Appendix L1

Transportation Impact Study

Redondo Waterfront Project

Transportation Impact Study

November 2015

Prepared by

FEHR PEERS

600 Wilshire Blvd, Suite 1050
Los Angeles, CA 90017
(213) 261-3050

Michael Kennedy
M.Kennedy@fehrandpeers.com
(213) 261-3071

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1. INTRODUCTION

This report documents the results of the transportation impact study prepared by Fehr & Peers to evaluate the potential transportation impacts of the proposed Redondo Beach Waterfront Project ("Project"), in the City of Redondo Beach, California. The report documents the methodologies and criteria used to evaluate the Project, summarizes the analysis and impacts of existing and future cumulative conditions.

1.1 PROJECT DESCRIPTION

The Project, located in the City of Redondo Beach's Coastal Zone south of Portofino Way, North of Torrance Boulevard, and west of Harbor Drive/Catalina Avenue would revitalize approximately 35.6 acres of land and water by redeveloping and expanding local and visitor serving commercial uses, enhancing public access and recreational opportunities and facilities, and improving the aging support infrastructure and parking facilities.

The Project also includes improvements in site connectivity, public access and public views to and along the waterfront. The Project is specifically designed as a new waterfront village to reconnect the Pier and Harbor area with resident and visitor serving uses.

The Project as proposed consists of the demolition of approximately 207,402 square feet of existing structures, demolition of the existing Pier Structure, and construction/renovation of up to approximately 523,939 square feet (511,460 square feet of new construction and 12,479 square feet of existing development), totally 304,058 square feet net new development to include retail, restaurant, creative office, specialty cinema, a market hall, and a boutique hotel. The Project also would include public recreation enhancements such as a new boat launch ramp, modifications to Seaside Lagoon, new parking facilities, pedestrian and bicycle pathways, replacement of the timber portion of the Horseshoe Pier, and demolition and possible reconstruction of the Sportfishing Pier. Site connectivity would be improved by the establishment of a new pedestrian bridge across the Redondo Beach Marina Basin 3 entrance and the reconnection of Pacific Avenue.

Figure 1 illustrates the proposed Project site plan (including the pacific avenue reconnection). Figure 2 illustrates the proposed pedestrian circulation plan, and Figure 3 illustrates the proposed bicycle circulation plan.

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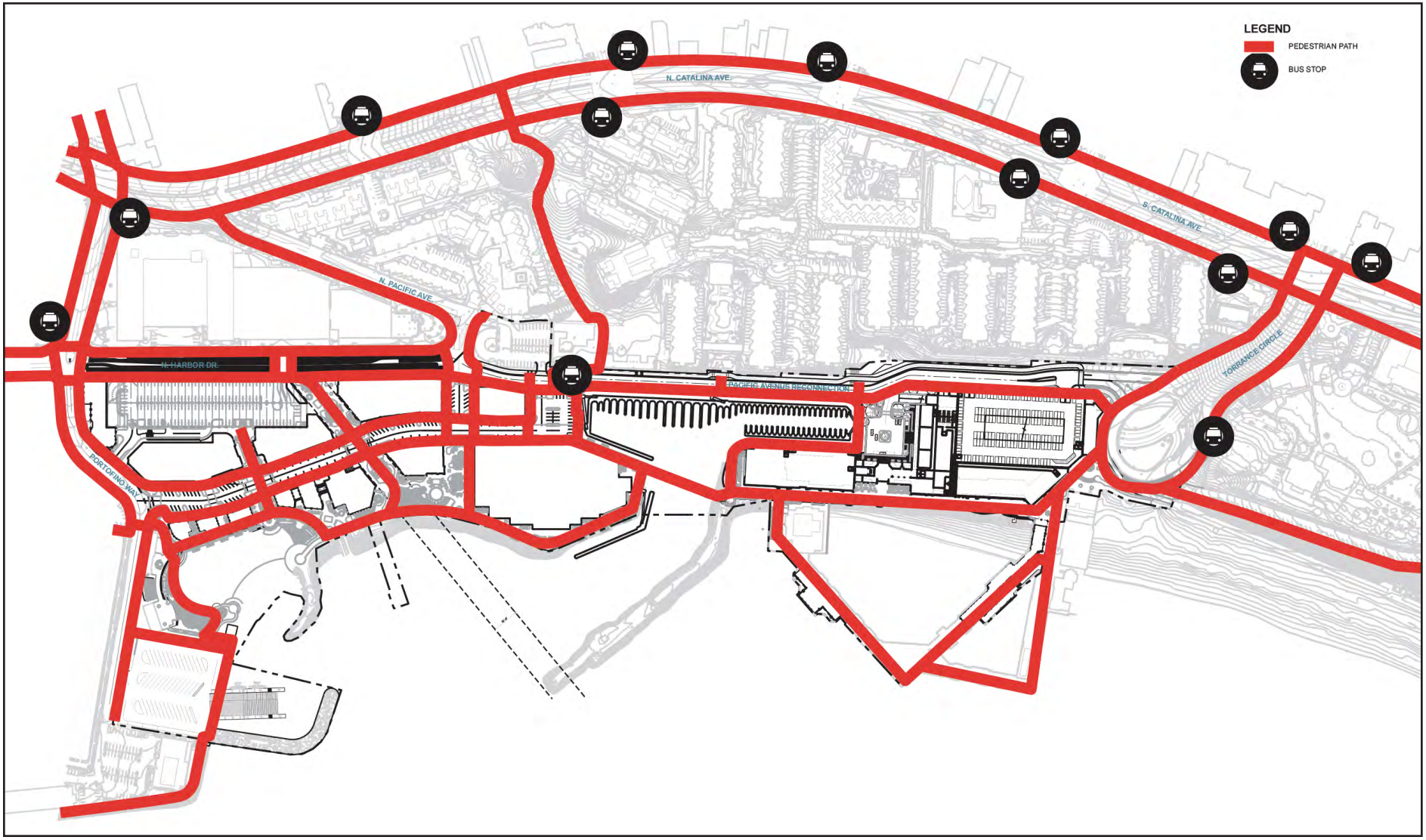
Source: Callison and PSOMAS, 2015

Figure1

Site Plan



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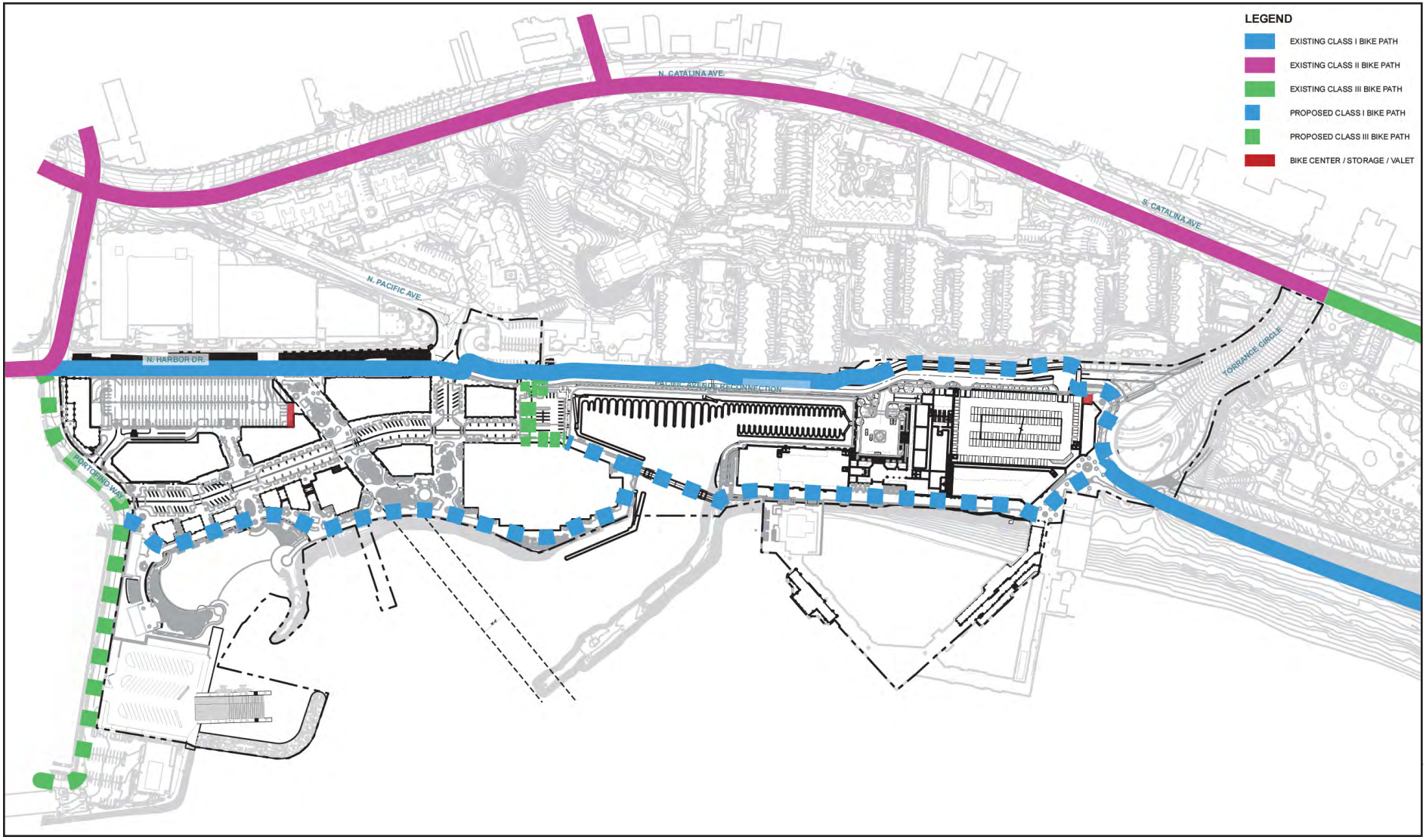
Source: Callison, 2015

Figure 2

Pedestrian Conceptual Plan



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Source: Callison, 2015

Figure 3

Bicycle Conceptual Plan

1.2 STUDY SCOPE

This section details the analysis scenarios, methodologies, and impact criteria used to assess the Project's potential to trigger significant transportation impacts. This scope was prepared in accordance with the requirements of the City of Redondo Beach.

Study Area

In consultation with City of Redondo Beach staff, the study area was initially selected to include the intersections most likely to be affected by traffic generated by the Project, specifically major intersections located within roughly a 3,000-foot radius of the Project site. However, with follow up consultation, it was determined that additional scope elements, including intersections beyond a 3,000-foot radius should be analyzed so that the study area includes the full extent of the area where potential Project-related significant transportation impacts could occur. The Cities of Hermosa Beach and Torrance were consulted on analysis methodologies and impact criteria, as detailed below. Caltrans was consulted on locations and methodologies for analyzing state facilities (including Pacific Coast Highway Intersections, and freeway ramp and mainline segments).

