COMPLETE STREETS

The checklist is designed to assist agencies in assesssing the degree to which their streets meet the requirements of the California Complete Streets Act (AB 1358, 2009), specifically, "**Does the street meet the needs of motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and useres of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the street?**"

EXISTING CONDITIONS

Street: **Alamitos Avenue**	Context:
Limits: **7th Street and Ocean Boulevard**	

User Groups	(1) Minimum LOS Acceptable to Agency	(2) Calculated LOS	(3) Percent
1. Motorists	**D**	**E**	**50%**
2. Transit Passengers	**C**	**D**	**67%**
3. Bicyclists	**C**	**D**	**67%**
4. Pedestrians	**C**	**C**	**100%**
5. Children			**100%**
a. Are adequately marked/controlled school crossings provided as needed?			**100%**
b. Does the street meet the agency's design and lighting policies?			**100%**
6. Persons with Disabilities **7. Seniors**			**83%**
a. Are there accessible routes on both sides of the street?			**100%**
b. Are the street crossings accessible?			**100%**
c. Are the traffic signals accessible?			**100%**
d. Are there sufficient on-street parking spaces?			**100%**
e. Are there sufficient accessible passenger loading zones?			**0%**
f. Are bus stops accessible?			**100%**
8. Movers of Commercial Goods			**--**
a. Are streets designed to accommodate trucks?			**--**
b. Are there adequate truck routes for through trucks here or nearby?			**--**
c. Are there adequate on-street loading zones/off-street loading docks?			**--**

Overall Assessment: According to the data and weights entered above, Alamitos Avenue meets 67% of the above criteria.

TABLE F-1
PUBLIC TRANSIT LEVEL OF SERVICE SUMMARY TABLE
Alamitos Avenue, between 7th Street and Ocean Boulevard
EXISTING CONDITIONS

LOS Category	(1) Mixed Use Centers and Commercial Corridors	(2) Remainder of Service Area	(3) LOS Category Met? Yes/No
Hours of Weekday Service	≥ 18 hours	≥ 16 hours	**YES**
Weekday Frequency of Service	≤ 15 minutes	≤ 20 minutes	**NO**
Travel Time Factor	≤ 2.0 X	≤ 2.0 X	**YES**
Peak Load Factor	≤ 1.2	≤ 1.2	**N/A**

LOS Ratings	Number of Service Level Standards Met					LOS Results
	All 4	3 of 4	2 of 4	1 of 4	None	
Areas within 1,320 ft of transit routes	A	B	D	E	F	**D**
Areas within 2,640 ft of transit routes	B	C	D	E	F	**D**

Options		Option 1 or 2	PUBLIC TRANSIT LOS
Areas within 1,320 ft of transit routes	**1**	**1**	**D**
Areas within 2,640 ft of transit routes	**2**		

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TABLE F-2
PEDESTRIAN LEVEL OF SERVICE SUMMARY TABLE
Alamitos Avenue, between 7th Street and Ocean Boulevard
EXISTING CONDITIONS

LOS Criteria		Criteria Met?
1	Walkability	**100%**
	A. Existence of Sidewalk	100%
	B. Sidewalk Continuity	100%
2	Setbacks	**65%**
	A. Curb Lane Width >= 14 feet	60%
	B. On-Street Parking Permitted	100%
	C. Striped Bike Lane	0%
	D. Transit Lane	--
	E. Distance from curb to edge of sidewalk >= 8 feet	100%
3	Vehicle Speeds	**100%**
	Speeds on Adjoining Roadway <= 35 MPH	100%
4	Crosswalks	**100%**
	Availability of Crosswalks at Intersections	100%
5	Visual Appeal	**30%**
	Visual Interest and Amenities (presence of greenery, street furniture, water features, public art, inviting facades, parklets, etc.)	30%
6	Safety	**50%**
	Security features (sight clearance, pedestrian countdown/audible signals, pedestrian level lighting, wayfinding/signage)	50%
LOS Score		**C**

LOS Score Key						
LOS	**A**	**B**	**C**	**D**	**E**	**F**
LOS Score	1.0	0.8-0.99	0.6-0.79	0.4-0.59	0.2-0.39	0.0-0.19
PEDESTRIAN LOS:			**C**			

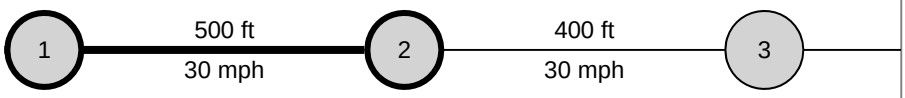
TABLE F-3
BICYCLE LEVEL OF SERVICE SUMMARY TABLE
Alamitos Avenue, between 7th Street and Ocean Boulevard
EXISTING CONDITIONS

LOS Criteria		Criteria Met?
1	Bike Lane	**36%**
	A. Existence of Class II Bike Lane	0%
	B. Existence of Class I and/or III Bike facility	100%
	C. Continuity of Class II Bike lane	0%
	D. Continuity of Class I and/or III Bike facility	80%
	E. Bike Detection (loop detectors or video detection system)	0%
2	Setback	**30%**
	A. Curb Lane Width >= 18 feet	60%
	B. Limited vehicle to bike conflicts due to on-street parking	0%
	C. Limited transit to bike conflicts due to transit lane	--
3	Pavement Condition	**100%**
	Pavement Condition	100%
4	Vehicle Speeds	**100%**
	Speeds on Adjoining Roadway <= 35 MPH	100%
5	Truck Route	**100%**
	Are Trucks Restricted (The segment is not classified as a Truck Route)	100%
6	Visual Appeal	**30%**
	Visual Interest and Amenities (presence of greenery, street furniture, water features, public art, inviting facades, parklets, etc.)	30%
7	Conflicts	**0%**
	Driveway or Cross-Street Frequency (if greater than 10/mile, then 0%)	0%
LOS Score		**D**

LOS Score Key						
LOS	**A**	**B**	**C**	**D**	**E**	**F**
LOS Score	1.0	0.8-0.99	0.6-0.79	0.4-0.59	0.2-0.39	0.0-0.19
BICYCLE LOS:			**D**			

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency				Number of Intersections	8
Analyst		Analysis Date	12/6/2016	Number of Segments	7
Jurisdiction		Time Period		Number of Iterations	15
File Name	1 AM Ex.xus	Analysis Year	2016	System Cycle Length, s	100
Intersections	Alamitos Ave at 7th St	Alamitos Ave at 6th St		Analysis Period	1> 7:00
Project Description					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB
1	30	30	2	1	500	500	20	30	0	0	70	70	0.0	0.0

		Southbound			Northbound		
Segment Output Data		SBL	SBT	SBR	NBL	NBT	NBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	38.08			36.74		
1	Running Time, s	14.02			14.73		
1	Running Speed, mph	24.32			23.15		
1	Through Delay, s/veh	9.51			29.33		
1	Travel Time, s	23.53			44.06		
1	Travel Speed, mph	14.49			7.74		
1	Stop Rate, stops/veh	0.40			0.84		
1	Spatial Stop Rate, stops/mi	4.17			8.91		
1	Through vol/cap Ratio	0.30			0.43		
1	Percent of Base FFS	38.05			21.06		
1	Level of Service	E			F		
1	Auto Traveler Perception Score	2.82			3.73		
Multimodal Results (Segment)							
1	Pedestrian Segment LOS Score / LOS	2.74		B	3.85		D
1	Bicycle Segment LOS Score / LOS	3.37		C	3.47		C
1	Transit Segment LOS Score / LOS	2.21		B	3.25		C

Facility Output Data	**Southbound**		**Northbound**	
Facility Travel Time, s	172.90		163.82	
Facility Travel Speed, mph	13.51		14.26	
Facility Base Free Flow Speed, mph	37.65		37.82	
Facility Percent of Base FFS	35.90		37.71	
Facility Level of Service	E		E	
Facility Auto Traveler Perception Score	2.66		2.68	
Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS	3.32	C	3.15	C
Bicycle Facility LOS Score / LOS	3.41	C	3.34	C
Transit Facility LOS Score / LOS	2.18	B	2.09	B

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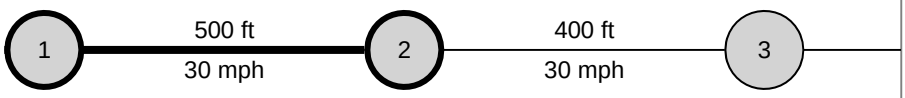
HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency				Number of Intersections	8
Analyst		Analysis Date	12/6/2016	Number of Segments	7
Jurisdiction		Time Period		Number of Iterations	15
File Name	2 PM Ex.xus	Analysis Year	2016	System Cycle Length, s	100
Intersections	Alamitos Ave at 7th St	Alamitos Ave at 6th St		Analysis Period	1> 7:00
Project Description					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB
1	30	30	2	1	500	500	20	30	0	0	70	70	0.0	0.0