A total of 41 intersections where identified for analysis in the scenarios detailed below. These study intersections are shown in Figure 4. Of the 41 study intersections, 27 intersections operate under signal control and the remaining 14 intersections are stop-controlled, as shown in Table 1. AM and PM peak hour turning movement volumes were analyzed at these study intersections.

TABLE 1 – STUDY AREA INTERSECTIONS

ID	North-South Street Name	East-West Street Name	Intersection Control
1	Hermosa Ave	2nd St	AWSC
2	Monterey Blvd	2nd St	AWSC
3	Valley Dr	2nd St	AWSC
4	Harbor Dr/Hermosa Ave	Herondo St	Signal
5	Monterey Blvd	Herondo St	TWSC
6	Valley Dr/Francisca Ave	Herondo St	AWSC
7	Pacific Coast Hwy/Catalina Ave	Herondo St/Anita St	Signal
8	Prospect Ave	Anita St	Signal
9	Harbor Dr	Yacht Club Way	Signal
10	Pacific Coast Hwy	Catalina Ave	Signal
11	Harbor Dr	Marina Way	Signal

TABLE 1 – STUDY AREA INTERSECTIONS

ID	North-South Street Name	East-West Street Name	Intersection Control
12	Catalina Ave	Gertruda Ave	Signal
13	Catalina Ave	Francisca Ave	TWSC
14	Catalina Ave	Broadway	TWSC
15	Harbor Dr	Portofino Way/Beryl St	Signal
16	Catalina Ave	Beryl St	Signal
17	Broadway	Beryl St	TWSC
18	Francisca Ave	Beryl St	TWSC
19	Pacific Coast Hwy	Beryl St	Signal
20	Harbor Dr	Pacific Ave	AWSC
21	Catalina Ave	Carnelian St	Signal
22	Catalina Ave	Diamond St	Signal
23	Catalina Ave	Emerald St	Signal
24	Pacific Coast Hwy	Garnet St	Signal
25	Catalina Ave	Torrance Blvd	Signal
26	Pacific Coast Hwy	Torrance Blvd	Signal
27	Helberta Ave/Camino Real	Torrance Blvd	Signal
28	Prospect Ave	Torrance Blvd	Signal
29	Catalina Ave	Pearl St	Signal
30	Camino Real	Pearl St	AWSC
31	Pacific Coast Hwy	Sapphire St/Francisca Ave	Signal
32	Esplanade	Knob Hill Ave	AWSC
33	Catalina Ave	Knob Hill Ave	AWSC
34	Pacific Coast Hwy	Knob Hill Ave	Signal
35	Harbor Dr	Pacific Ave	AWSC
36	Pacific Coast Hwy	Palos Verdes Blvd	Signal
37	Pacific Coast Hwy	2nd St	Signal
38	Pacific Coast Hwy	10th/Aviation	Signal
39	Pacific Coast Hwy	Pier/14th St	Signal
40	Pacific Coast Hwy	16th St	Signal
41	Pacific Coast Hwy	Prospect Ave	Signal

TWSC = 2-way stop control
AWSC = All-way stop control

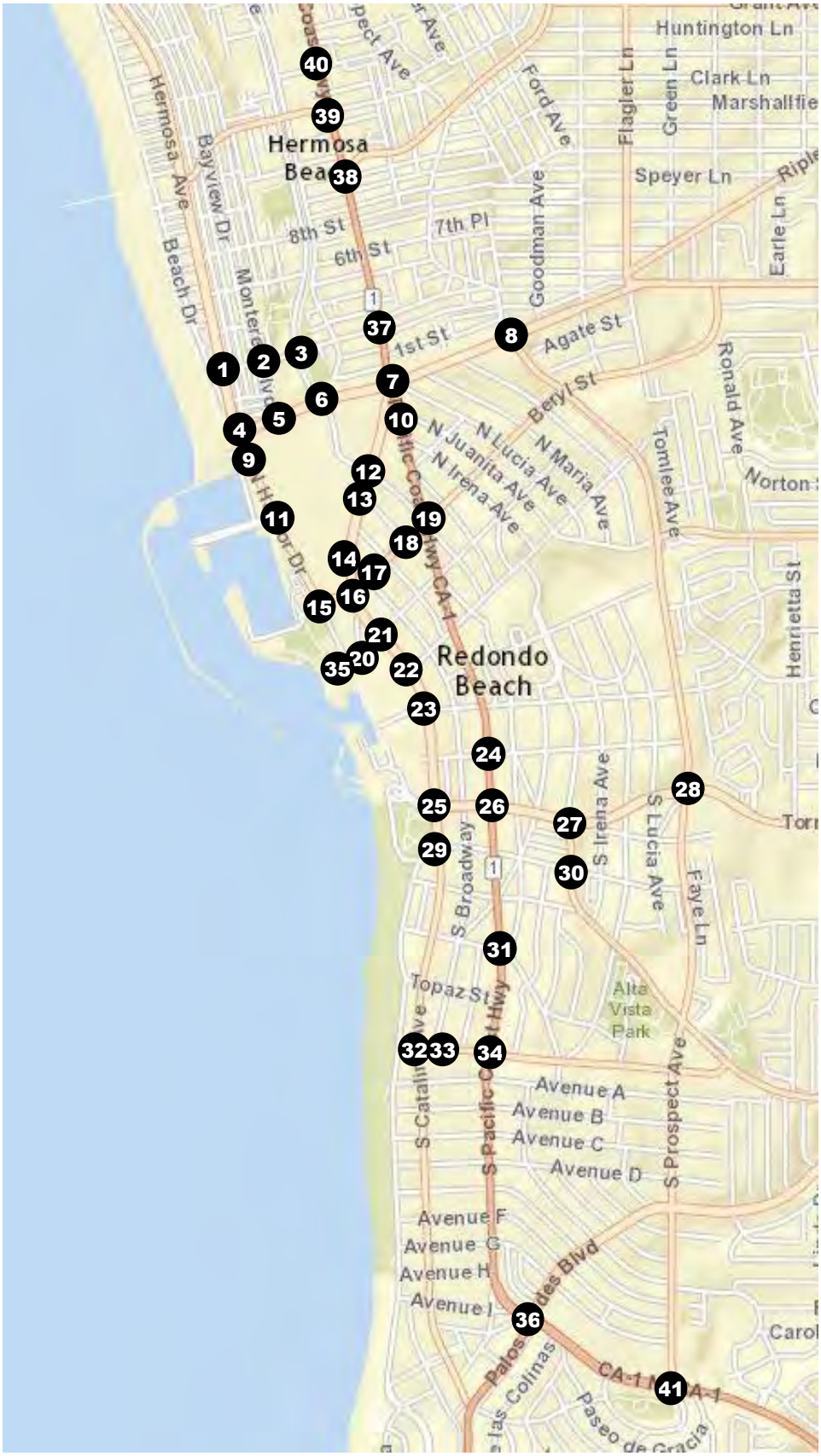

Figure 4

Study Intersections

1.3 ANALYSIS SCENARIOS

The scenarios described below were analyzed for this study.

Baseline Conditions

- Existing (Year 2013) Conditions – The analysis of existing traffic conditions using existing counts and geometric lane configurations, provides a basis for the remainder of the study's analysis of existing traffic conditions. The existing conditions analysis includes an assessment of streets, traffic volumes, and operating conditions. Traffic counts for the majority of intersections were collected in Summer 2013 or Spring 2014, and the peak count for each location was selected for analysis.

- Cumulative without Project Conditions (Year 2019) – Future traffic conditions are provided in this scenario without the proposed Project. The annual growth rate applied to the existing traffic volumes were obtained from the Southern California Association of Government's (SCAG) population growth forecast for the City of Redondo Beach, an average annual growth rate of 0.36%.[1] Population growth rates, rather than traffic growth rates were used to estimate future conditions through the year 2019, because SCAG forecasts a slight decline in average traffic volumes Citywide.

  Fehr & Peers ran the SCAG travel demand model and compared the model-assigned traffic on roadways in the City of Redondo Beach citywide between the base year (2008) and the forecast year (2035). The net change in volumes, was a decline of 2%, due to the transportation infrastructure improvements, land use changes, and policy strategies associated with the RTP and the Sustainable Community Strategy (SCS).[2] Therefore, the use of the population growth rate is considered a conservative worst-case analysis. Detail about what the SCAG model is and how it was applied in this analysis is detailed below.

  While CEQA allows public agencies to rely exclusively upon growth projections for cumulative analyses, the City also incorporated several specific development projects, which results in a highly conservative analysis. In addition to the SCAG population growth rate, traffic estimated to be generated by four development projects in the study area (i.e., Shade Hotel Redondo Beach, Legado Redondo, and Kensington Assisted Living Facility, and the Seabreeze project were also incorporated into the traffic volumes to develop Cumulative Conditions (2019) Without Project. These projects are identified in Chapter 3.

Project Conditions

- Existing plus Project Conditions – This scenario provides basis for the analysis of the effects of the Project's trips and network changes on existing operating conditions. Project trips were assigned to the roadway network based on the trip generation and trip distribution analyses described in

[1] SCAG Integrated Growth Forecast available online at: http://rtpscs.scag.ca.gov/Documents/2012/final/SR/2012fRTP_GrowthForecast.pdf
[2] SCAG 2012 RTP is available online at: http://rtpscs.scag.ca.gov/Pages/2012-2035-RTP-SCS.aspx

this report. Project trips were added to Existing (2013) Conditions (without Project) to create this scenario. This scenario includes the Pacific Avenue reconnection. Detailed trip distribution percentages at each study intersection and turning movement are illustrated for the Project in Appendix X-2.

- Cumulative plus Project Conditions (Year 2019) – This scenario provides the basis for the analysis of future conditions with traffic generated by the Project added to the Cumulative Conditions (2019) Without Project scenario. Project trips were assigned to the roadway network based on the trip generation and trip distribution analyses described in this report. Project trips were added to the Cumulative Conditions (2019) Without Project scenario detailed above to create this scenario. This scenario includes the Pacific Avenue reconnection. Detailed trip distribution percentages at each study intersection and turning movement are illustrated for the Project in Appendix X-2.

Project Alternatives

- Alternative 5 - No Pacific Avenue Reconnection – This alternative includes the full buildout of the Project, but without the Pacific Avenue Reconnection. This alternative maintains a similar trip distribution pattern as the existing site (as opposed to the Project which is expected to shift Project trips and background trips due to the Pacific Avenue reconnection). Detailed trip distribution percentages at each study intersection and turning movement are illustrated for Alternative 5 in Appendix X-2.