		Southbound			Northbound		
Segment Output Data		SBL	SBT	SBR	NBL	NBT	NBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	38.08			36.74		
1	Running Time, s	13.98			15.79		
1	Running Speed, mph	24.38			21.59		
1	Through Delay, s/veh	7.58			22.04		
1	Travel Time, s	21.56			37.83		
1	Travel Speed, mph	15.81			9.01		
1	Stop Rate, stops/veh	0.31			0.65		
1	Spatial Stop Rate, stops/mi	3.28			6.89		
1	Through vol/cap Ratio	0.25			0.56		
1	Percent of Base FFS	41.52			24.52		
1	Level of Service	D			F		
1	Auto Traveler Perception Score	2.66			3.33		
Multimodal Results (Segment)							
1	Pedestrian Segment LOS Score / LOS	2.65		B	4.11		D
1	Bicycle Segment LOS Score / LOS	3.36		C	3.59		D
1	Transit Segment LOS Score / LOS	2.04		B	3.25		C

Facility Output Data	Southbound		Northbound	
Facility Travel Time, s	159.73		180.84	
Facility Travel Speed, mph	14.63		12.92	
Facility Base Free Flow Speed, mph	37.65		37.82	
Facility Percent of Base FFS	38.86		34.16	
Facility Level of Service	E		E	
Facility Auto Traveler Perception Score	2.65		2.72	
Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS	3.23	C	3.25	C
Bicycle Facility LOS Score / LOS	3.38	C	3.43	C
Transit Facility LOS Score / LOS	2.15	B	2.33	C

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APPENDIX D-II

EXISTING PLUS PROJECT TRAFFIC CONDITIONS

Table 1
Multimodal Level of Service Summary Table
Alamitos Avenue, between 7th Street and Ocean Boulevard

CHECKLIST FOR COMPLETE STREETS

The checklist is designed to assist agencies in assesssing the degree to which their streets meet the requirements of the California Complete Streets Act (AB 1358, 2009), specifically, "**Does the street meet the needs of motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and useres of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the street?**"

EXISTING PLUS PROJECT CONDITIONS

Street: **Alamitos Avenue**	Context:
Limits: **7th Street and Ocean Boulevard**	

User Groups	(1) Minimum LOS Acceptable to Agency	(2) Calculated LOS	(3) Percent
1. Motorists	**D**	**F**	**0%**
2. Transit Passengers	**C**	**D**	**67%**
3. Bicyclists	**C**	**C**	**100%**
4. Pedestrians	**C**	**C**	**100%**
5. Children			**100%**
a. Are adequately marked/controlled school crossings provided as needed?			**100%**
b. Does the street meet the agency's design and lighting policies?			**100%**
6. Persons with Disabilities **7. Seniors**			**83%**
a. Are there accessible routes on both sides of the street?			**100%**
b. Are the street crossings accessible?			**100%**
c. Are the traffic signals accessible?			**100%**
d. Are there sufficient on-street parking spaces?			**100%**
e. Are there sufficient accessible passenger loading zones?			**0%**
f. Are bus stops accessible?			**100%**
8. Movers of Commercial Goods			**--**
a. Are streets designed to accommodate trucks?			**--**
b. Are there adequate truck routes for through trucks here or nearby?			**--**
c. Are there adequate on-street loading zones/off-street loading docks?			**--**

Overall Assessment: According to the data and weights entered above, Alamitos Avenue meets 64% of the above criteria.

TABLE F-1
PUBLIC TRANSIT LEVEL OF SERVICE SUMMARY TABLE
Alamitos Avenue, between 7th Street and Ocean Boulevard
EXISTING PLUS PROJECT CONDITIONS

LOS Category	(1) Mixed Use Centers and Commercial Corridors	(2) Remainder of Service Area	(3) LOS Category Met? Yes/No
Hours of Weekday Service	≥ 18 hours	≥ 16 hours	**YES**
Weekday Frequency of Service	≤ 15 minutes	≤ 20 minutes	**NO**
Travel Time Factor	≤ 2.0 X	≤ 2.0 X	**YES**
Peak Load Factor	≤ 1.2	≤ 1.2	**N/A**