- Alternative 7 – Reduced Density and Current Growth Projections – The alternative includes a reduced density Project with 50% less net new square feet of uses. The specific land use scenario that was analyzed for the Reduced Density Alternative is detailed in Chapter 6. This Alternative uses the Project trip distribution pattern as illustrated in Appendix X-2.

- Alternative 8 – Boat Launch Ramp Alternative – This alternative includes a focused quantitative evaluation of shifting the existing boat launch ramp to one of three different locations as well as the evaluation of doubling the parking capacity (and assuming a doubling of the traffic generating potential) of the boat launch ramp.

Four additional alternatives were analyzed qualitatively because they are not expected to be substantially different than the Project in terms of number of trips generated or trip distribution, or will generate minimal Project trips (e.g., the number of trips generated would be substantially less than the proposed Project):

- Alternative 1 – No Project
- Alternative 2 – No Project Necessary Infrastructure Improvements
- Alternative 3 – Landside Development Only Alternative
- Alternative 4 – No Property Exchange with the State
- Alternative 6 – Alternative Construction Phasing

1.4 ANALYSIS METHODOLOGIES & IMPACT CRITERIA

The following section documents the transportation impact analysis methodologies and thresholds of significance used to evaluate the Project's potential for significant transportation impacts.

Trip Generation

Standard trip generation methodologies typically use the Trip Generation Manual, 9th Edition (Institute of Transportation Engineers [ITE], 2012) manual to establish trip rates for each individual land use in isolation. However, most of the empirical data collected to develop ITE trip generation rates were conducted in isolated, suburban settings, and do not accurately predict trip generation for mixed use and urban infill sites with transit proximity and a density, scale, and design that can facilitate walking and biking. Research indicates that the ITE manuals overestimate peak traffic generation for mixed-use development (MXD) by an average of 35%[3]. Appendix X-1 includes *Getting Trip Generation Right - Eliminating the Bias Against Mixed Use Development* (Walters, Bochner, Ewiing 2013) a summary of the MXD model development, calibration and validation process published by the American Planning Association for their Planning Advisory Service[4]. It includes references to several additional research papers documenting the MXD model development and process.

Reflecting the mixed use nature of the Project, Fehr & Peers used the mixed-use trip generation model (MXD+). MXD+ represents a substantial improvement over conventional traffic estimation methods. It improves accuracy, virtually eliminates overestimation and is supported by substantial evidence. The established MXD, method developed by Fehr & Peers for the US EPA and continuously refined through consulting for other state, regional and local clients is based on:

- Pooled household survey data for 239 MXDs in six diverse US regions
- Equations on internal trip capture and mode shares that were developed using regression statistical analysis of MXD variables that affect trip generation, such as population and employment density, number of bus stops, etc. to determine a statistically significant model. Additional detail on the variables included in the MXD+ model are summarizes in Getting Trip Generation Right.

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[3] Ewing, Reid, Michael Greenwald, Ming Zhang, Jerry Walters, Robert Cervero, Lawrence Frank, and John Thomas. 2011. "Traffic Generated by Mixed-Use Developments — Six-Region Study Using Consistent Built Environmental Measures." ASCE Journal of Urban Planning and Development 137(3): 248–61. http://ascelibrary.org/action/showAbstract?page=248&volume=137&issue=3&journalCode=jupddm&isAuthorized=no

[4] http://asap.fehrandpeers.com/wp-content/uploads/2012/05/APA_PAS_May2013_GettingTripGenRight.pdf

- Validation at 27 existing MXD sites across the US, including mixed use developments in California, Georgia, Florida, Texas, and Georgia. The mixed use sites ranged from transit oriented developments, to suburban mixed use retail centers.
- Peer reviews

MXD+ 2.0 accounts for 97% of the statistical variation in trip generation among the 27 validation sites, compared to 65% for the ITE Handbook. It also all but eliminates the Handbook's systematic overestimate of traffic, found to be 35% for the validation sites. MXD+ 2.0 reduces the overestimate to 4%., meaning that the MXD model still slightly over estimates trip generation relative to the actual counted trip generation of the validation sites.

The model starts with ITE trip generation rates for each individual land use, but through the statistical processes of the model, calibrates the ITE rates to reflect the site specific and area contexts of the Project, including its mixture of uses, site and area demographics, accessibility to other land uses, such as adjacent residential, availability of transit service, pedestrian connectivity, and other factors. The model calibrates ITE rates based on these factors to provide a much more accurate estimate of external project trip generation than the application of ITE trip rates alone. Trip generation rates under existing conditions and the proposed project are included in Table 7 below. The difference between the net new trip generation was added to baseline conditions (and Cumulative without Project conditions) to create the "plus Project" scenarios described above.

Trip Distribution

A travel demand model is a tool that uses population, employment and other demographic data to mathematically forecast transportation demand (usually in the form of traffic volumes on roadway links). Travel models typically have three or four steps: trip generation, trip distribution, mode-choice (if the model is a four step model), and trip assignment. Using various mathematical equations the model will take input data from a series of transportation analysis zones (TAZs), that divide geographies (such as the City of Redondo Beach) into sub areas, calculate trip generation for the TAZ based on different trip rates associated with different land uses, and will distribute and assign those trips to different TAZs based on a series of equations that calculate the relative attractiveness of a particular zone (for example a zone with a lot of employment), and the shortest travel path to get to that TAZ. More complex models will include the mode-choice step, which uses probabilities to estimate how many trips could be vehicle trips versus transit trips. Ultimately, the primary use of the model is to estimate aggregate demand for travel on the street network.

Two travel demand model sources were reviewed in the preparation of a trip distribution pattern for the Project:

- The Redondo Beach Traffic Model (RBTM) developed for the Redondo Beach Circulation Element by Austin Faust Associates, was based on the current (at the time) Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP) Regional Transportation Plan (RTP) Model, and included cumulative projects from the preceding eight years, as well as future projects that were reasonably foreseeable. AFA also modified SCAG's model within the City to reflect the local network of streets and create a finer zone system to allow for more detailed forecasts for the City's streets. The RBTM can be used as a tool for forecasting trip distribution patterns[5].

- The Southern California Association of Governments (SCAG) 2012 Regional Transportation Plan (RTP) Travel Demand Model the current regionally valid travel demand model at the issuance of the Project's Notice of Preparation (NOP). The SCAG model is a trip-based four-step model used to forecast travel demand for the RTP, and can be used for the analysis of localized projects. The model development and validation process is described by SCAG in SCAG Regional Travel Demand Model and 2008 Model Validation (SCAG 2012)[6]. The model uses TAZ data as described above to estimate future transportation demand.

Both travel demand models were used to run a select zone analysis for the TAZ that contains the Project site. A select zone analysis tracks trips generated or attracted to the Project TAZ through the street network, and quantifies the percentage of Project TAZ trips assigned to particular roadways. The SCAG model assignment accounts for congested travel time on roadways and iteratively assigns trips until equilibrium is reached (e.g. no trips can be assigned to a quicker route than the route they are assigned).

Additionally, the *Market Study of the Proposed Waterfront Revitalization Study* (AECOM, 2015) was reviewed to determine the market area for the Project. The study indicated that the primary market, defined as residents within a 10-minute drive time, is the largest source of sales for a retail center. The secondary market area, which is a 10-30 minute drive time, captures the majority of spending anticipated to occur from those residents outside the primary market area. The trip distribution pattern for the Project reflects this geographic concentration of Project trips.

Based on the evaluation of the two select zone assignment analyses, as well as the Market Study, Fehr & Peers developed a trip distribution pattern for the Project. Select Zone analysis for Alternative 5 (No Pacific Avenue Reconnection) was run using the RBTM to inform how Project distribution would shift relative to the Project scenario without the addition of the Pacific Avenue Reconnection. Appendix X-1 provides the trip distribution percentages of the Project by turning movement.

[5] City of Redondo Beach Traffic Model: Model Description and Validation (Austin-Foust Associates, 2008).
[6] http://www.scag.ca.gov/Documents/ValidationSummaryReport_SCAG2008Val_2012_06_05.pdf

Signalized Intersection Impact Analysis

Analysis Methodology

Consistent with City requirements, signalized intersections were analyzed using the Intersection Capacity Utilization (ICU) methodology. The ICU methodology is used to determine the intersection V/C ratio and corresponding level of service (LOS) for the turning movements and intersection characteristics at the signalized intersections. The ICU value is calculated by summing the V/C ratio sum of the critical movements, plus a factor for yellow signal time. AM and PM peak hour ICU ratios and level of service (LOS) were calculated using the Fehr & Peers' ICU spreadsheet tool. Lane capacity assumptions do not exceed 1,600 vehicles per lane per hour. This methodology addresses impact to all motor vehicles utilizing the Redondo Beach roadways, including transit vehicles.

Thresholds of Significance

The following thresholds of significance for the incremental increase in ICU ratio were used to assess significant transportation impacts at the signalized study intersections. The significance of the Project's incremental increase in the ICU ratio (i.e. the right column in Table 25) is dependent upon the underlying LOS value (left column) for that specific peak hour based on the following thresholds:

Intersection LOS Under without Project Conditions	Change in Volume to Capacity (Future w/Project less Future w/o Project)
A	----
B	----
C	0.040
D	0.020
E	0.010
F	0.010

Unsignalized Intersection Impact Analysis

Analysis Methodology

Unsignalized intersections were analyzed using the *Highway Capacity Manual* (Transportation Research Board, 2010) methodologies for unsignalized intersections. The Synchro software was used to calculate peak hour intersection delay and LOS at unsignalized intersections.

Criteria for Determining Significance

The City of Redondo Beach does not have adopted impact criteria for unsignalized intersections. The following factors are taken into account to determine whether or not the Project would have a significant impact at an unsignalized intersection:

- Intersection is projected to decline to LOS E or F from LOS D or better with the addition of traffic volumes associated with the Project; and
- The intersection meets signal warrants either caused by Project volumes, or Project volumes are added at an intersection that meets signal warrants in the baseline scenario(s).

Signal warrants are volume based thresholds to determine whether a signal would be recommended, as determined in the Manual on Uniform Traffic Control Devices (Federal Highway Administration). The peak hour signal warrant test was used for the analysis. The volume threshold to determine whether a signal warrant is met is based on a curves for the major and minor street volumes, as well as the number of lanes. The signal warrants are available online[7].

City of Hermosa Beach Traffic Analysis

The City of Hermosa Beach is currently updating the City's General Plan. As part of, or subsequent to the adoption of the General Plan update, the City will be revising their CEQA impact thresholds for determining significant traffic impacts. In consultation with Hermosa Beach staff, the City agreed with Redondo Beach's approach of utilizing Redondo Beach impact criteria for determining significant traffic impacts for both signalized and unsignalized intersections with shared jurisdiction or within the City Hermosa Beach[8].

City of Torrance Traffic Analysis

Analysis Methodology

The City of Torrance utilizes both the ICU and HCM methodology for signalized intersections. Intersection 36 (Pacific Coast Highway & Palos Verdes Boulevard) and Intersection 41 (Prospect Avenue & Pacific Coast Highway are shared jurisdiction intersections. Therefore both ICU and HCM analysis are included for those locations.

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[7] http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm

[8] Phone communication on October 12, 2015 with Ken Robertson and Kim Chafin City of Hermosa Beach, Scott Ma, Hartzog-Crabill.

Criteria for Determining Significance

The City of Torrance uses the following thresholds of significance to assess project impacts[9]:

- Based on the ICU analysis, a significant traffic impact would occur when the Project causes a change from LOS D or better to LOS E or F. If the Project increases traffic at the intersection by 2% of capacity (ICU increase ≥ 0.020), causing or worsening LOS E or F (ICU > 0.901), the impact would be considered significant.
- Based on the HCM analysis, a significant traffic impact would occur when the Project causes a change from LOS D or better to LOS E or F, or the Project causes an increase in delay of 2% or more at an intersection operating LOS E or F.

Caltrans Traffic Analysis

Analysis Methodology

The following analysis methodologies are used to analyze impacts on Pacific Coast Highway, Freeway off-ramps, and freeway segments based on input from Caltrans staff[10]:

- HCM signalized intersection analysis for signalized intersections on Pacific Coast Highway
- HCM queuing analysis for freeway off-ramps
- HCM mainline segment analysis for freeway segments

Appendix X-6 details the analysis locations and results of this analysis.

Congestion Management Program (CMP) Analysis

Analysis Methodology

Under Government Code 65089(b)(4), the legislature set up provisions for analysis of transportation impacts from land use decisions to be performed in conjunction with CEQA. Pursuant to this statute, LA County adopted the 2010 Congestion Management Program[11]. This document provides methodology and criteria to "identify site-specific impacts and mitigation for the regional highway, freeway, and transit systems…"

The Congestion Management Program (Los Angeles Metro, 2010) for Los Angeles County requires that a screening analysis be conducted to determine if CMP analyses are needed at adjacent CMP arterial (50

[9] Traffic Impact Analysis Report Torrance Transit Center, (LLG, 2013) http://www.torranceca.gov/PDF/Attachment_5-Traffic_Impact_Analysis.pdf
[10] In-person communication on October 13, 2015 with Diana Watson, Miya Edmonson and Moe Bhuyian of Caltrans
[11] LA County 2010 Congestion Management Program available online at: http://media.metro.net/docs/cmp_final_2010.pdf

additional peak hour trips) and freeway monitoring locations (150 additional peak hour trips) based on the number of project trips added to those locations.

Thresholds of Significance

For the purposes of a CMP Traffic Impact Analysis, a project impact is considered to be significant if the proposed project increases traffic demand on a CMP facility by 2% of capacity (V/C > 0.02), causing or worsening LOS F (V/C > 1.00).

Transit Impact Analysis

Analysis Methodology

The CMP also requires that project-related transit trips be estimated and their potential to impact current and planned transit services be evaluated.

Analysis Methodology

Whether project-related transit trips would exceed the available capacity of transit service that serves the project site.

Pedestrian & Bicycle Impact Analysis

Thresholds of Significance

The project's potential to impact pedestrian and bicycle facilities and conditions is evaluated based on the following criteria:

- Does the project substantially disrupt any existing pedestrian or bicycle facilities?
- Does the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Senate Bill 743 Analysis

The State Office of Planning and Research (OPR) is currently developing revisions to the CEQA Guidelines under Senate Bill (SB) 743 for projects located in transit priority areas. The revised CEQA Guidelines will establish new criteria for determining the significance of transportation impacts and define alternative metrics to replace level of service (LOS). The legislation does not preclude the application of local general plan policies, zoning codes, conditions of approval, or any other planning requirements. SB 743 replaces LOS with vehicle miles travelled (VMT) related metric(s) and provides guidance on potential significance thresholds related to development projects, land use plans, and transportation infrastructure projects. While

the regulations of SB 743 have not been finalized or adopted, several analyses were conducted to provide Project-related information. Chapter 6 details the methodologies used to assess the Project's VMT.

1.5 ORGANIZATION OF THE REPORT

This report is divided into eight chapters, including this introduction. Chapter 2 documents Existing Conditions in the study area. Chapter 3 describes the methodologies used to develop traffic forecasts for the Cumulative (2019) Without Project scenarios and assesses Cumulative operating conditions. Chapter 4 summarizes the methodologies to forecast Project conditions, and includes an assessment of the Project's potential transportation impacts compared with the baseline scenario. It also includes the assessment of the Project's impacts using CMP methodologies and criteria. Chapter 5 details the analysis of Project alternatives. Chapter 6 analyzed the project's VMT, and other information relevant SB 743. Chapter 7 presents the analysis of potential construction period impacts, and Chapter 8 summarizes the results of the study.

2. EXISTING (2013) CONDITIONS

This chapter details the comprehensive data collection and analysis effort undertaken to assess Existing Conditions in the study area.

2.1 EXISTING ROADWAY FACILITIES

The street network in the City of Redondo Beach is primarily gridded with good connectivity. Under existing conditions there are connectivity issues in the surrounding because of the discontinuous street network that ends at North Harbor Drive and North Pacific Avenue in the northern portion of the site and Torrance Circle west of Catalina Avenue in the southern portion of the site, with no thoroughfare connecting the north and south. A few large land uses, including the AES Power Plant, Sea Hawk Stadium, and Redondo Union High School contribute to a "super-block" roadway network. Arterial streets in the study area, which include Pacific Coast Highway (PCH), Catalina Avenue, Torrance Boulevard, and Del Amo Boulevard, generally provide two to three vehicle travel lanes in each direction, with left-turn pockets at most intersections and right-turn pockets at some intersections. Posted travel speeds in the study area range from 35 to 50 miles per hour (mph), with the majority of streets allowing travel up to 40 mph. As described in detail below, regional access to the project site is provided by PCH and a network of arterial and collector streets. The arterial street network that serves the proposed project area includes Anita Street, Beryl Street, Catalina Avenue, Herondo Street, and Torrance Boulevard. The local streets include Esplanade and Harbor Drive. The following describes the key roadway facilities that serve the project site:

The following details the key roadway facilities that serve the Project site:

- Pacific Coast Highway (State Route 1) - PCH is a 4-lane north/south major arterial. Left-turn lanes are provided at major intersections. A raised median is provided south of Avenue H. On-street parking is prohibited along sections of PCH at Torrance Boulevard, Catalina Avenue and Diamond Street, and generally permitted elsewhere. As a state route, PCH is under the jurisdiction of Caltrans.
- Anita Street - Anita Street is an east/west major arterial that runs east of Pacific Coast Highway (PCH) with two lanes in each direction. Between Maria and Prospect Avenue, it has a center turning lane. East of Prospect, there are left-turn pockets at most intersections, with a raised median. On-street parking is generally permitted on both sides of Anita Street.
- Beryl Street - Beryl Street is an east-west secondary arterial that runs from Harbor Drive to 190th Street. Between Prospect Street and Catalina Avenue, Beryl Street has one lane in each direction with a center turning lane. Beryl Street narrows to two lanes east of Flagler Lane. On- street parking is permitted between Catalina Avenue and Flagler Lane.

- Catalina Avenue - Catalina Avenue is a 4-lane north/south secondary arterial that runs from PCH near the northern City boundary to Palos Verdes Boulevard at the southern City boundary. On-street parking is metered on the west side from Carnelian Street to Torrance Boulevard and on the east side from Emerald Street to Pearl Street. On-street parking is metered on both the west and east side from Avenue I to Palos Verdes Boulevard. It has a raised median between Beryl Street and Torrance Boulevard.

- Herondo Street - Herondo Street is an east/west secondary arterial that runs from PCH to Harbor Drive with one lane in each direction. It has a raised median, and left-turn pockets are provided at most intersections. Diagonal on-street parking is generally provided on both sides of Herondo Street. On-street striped bike lanes are also provided.

- Torrance Boulevard - Torrance Boulevard is a 4-lane east/west major arterial that ends in a cul- de-sac west of Catalina Avenue. On-street parking is permitted along most of its length in the study area.

- Esplanade - Esplanade is a 2-lane north/south collector that runs from Catalina Avenue to Vista Del Mar. On-street parking is permitted, with metered spaces on the west side between Avenue A and Avenue I, as well as the east side of Esplanade. From Knob Hill Avenue south, Esplanade has two lanes with a center turn lane and bike lanes on both sides of the street.

- Harbor Drive - Harbor Drive is a 2-lane north/south collector between Herondo Street and Beryl Street. North of Herondo Street, it continues as Hermosa Avenue. Metered on-street parking is provided. The street also includes a two-way raised median separated cycle track on the west side of the street.

2.2 EXISTING PEDESTRIAN AND BICYCLE FACILITIES

Sidewalks are generally present throughout the study area and project site, and marked crosswalks are provided at all major arterial intersections. Most signalized intersections of major arterials and collector streets associated with the project site and study area provide marked crossings on all four legs of the intersection, while some do not provide crossing facilities on all four legs of the intersection. Pedestrian access to the north side of the project site is provided via sidewalks on Harbor Drive. The closest signalized crossings of Harbor Drive are located at Portofino Way. Pedestrian crossings are also provided at the four-way stop controlled intersection entrance of the existing Captain Kidd's restaurant. Towards the southern side of the project site, pedestrian access is provided by sidewalks and a pedestrian plaza on Coral Way, where Torrance Boulevard terminates in Torrance Circle. In the study area, Harbor Drive and a connection through the site is part of the California Coastal Trail.

Existing bicycle facilities in the study area include a Class I bicycle path/cycle track connecting the Hermosa Beach Strand to the Redondo Beach Pier, which also provides bicycle access to the project site. This cycle track continues through the project site and connects to Coral Way. Ultimately, this bicycle lane connects

to an existing Class I bicycle path along the coast and connects to a Class III bicycle route on Esplanade. The California Pacific Bike Route runs along Catalina Street in the study area. A bicycle path also runs through Veterans Park and extending south to the City boundary. Class II bicycle lanes are on Herondo Street, Catalina Avenue north of Torrance Boulevard, and Diamond Street, and a Class III bicycle route is located on Catalina Avenue south of Torrance Boulevard. The South Bay Bicycle Master Plan indicates that additional Class I, II, and III facilities are planned throughout the study area. Existing and planned bicycle facilities are presented in Figure 3.13-2.