LOS Ratings	Number of Service Level Standards Met					LOS Results
	All 4	3 of 4	2 of 4	1 of 4	None	
Areas within 1,320 ft of transit routes	A	B	D	E	F	**D**
Areas within 2,640 ft of transit routes	B	C	D	E	F	**D**

Options		Option 1 or 2	PUBLIC TRANSIT LOS
Areas within 1,320 ft of transit routes	**1**	**1**	**D**
Areas within 2,640 ft of transit routes	**2**		

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TABLE F-2
PEDESTRIAN LEVEL OF SERVICE SUMMARY TABLE
Alamitos Avenue, between 7th Street and Ocean Boulevard
EXISTING PLUS PROJECT CONDITIONS

LOS Criteria		Criteria Met?
1	Walkability	**100%**
	A. Existence of Sidewalk	100%
	B. Sidewalk Continuity	100%
2	Setbacks	**100%**
	A. Curb Lane Width >= 14 feet	100%
	B. On-Street Parking Permitted	100%
	C. Striped Bike Lane	100%
	D. Transit Lane	--
	E. Distance from curb to edge of sidewalk >= 8 feet	100%
3	Vehicle Speeds	**100%**
	Speeds on Adjoining Roadway <= 35 MPH	100%
4	Crosswalks	**100%**
	Availability of Crosswalks at Intersections	100%
5	Visual Appeal	**30%**
	Visual Interest and Amenities (presence of greenery, street furniture, water features, public art, inviting facades, parklets, etc.)	30%
6	Safety	**50%**
	Security features (sight clearance, pedestrian countdown/audible signals, pedestrian level lighting, wayfinding/signage)	50%
LOS Score		**C**

LOS Score Key						
LOS	**A**	**B**	**C**	**D**	**E**	**F**
LOS Score	1.0	0.8-0.99	0.6-0.79	0.4-0.59	0.2-0.39	0.0-0.19
PEDESTRIAN LOS:			**C**			

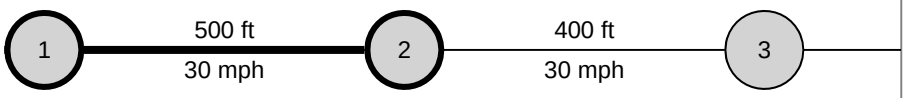
TABLE F-3
BICYCLE LEVEL OF SERVICE SUMMARY TABLE
Alamitos Avenue, between 7th Street and Ocean Boulevard
EXISTING PLUS PROJECT CONDITIONS

LOS Criteria		Criteria Met?
1	Bike Lane	**100%**
	A. Existence of Class II Bike Lane	100%
	B. Existence of Class I and/or III Bike facility	100%
	C. Continuity of Class II Bike lane	100%
	D. Continuity of Class I and/or III Bike facility	100%
	E. Bike Detection (loop detectors or video detection system)	100%
2	Setback	**50%**
	A. Curb Lane Width >= 18 feet	100%
	B. Limited vehicle to bike conflicts due to on-street parking	0%
	C. Limited transit to bike conflicts due to transit lane	--
3	Pavement Condition	**100%**
	Pavement Condition	100%
4	Vehicle Speeds	**100%**
	Speeds on Adjoining Roadway <= 35 MPH	100%
5	Truck Route	**100%**
	Are Trucks Restricted (The segment is not classified as a Truck Route)	100%
6	Visual Appeal	**30%**
	Visual Interest and Amenities (presence of greenery, street furniture, water features, public art, inviting facades, parklets, etc.)	30%
7	Conflicts	**0%**
	Driveway or Cross-Street Frequency (if greater than 10/mile, then 0%)	0%
LOS Score		**C**

LOS Score Key						
LOS	**A**	**B**	**C**	**D**	**E**	**F**
LOS Score	1.0	0.8-0.99	0.6-0.79	0.4-0.59	0.2-0.39	0.0-0.19
BICYCLE LOS:			**C**			

HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency				Number of Intersections	8
Analyst		Analysis Date	12/6/2016	Number of Segments	7
Jurisdiction		Time Period		Number of Iterations	15
File Name	3 AM Ex+P.xus	Analysis Year	2016	System Cycle Length, s	100
Intersections	Alamitos Ave at 7th St	Alamitos Ave at 6th St		Analysis Period	1> 7:00
Project Description					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB
1	30	30	2	1	500	500	20	30	0	0	70	70	0.0	0.0