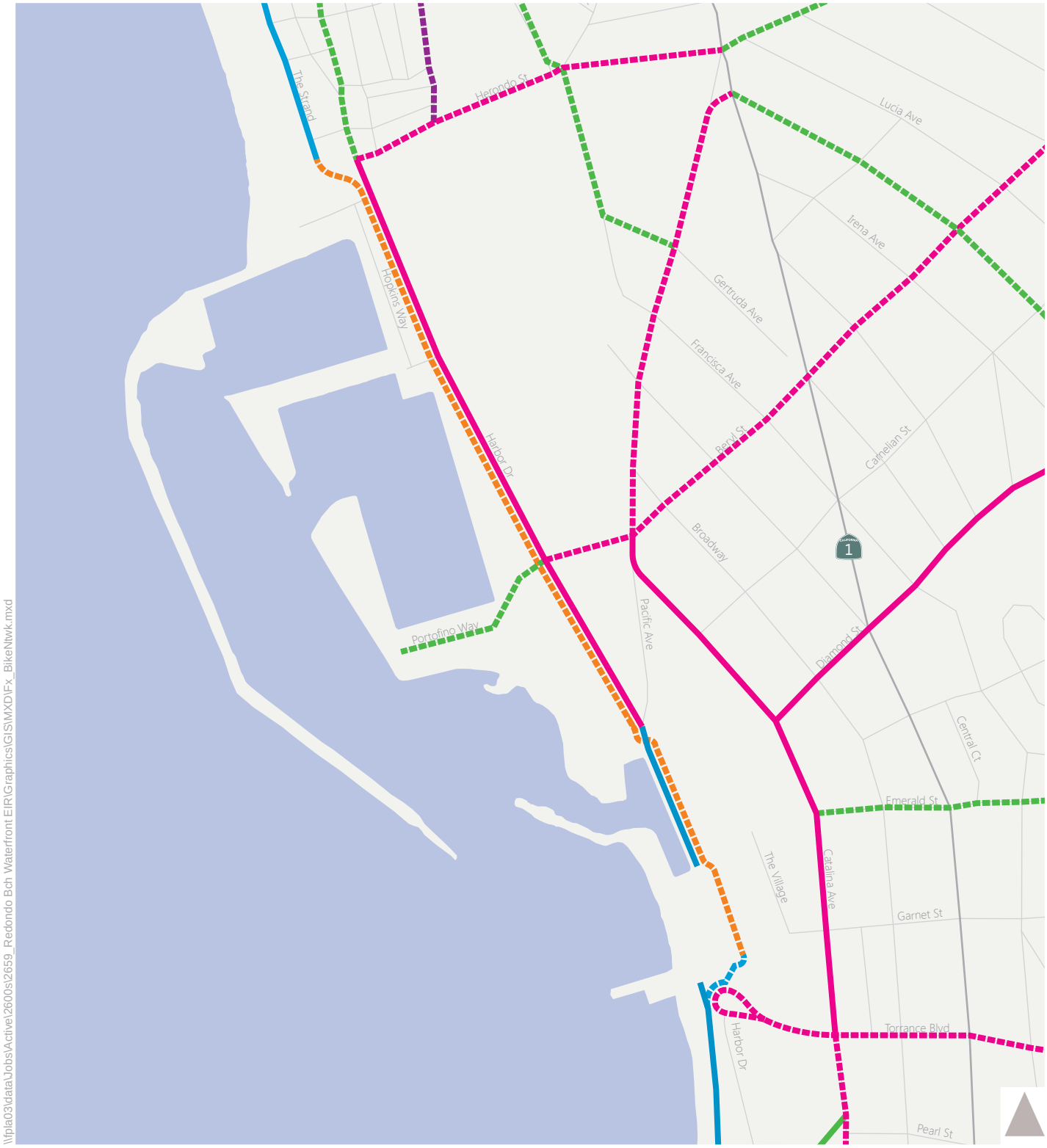
The recently completed Herondo Gateway project introduced improved pedestrian and bicycle facilities to the study area. Elements of the project include:

- Bi-directional bike path/cycle track connecting the Hermosa Beach Strand to the Redondo Beach Pier. This facility includes a 5' median buffer separating the cycle track from traffic lanes on Harbor Drive.
- Bike lanes on Herondo Street (with back-in angled parking), and the removal of a vehicular travel lane in each direction
- Improved pedestrian crossings at the Herondo Street & Harbor Drive intersection, including the addition of a crosswalk on the north leg of the intersection. Other crossings will be striped with high-visibility crosswalk markings.
- Installation of new streetlights on the west side of Harbor Drive to improve visibility for pedestrians and cyclists.

Bicycle access to the project site is provided via a Class II bicycle lane on the west side of Harbor Drive.

2.3 EXISTING SITE CIRCULATION

Vehicular circulation through the project site is limited due to the disconnected nature of the north and south areas of the Harbor. Catalina Avenue provides the nearest north-south access. This inhibits emergency vehicle and public transportation access to the International Boardwalk and central portion of the project site. This discontinuous street network diminishes site vehicular connectivity. In addition, the existing bikeway runs through the Pier Parking Structure, and there are several shared spaces with pedestrians were cyclists need to dismount to circulate through the site. Pedestrian circulation between the north and south portions of the project site are limited to the boardwalk because Basin III divides the site.



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- Bike route
- Bike friendly street
- Bike lane
- Cycletrack
- Bike path
  - *Proposed*
  - *Existing*

Sources: City of Redondo Beach & South Bay Bicycle Master Plan

Note: Herondo St shown as proposed because Herondo Gateway project completed after counts were collected

Figure 5

Existing and Proposed Bikeways

2.4 EXISTING PUBLIC TRANSIT FACILITIES

The study area is served by several bus routes operated by four transit operators, including the Los Angeles County Metropolitan Transportation Authority (Metro), Los Angeles Department of Transportation Commuter Express (CE), Beach Cities Transit (BCT), and Torrance Transit (TT). Figure 6 illustrates transit routes in the study area. The following details each individual line that serves the study area:

- Metro Line 130 - Metro Line 130 provides local service between the Los Cerritos Center in Cerritos and Redondo Beach. In the study area, Line 130 travels north and south along Harbor Boulevard and Catalina Avenue. Service is provided seven days per week, with weekday peak period headways of approximately 20 to 30 minutes.
- Metro Line 232 - Metro Line 232 provides local service between the LAX bus center and Downtown Long Beach. In the study area, Line 210 travels north and south along PCH. Service is provided seven days per week with weekday peak period headways of approximately 10 to 20 minutes.
- CE Line 438 - Commuter Express (CE) Line 438 (operated by LADOT) provides express service between Downtown Los Angeles and the City of Redondo Beach. In the study area, Line 438 travels north and south along Harbor Drive and Catalina Avenue. Service is provided Monday through Friday, with peak period headways of approximately 15 to 30 minutes.
- BCT Line 102 - Beach Cities Transit (BCT) Line 102 provides local service between the Metro Green Line, the South Bay Galleria, and the Redondo Beach Pier. In the study area, Line 102 travels north and south along Catalina Avenue and northeast and southwest along Diamond Street. Service is provided seven days per week, with weekday peak period headways of approximately 30 to 40 minutes.
- BCT Line 109 - BCT Line 109 provides local service between the LAX Bus Center, Redondo Beach Pier, and Riviera Village. In the study area, Line 109 travels north and south along Catalina Avenue. Service is provided seven days per week, with weekday peak period headways of approximately 30 to 45 minutes.
- TT Line 3 - Torrance Transit (TT) Line 3 provides local service between Downtown Long Beach and the Redondo Beach Pier. In the study area, Line 3 travels east and west along Torrance Boulevard. Service is provided seven days per week, with weekday peak period headways of approximately 15 minutes.
- TT Line 7 - Line 7 provides local service between Wilmington and the Redondo Beach Pier. In the study area, Line 7 travels east and west along Torrance Boulevard. Service is provided Monday through Saturday, with weekday peak period headways of approximately 30 minutes.

Metro Line 130
Metro Line 232
CE Line 438
BCT 102
BCT 109
TT Line 3

Figure 6

Transit Routes

2.5 EXISTING INTERSECTION OPERATING CONDITIONS

This section details existing intersection operating conditions, including the peak hour turning movement traffic volumes collected for the intersections analyzed in the study, as well as the resulting operating conditions at each intersection, analyzed by the calculation of volume-to-capacity (V/C) ratios or delay, and the corresponding LOS.

Intersection Lane Geometries

A detailed field review of each study intersection was conducted to document the existing geometric lane configurations and traffic signal phasing of each intersection to be used as input to the LOS analysis.

Intersection Traffic Volumes

To analyze Existing Conditions, weekday morning and afternoon peak period intersection turning movement counts were conducted at the study intersections in the summer of 2013 and the spring of 2014. The maximum peak hour traffic volumes for each intersection from the combined data sets were selected to reflect peak volumes at each intersection, regardless of the season. Generally, intersections located closest to the Waterfront had higher peak hour traffic volumes in the summer season. Other intersections generally had higher traffic volumes in the spring when schools were in session. Regardless, the highest AM and PM peak hour of traffic volumes was selected for analysis. After the collection of the initial set of traffic counts, the study area was expanded in consultation with the City of Redondo Beach to include additional intersections beyond the initial set. A total of six additional intersections were added to the analysis, four intersections in the City of Hermosa Beach, and two additional intersections in the City of Redondo Beach. The Hermosa Beach counts (Intersections 37 through 40), were collected on a weekday in the fall of 2014. Counts for the two additional intersections in Redondo Beach (Intersection 36 - Pacific Coast Highway & Palos Verdes Boulevard and Intersection 41 – Prospect Avenue & Pacific Coast Highway) were obtained from the Legado Redondo Traffic Impact Analysis (Overland Traffic Consultants, 2014). The counts were collected in fall 2011. To adjust the 2011 volumes to reflect 2013 conditions, the 2011 turning movement volumes were grown by 3.2% in the analysis of the existing baseline (and other analysis scenarios).

Peak hour turning movement volumes, as well as intersection lane configurations are included in Appendix X-2. Traffic count data sheets are provided in Appendix X-3.

Level of Service Methodologies

LOS is a qualitative measure used to describe the condition of traffic flow on the street system, ranging from excellent conditions at LOS A to overloaded conditions at LOS F. Twenty-three of the 34 study intersections are signalized, and eleven are unsignalized. As described in Chapter 1, two types of LOS analysis were conducted: Intersection Capacity Utilization (ICU), and Highway Capacity Manual (HCM). LOS definitions for both methodologies are provided in Tables 2 and 3.

Intersection Capacity Utilization

For signalized intersections, the ICU method of intersection analysis was used to determine the intersection V/C ratio and corresponding LOS for the turning movements and intersection characteristics. The ICU value is determined by summing the V/C ratio sum of the critical movements, plus a factor for yellow signal time.

Highway Capacity Manual

The unsignalized intersections were analyzed using the Operations Methodology for un-signalized intersections from the HCM. Intersection delay was calculated and used to find the corresponding LOS in Table 5 based on the amount of control delay. The unsignalized intersections were analyzed using the All-Way Stop method and the Two-way Stop method from the HCM 2010. Delay was calculated based on the worst-case approach (in the case of one or 2-way stop-controlled intersections), or average delay (in the case of all-way stop-controlled intersections), and used to find the corresponding LOS listed in Table 3. The Synchro software package was used to produce the HCM results.

TABLE 2
LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS – ICU METHOD

Level of Service	Intersection Capacity Utilization (ICU)	Definition
A	0.000-0.600	**EXCELLENT.** No vehicle waits longer than one red light and no approach phase is fully used.
B	0.601-0.700	**VERY GOOD.** An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701-0.800	**GOOD.** Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801-0.900	**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	0.901-1.000	**POOR.** Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	>1.000	**FAILURE.** Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Source: Adapted from Transportation Research Board

TABLE 3
INTERSECTION LEVEL OF SERVICE DEFINITIONS – HCM METHOD

Level of Service	Unsignalized Intersection Control Delay (sec/veh)[1]	General Description
A	0 – 10.0	Little to no congestion or delays.
B	10.1 – 15.0	Limited congestion. Short delays.
C	15.1 – 25.0	Some congestion with average delays.
D	25.1 – 35.0	Significant congestion and delays.
E	35.1 – 50.0	Severe congestion and delays.
F	> 50.0	Total breakdown with extreme delays.

Notes:
1. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay.

Source: *Highway Capacity Manual*

Level of Service Results

The existing peak hour traffic volumes shown in Appendix X-2 were analyzed using the analysis methodologies described above to determine the existing operating conditions at the 41 study intersections selected for analysis under Existing Conditions. LOS calculation worksheets are included in Appendix X-4.

Table 4 summarizes the results of the AM and PM peak hour intersection analysis. As shown in Table 4, the following four intersections operate at LOS E during the PM peak hour under Existing Conditions. All other intersection currently operate at LOS D or better during both peak hours.

7) Pacific Coast Highway/Catalina Avenue & Herondo Street/Anita Street (PM peak hour)
13) Catalina Avenue & Francisca Avenue (PM peak hour)
19) Pacific Coast Highway & Beryl Street (PM peak hour)
36) Pacific Coast Highway & Palos Verdes Boulevard (PM peak hour)

TABLE 4
EXISTING CONDITIONS INTERSECTION LEVEL OF SERVICE

Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
		LOS	V/C or Delay (sec)	LOS	V/C or Delay (sec)
1. Hermosa Ave & 2nd St	AWSC	B	11.2	B	10.5
2. Monterey Blvd & 2nd St	AWSC	A	8.3	A	9.7
3. Valley Dr & 2nd St	AWSC	A	9.3	C	19.3
4. Harbor Dr/Hermosa Ave & Herondo St	Signal	A	0.518	A	0.491
5. Monterey Blvd & Herondo St	TWSC	C	15.3	C	19.3
6. Valley Dr/Francisca Ave & Herondo St	AWSC	B	12.7	C	23.4
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	Signal	D	0.896	**E**	**0.989**
8. Prospect Ave & Anita St	Signal	B	0.679	B	0.664
9. Harbor Dr & Yacht Club Way	Signal	A	0.352	A	0.477
10. Pacific Coast Hwy & Catalina Ave	Signal	D	0.855	D	0.883
11. Harbor Dr & Marina Way	Signal	A	0.281	A	0.459
12. Catalina Ave & Gertruda Ave	Signal	A	0.371	A	0.54
13. Catalina Ave & Francisca Ave	TWSC	C	17.0	**E**	**38.0**
14. Catalina Ave & Broadway	TWSC	C	18.1	C	24.1
15. Harbor Dr & Portofino Way/Beryl St	Signal	A	0.317	A	0.592
16. Catalina Ave & Beryl St	Signal	A	0.374	A	0.565
17. Broadway & Beryl St	TWSC	B	11.8	B	12.4

TABLE 4
EXISTING CONDITIONS INTERSECTION LEVEL OF SERVICE

Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
		LOS	V/C or Delay (sec)	LOS	V/C or Delay (sec)
18. Francisca Ave & Beryl St	TWSC	B	12.2	C	18.1
19. Pacific Coast Hwy & Beryl St	Signal	C	0.757	**E**	**0.901**
20. Harbor Dr & Pacific Ave	AWSC	A	7.7	A	8.7
21. Catalina Ave & Carnelian St	Signal	A	0.438	A	0.465
22. Catalina Ave & Diamond St	Signal	A	0.43	A	0.444
23. Catalina Ave & Emerald St	Signal	A	0.453	A	0.457
24. Pacific Coast Hwy & Garnet St	Signal	B	0.691	B	0.663
25. Catalina Ave & Torrance Blvd	Signal	A	0.424	A	0.475
26. Pacific Coast Hwy & Torrance Blvd	Signal	D	0.818	D	0.848
27. Helberta Ave/Camino Real & Torrance Blvd	Signal	A	0.476	A	0.518
28. Prospect Ave & Torrance Blvd	Signal	D	0.819	C	0.742
29. Catalina Ave & Pearl St	Signal	A	0.386	A	0.373
30. Camino Real & Pearl St	AWSC	A	8.9	A	9
31. Pacific Coast Hwy & Sapphire St/Francisca Ave	Signal	B	0.611	B	0.65
32. Esplanade & Knob Hill Ave	AWSC	A	9.1	B	10.4
33. Catalina Ave & Knob Hill Ave	AWSC	B	11.2	B	12.5
34. Pacific Coast Hwy & Knob Hill Ave	Signal	B	0.655	B	0.698
35. Harbor Dr & Pacific Ave [a]	TWSC	A	--	A	--
36. Pacific Coast Hwy & Palos Verdes Blvd	Signal	D	0.85	**E**	**0.957**
37. Pacific Coast Hwy & 2nd St	Signal	B	0.695	B	0.696
38. Pacific Coast Hwy & 10th/Aviation	Signal	C	0.777	C	0.743
39. Pacific Coast Hwy & Pier/14th St	Signal	A	0.565	C	0.703
40. Pacific Coast Hwy & 16th St	Signal	A	0.526	B	0.636
41. Pacific Coast Hwy & Prospect Ave	Signal	C	0.704	C	0.775

Notes: [a] Harbor Dr & Pacific Ave was not analyzed for Existing Conditions because it will only function as a full intersection with the Project.

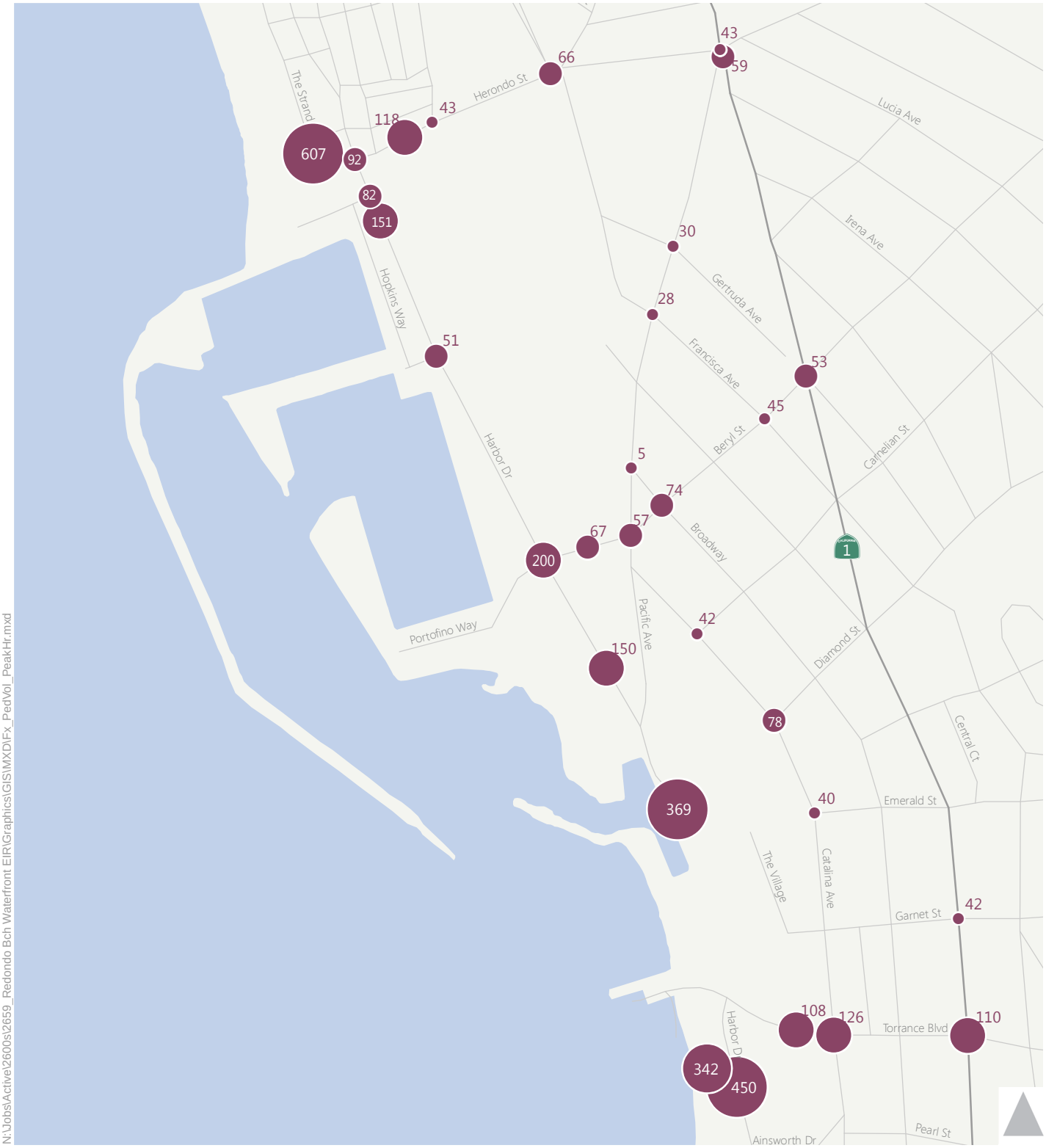
TWSC = 2-way stop control , worst approach delay reported

AWSC = All-way stop control, average intersection delay reported

2.6 EXISTING PEDESTRIAN & BICYCLE CONDITIONS

Locations of High Pedestrian and Bicycle Activity

AM and PM peak period bicycle and pedestrian counts were collected at the study intersections concurrently with intersection turning movement vehicle counts in August 2013 and March 2014. Additionally, weekend peak-hour counts were collected at a number of additional locations within the immediate waterfront area on a Saturday in August 2013. Pedestrian and bicycle volumes counted in the study area are presented in Figures 7A and 7B and Table 5. Locations with high bicycle volumes occurred almost exclusively on the Strand at Herondo Street and on Harbor Drive, along existing Class I and Class II bicycle facilities. Locations with high pedestrian volumes occurred at overlapping locations, near beaches and the waterfront. Bicycle and pedestrian counts away from the immediate waterfront were generally low across the study area.