		Southbound			Northbound		
Segment Output Data		SBL	SBT	SBR	NBL	NBT	NBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	38.08			36.74		
1	Running Time, s	14.02			14.73		
1	Running Speed, mph	24.32			23.15		
1	Through Delay, s/veh	9.51			29.33		
1	Travel Time, s	23.53			44.06		
1	Travel Speed, mph	14.49			7.74		
1	Stop Rate, stops/veh	0.40			0.84		
1	Spatial Stop Rate, stops/mi	4.17			8.91		
1	Through vol/cap Ratio	0.30			0.43		
1	Percent of Base FFS	38.05			21.06		
1	Level of Service	E			F		
1	Auto Traveler Perception Score	2.82			3.73		
Multimodal Results (Segment)							
1	Pedestrian Segment LOS Score / LOS	2.74		B	3.85		D
1	Bicycle Segment LOS Score / LOS	3.37		C	3.47		C
1	Transit Segment LOS Score / LOS	2.21		B	3.25		C

Facility Output Data	**Southbound**		**Northbound**	
Facility Travel Time, s	172.90		163.82	
Facility Travel Speed, mph	13.51		14.26	
Facility Base Free Flow Speed, mph	37.65		37.82	
Facility Percent of Base FFS	35.90		37.71	
Facility Level of Service	E		E	
Facility Auto Traveler Perception Score	2.66		2.68	
Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS	3.32	C	3.15	C
Bicycle Facility LOS Score / LOS	3.41	C	3.34	C
Transit Facility LOS Score / LOS	2.18	B	2.09	B

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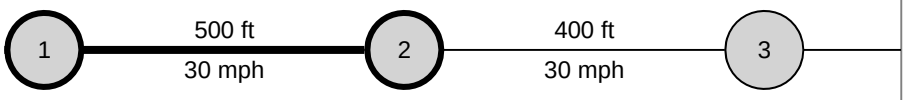
HCS 2010 Urban Street Segment Report

General Information				Streets Information	
Agency				Number of Intersections	8
Analyst		Analysis Date	12/6/2016	Number of Segments	7
Jurisdiction		Time Period		Number of Iterations	15
File Name	4 PM Ex+P.xus	Analysis Year	2016	System Cycle Length, s	100
Intersections	Alamitos Ave at 7th St	Alamitos Ave at 6th St		Analysis Period	1> 7:00
Project Description					



Basic Segment Information

Segment	Speed Limit		Through Lanes		Segment Length		Intersection Wid		Length of RM		Percent Curb		Other Delay	
	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB
1	30	30	2	1	500	500	20	30	0	0	70	70	0.0	0.0

		Southbound			Northbound		
Segment Output Data		SBL	SBT	SBR	NBL	NBT	NBR
Segment	Movement	5	2	12	1	6	16
1	Bay/Lane Spillback Time, h		never			never	
1	Shared Lane Spillback Time, h						
1	Base Free-Flow Speed, mph	38.08			36.74		
1	Running Time, s	13.98			15.79		
1	Running Speed, mph	24.38			21.59		
1	Through Delay, s/veh	7.58			22.04		
1	Travel Time, s	21.56			37.83		
1	Travel Speed, mph	15.81			9.01		
1	Stop Rate, stops/veh	0.31			0.65		
1	Spatial Stop Rate, stops/mi	3.28			6.89		
1	Through vol/cap Ratio	0.25			0.56		
1	Percent of Base FFS	41.52			24.52		
1	Level of Service	D			F		
1	Auto Traveler Perception Score	2.66			3.33		
Multimodal Results (Segment)							
1	Pedestrian Segment LOS Score / LOS	2.65		B	4.11		D
1	Bicycle Segment LOS Score / LOS	3.36		C	3.59		D
1	Transit Segment LOS Score / LOS	2.04		B	3.25		C

Facility Output Data	**Southbound**		**Northbound**	
Facility Travel Time, s	159.73		180.84	
Facility Travel Speed, mph	14.63		12.92	
Facility Base Free Flow Speed, mph	37.65		37.82	
Facility Percent of Base FFS	38.86		34.16	
Facility Level of Service	E		E	
Facility Auto Traveler Perception Score	2.65		2.72	
Multimodal Results (Facility)				
Pedestrian Facility LOS Score / LOS	3.23	C	3.25	C
Bicycle Facility LOS Score / LOS	3.38	C	3.43	C
Transit Facility LOS Score / LOS	2.15	B	2.33	C

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