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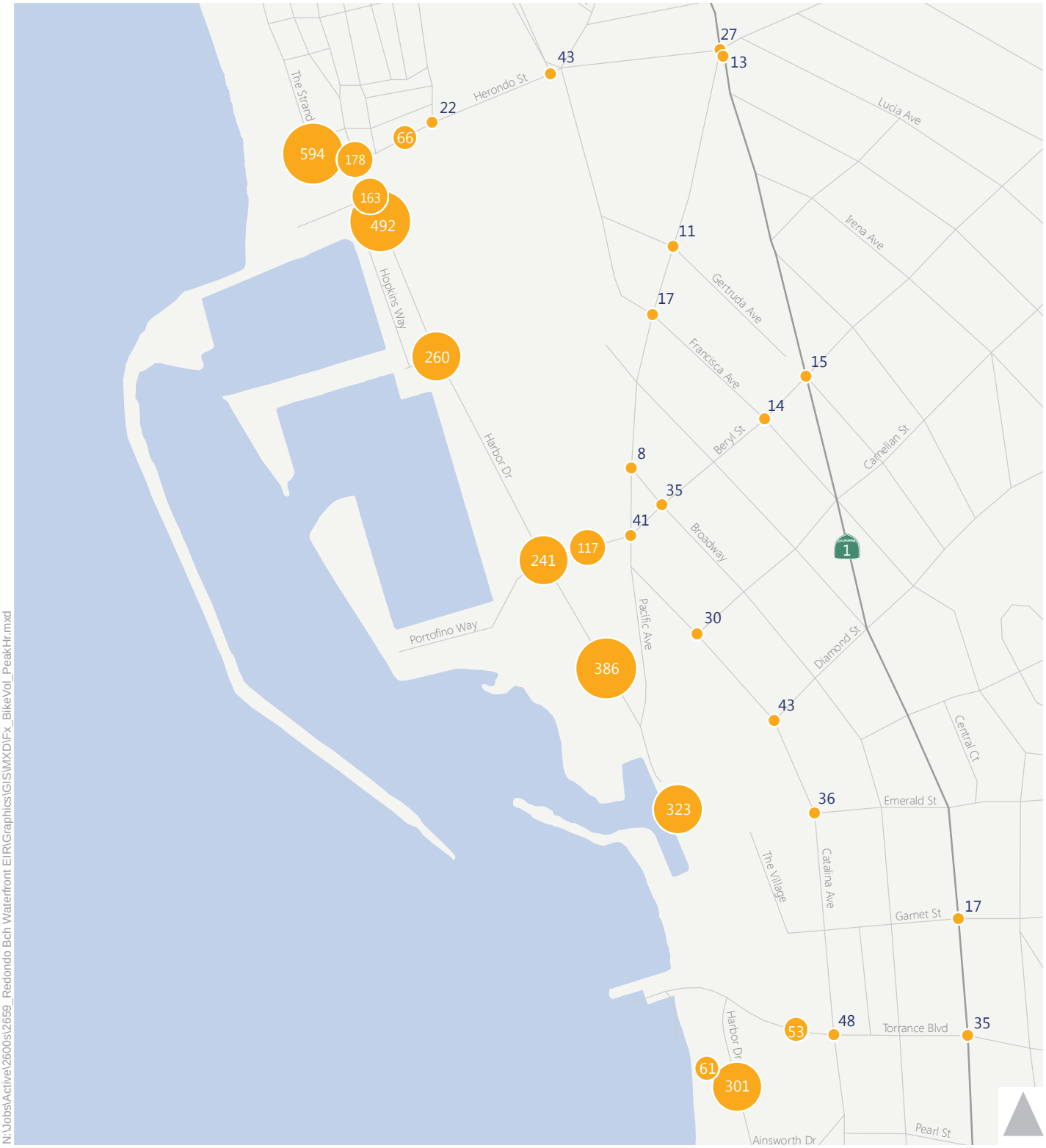
Pedestrian Volumes

≤ 50 | 51 - 100 | 101 - 200 | 201 - 350 | 350 +

Figure 7a

Peak Hour Pedestrian Volumes



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Bicycle Volumes

≤ 50 | 51 - 100 | 101 - 200 | 201 - 350 | 350 +

Figure 7b

Peak Hour Bicycle Volumes

TABLE 5
PEAK HOUR BICYCLE AND PEDESTRIAN VOLUMES

Study Intersection or Other Count Location	Peak Hour	
	Pedestrians	Bicyclists
Hermosa Ave & 2nd St	119	112
Monterey Blvd & 2nd St	86	44
Valley Dr & 2nd St	111	47
Harbor Dr/Hermosa Ave & Herondo St	92	178
Monterey Blvd & Herondo St	43	22
Valley Dr/Francisca Ave & Herondo St	66	43
Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	43	27
Prospect Ave & Anita St	25	10
Harbor Dr & Yacht Club Way	82	163
Pacific Coast Hwy & Catalina Ave	59	13
Harbor Dr & Marina Way	51	260
Catalina Ave & Gertruda Ave	30	11
Catalina Ave & Francisca Ave	28	17
Catalina Ave & Broadway	5	8
Harbor Dr & Portofino Way/Beryl St	200	241
Catalina Ave & Beryl St	57	41
Broadway & Beryl St	74	35
Francisca Ave & Beryl St	45	14
Pacific Coast Hwy & Beryl St	53	15
Catalina Ave & Carnelian St	42	30
Catalina Ave & Diamond St	78	43
Catalina Ave & Emerald St	40	36
Pacific Coast Hwy & Garnet St	42	17
Catalina Ave & Torrance Blvd	126	48
Pacific Coast Hwy & Torrance Blvd	110	35
Helberta Ave/Camino Real & Torrance Blvd	66	15
Prospect Ave & Torrance Blvd	91	27
Catalina Ave & Pearl St	59	36
Camino Real & Pearl St	17	7
Pacific Coast Hwy & Sapphire St/Francisca Ave	41	15

TABLE 5
PEAK HOUR BICYCLE AND PEDESTRIAN VOLUMES

Study Intersection or Other Count Location	Peak Hour	
	Pedestrians	Bicyclists
Esplanade & Knob Hill Ave	70	29
Catalina Ave & Knob Hill Ave	96	33
Pacific Coast Hwy & Knob Hill Ave	48	14
The Strand mid-block between Lyndon St & Herondo St	607	594
Harbor Dr mid-block crosswalk n/o Yacht Club Wy & Hopkins Wy	151	492
Harbor Dr mid-block between Beryl St & Pacific Av	150	386
Waterfront Promenade n/o Village Dr	369	323
George Freeth Wy mid-block between Torrance Bl & Pearl St	450	301
Beryl St mid-block between Harbor Dr & Catalina Av	67	117
Herondo St mid-block between Hermosa Av & Monterey Bl	118	66
Veteran's Park: George Freeth Wy & the Strand	342	61
Mid-block w/o Catalina Av & Coral Wy/Torrance Bl	108	53
Prospect Av & Torrance Bl	30	40

Collision Analysis

A traffic collision is considered to be any event where a vehicle strikes any object while moving. That object could be another car, a pedestrian, or something fixed in place like a light post. When collisions cause damage or injury, the details are recorded by the local law enforcement agency and loaded into the California Highway Patrol (CHP) Statewide Integrated Traffic Records System (SWITRS). The latest SWITRS report was used to analyze collisions in which a vehicle struck a bicyclist or a pedestrian in the study area over a five year period from 2008 to 2012. These data were used as a screening process to determine if there are any locations adjacent to the Project site that have a greater frequency of multi-modal conflicts compared with other areas in the City of Redondo Beach.

Citywide, between 2008 and 2012, there were 105 bicycle-involved and 100 pedestrian-involved collisions. More than 70 percent of these collisions occurred at locations where just one collision was recorded over the five year period. Fewer than 10 percent of collision locations experienced three or more collisions over the five year period. There were six locations at which four bicycle- or pedestrian-involved collisions occurred, and two locations at which five bicycle- or pedestrian-involved collisions occurred. All of these locations are located along either Artesia Boulevard or the Pacific Coast Highway, representing two of the principal thoroughfares through the City. Collisions in the study area follow a similar frequency distribution compared to the City as a whole.

During the same time period, there were a total of 38 bicycle-involved and 32 pedestrian-involved collisions in the study area, ranging from one, two, or three collisions per affected location over the five-year period. There were no affected locations within the study area at which four or more collisions occurred across the five-year period. Roadways in the study area with the highest number of collisions include Pacific Coast Highway, Pacific Avenue, and Beryl Street. The most collisions in the five-year period occurred Pacific Avenue at the intersection with Catalina Avenue; Adjacent to the Project site on Harbor Drive, Pacific Avenue, and Catalina Avenue, a total of seven pedestrian-involved collisions and five bicycle-involved collisions occurred over the five-year period. None of the intersections and roadways along the Project site indicate a greater frequency of multi-modal conflicts.

Collisions within the study area are presented in Figure 8.

N:\Jobs\Active\2600s\2659_Redondo Bch Waterfront EIR\Graphics\GIS\MXD\Fx_BikeVol_PeakHr - Copy.mxd

Figure 8

Redondo Beach Waterfront EIR Collisions (2008 - 2012)

3. CUMULATIVE (2019) CONDITIONS

This chapter details the traffic volume forecasts prepared to evaluate cumulative conditions, and the resulting forecast cumulative operating conditions.

3.1 CUMULATIVE WITHOUT PROJECT (2019) CONDITIONS

Intersection Lane Geometries

Study intersections are expected to remain consistent with their existing lane geometries under the Cumulative without Project scenario.

Intersection Traffic Volumes

To estimate Cumulative (2019) Without Project traffic volumes, the Existing (2013) traffic volumes were increased by 0.36% per year, (2.16% total growth over six years), using the SCAG population growth rate. CEQA typically allows a public agency to rely upon (1) growth projections, or (2) a list of projects for assessing cumulative impacts. While the City is relying primarily upon the growth projections approach, the City also conservatively incorporated the trip generation from several specific projects located in proximity to the primary routes of trip distribution for the project site. These specific projects are the known development projects with the greatest likelihood to add trips to the intersections located closest to the Project Site. Traffic expected to be generated by four additional cumulative development projects in the study area were also added to the traffic volumes. Project only traffic volumes obtained from the environmental analysis for the following four projects were added to the volumes grown using the SCAG growth rate. The projects include:

- Shade Hotel Redondo Beach (Traffic Study for the Shade Hotel Redondo Beach, Fehr & Peers, 2011).[12]
- Traffic Impact Analysis for a Proposed Mixed-Use Development Legado Redondo, Overland Traffic Consultants, 2014).[13]

[12] Shade Hotel MND project-only traffic volumes are available in the adopted MND (Section 16), which is available online at: http://laserweb.redondo.org/WebLink/DocView.aspx?id=220147. (This project was approved in 2011, but at the time of the release of the Waterfront DEIR it was still under construction.)

[13] The Legado Trip Generation project-only traffic volumes are available online at: http://www.redondo.org/civica/filebank/blobdload.asp?BlobID=29261 (At the time the Waterfront DEIR was released, this project was still being considered for approval by the City).

- Kensington Assisted Living Facility Traffic Impact Analysis, Kunzman Associates, 2015)[14]
- Traffic Evaluation Report of Prospect Avenue & Prospect Avenue/Vista del Parque 1914-1926 Pacific Coast Highway (Overland Traffic Consultants, 2015).[15]

Cumulative without Project AM and PM peak hour traffic volumes are illustrated in Appendix X-2.

Level of Service Methodologies

The AM and PM peak hour Cumulative (2019) without Project traffic volumes and intersection lane geometries were analyzed using the same methodologies documented above.

Level of Service Results

As shown in Table 6, of the 41 study area intersections selected for analysis for Cumulative (2019) Without Project conditions, six intersections are projected to operate at LOS E or F during one or both peak hours:

6) Valley Drive/Francisca Avenue & Herondo Street (PM peak hour)
7) PCH/Catalina Avenue & Herondo Street/Anita Street (both peak hours)
10) PCH & Catalina Avenue (PM peak hour)
13) Catalina Avenue & Francisca Avenue (PM peak hour)
19) PCH & Beryl Street (PM peak hour)
36) PCH & Palos Verdes Boulevard (PM peak hour)

All other intersections are estimated to operate at LOS D or better during both peak hours. Detailed LOS worksheets are provided in Appendix X-4.

[14] The Kensington DEIR project-only traffic volymes are available in the Draft EIR (Section 4.11), which is available online at: http://www.redondo.org/civica/filebank/blobdload.asp?BlobID=29612 (At the time the Waterfront DEIR was released, this project was not yet approved by the City Council, Coastal Commission, or the electorate).
[15] The Prospect Avenue project-only traffic volumes are available online at: http://redondo.siretechnologies.com/sirepub/cache/16/sssyhwtv5pyekdedheazrepv/81532110420151051288 4.PDF (This project was approved by the City in September 2015).

TABLE 6
CUMULATIVE WITHOUT PROJECT CONDITIONS INTERSECTION LEVEL OF SERVICE

Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
		LOS	V/C or Delay (sec)	LOS	V/C or Delay (sec)
1. Hermosa Ave & 2nd St	AWSC	B	11.4	B	10.6
2. Monterey Blvd & 2nd St	AWSC	A	8.3	A	9.7
3. Valley Dr & 2nd St	AWSC	A	9.4	C	20.5
4. Harbor Dr/Hermosa Ave & Herondo St	Signal	A	0.528	A	0.504
5. Monterey Blvd & Herondo St	TWSC	C	15.6	C	20.0
6. Valley Dr/Francisca Ave & Herondo St	AWSC	C	16.6	**E**	**43.3**
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	Signal	**E**	**0.918**	**F**	**1.022**
8. Prospect Ave & Anita St	Signal	B	0.689	B	0.678
9. Harbor Dr & Yacht Club Way	Signal	A	0.358	A	0.488
10. Pacific Coast Hwy & Catalina Ave	Signal	D	0.878	**E**	**0.912**
11. Harbor Dr & Marina Way	Signal	A	0.286	A	0.471
12. Catalina Ave & Gertruda Ave	Signal	A	0.377	A	0.551
13. Catalina Ave & Francisca Ave	TWSC	C	17.4	**E**	**40.3**
14. Catalina Ave & Broadway	TWSC	C	18.7	D	25.3
15. Harbor Dr & Portofino Way/Beryl St	Signal	A	0.321	B	0.602
16. Catalina Ave & Beryl St	Signal	A	0.384	A	0.598
17. Broadway & Beryl St	TWSC	B	11.9	B	12.5
18. Francisca Ave & Beryl St	AWSC	B	12.3	C	18.5
19. Pacific Coast Hwy & Beryl St	Signal	C	0.777	**E**	**0.932**
20. Harbor Dr & Pacific Ave	AWSC	A	7.7	A	8.7
21. Catalina Ave & Carnelian St	Signal	A	0.445	A	0.472
22. Catalina Ave & Diamond St	Signal	A	0.438	A	0.451
23. Catalina Ave & Emerald St	Signal	A	0.459	A	0.465
24. Pacific Coast Hwy & Garnet St	Signal	C	0.711	B	0.686
25. Catalina Ave & Torrance Blvd	Signal	A	0.431	A	0.483
26. Pacific Coast Hwy & Torrance Blvd	Signal	D	0.848	D	0.892
27. Helberta Ave/Camino Real & Torrance Blvd	Signal	A	0.487	A	0.534
28. Prospect Ave & Torrance Blvd	Signal	D	0.834	C	0.755
29. Catalina Ave & Pearl St	Signal	A	0.392	A	0.379
30. Camino Real & Pearl St	AWSC	A	9.0	A	9.1
31. Pacific Coast Hwy & Sapphire St/Francisca Ave	Signal	B	0.635	B	0.678
32. Esplanade & Knob Hill Ave	AWSC	A	9.2	B	10.6

TABLE 6
CUMULATIVE WITHOUT PROJECT CONDITIONS INTERSECTION LEVEL OF SERVICE

Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
		LOS	V/C or Delay (sec)	LOS	V/C or Delay (sec)
33. Catalina Ave & Knob Hill Ave	AWSC	B	11.5	B	13.1
34. Pacific Coast Hwy & Knob Hill Ave	Signal	B	0.682	C	0.736
35. Harbor Dr & Pacific Ave [a]	TWSC	A	--	A	--
36. Pacific Coast Hwy & Palos Verdes Blvd	Signal	D	0.878	**E**	**0.997**
37. Pacific Coast Hwy & 2nd St	Signal	C	0.707	C	0.717
38. Pacific Coast Hwy & 10th/Aviation	Signal	C	0.792	C	0.757
39. Pacific Coast Hwy & Pier/14th St	Signal	A	0.574	C	0.717
40. Pacific Coast Hwy & 16th St	Signal	A	0.536	B	0.647
41. Pacific Coast Hwy & Prospect Ave	Signal	C	0.723	C	0.793

Notes: [a] Harbor Dr & Pacific Ave was not analyzed for Cumulative without Project conditions because it will only function as a full intersection with the Project.

TWSC = 2-way stop control , worst approach delay reported

AWSC = All-way stop control, average intersection delay reported

Cumulative without Project Pedestrian & Bicycle Conditions

No substantial changes to the pedestrian and bicycle system are expected under Cumulative without Project conditions by 2019, although the South Bay Bicycle Master Plan indicates that additional Class I, II, and III facilities are planned in the study area.

Cumulative Without Transit Conditions

No substantial changes to the transit system are expected under Cumulative without Project conditions, though the SCAG RTP anticipates increases in transit ridership in the future. The Metro Green Line South Bay extension is a planned regional transit project on the east side of the City of Redondo Beach, but is not expected to be implemented by the 2019 Project opening year.

4. PROJECT CONDITIONS & IMPACT ANALYSIS

This chapter details the assessment of traffic conditions with the completion of the Project.

4.1 PROJECT TRIP GENERATION

The MXD+ model was also used to estimate Project trip generation. A summary of the input data the model is sensitive to, and the accuracy benefits of the MXD+ model over traditional ITE trip generation methods were described above in Chapter 1 and Chapter 3.

Because the Redondo Waterfront is an active site with several existing uses, a trip generation credit for the uses active at the time traffic counts were collected has been applied to the external vehicle trip generation estimates of the Project. Because traffic counts were collected in the summer of 2013 as well as the spring of 2014, the existing active land uses were documented for both periods. The amount of active uses (defined as a land use that was open for business with an active lease at the time traffic counts were collected), varied between the two dates. Fewer uses were active in the summer of 2013. Because fewer uses were active then, and so the resulting trip generation credit for uses to be removed and would be smaller (and so the resulting net-new Project trips would be higher), the active uses of summer 2013 were used to calculate the existing trip generation credit (a conservative assumption).

GLA rather than Gross Building Area (GBA) is generally the preferred metric for calculating a project's trip generation for many land use categories, based on guidance provided in Trip Generation, 9th Edition (Institute of Transportation Engineers, 2012). Ancillary spaces, such as external corridors and storage areas typically do not generate vehicle trips on their own and are also typically not included in the calculation of the square feet of a lease holder's space. Nevertheless, both the analysis of Existing and Project trip generation conservatively use GLA rather than GBA. For the existing waterfront uses, GBA accounts for approximately 12% additional square feet over GLA reflecting the quantity of ancillary spaces.

The buildout of the Project in terms of the land uses that will be provided at the Project site will ultimately depend on market conditions. However, because the mix of uses can affect a Project's trip generation estimates, to analyze the maximum envelope of the Project's trip generation, a Project scenario that maximizes the amount of restaurant spaces was selected, because restaurants generate trips at a much higher rate than retail uses. As described in Chapter 1, the Project proposes the construction/renovation of up to approximately 523,732 square feet (304,058 square feet net new GBA development). To estimate Project trips the following maximum development scenario was analyzed for the 523,732 square feet (GBA) proposed for the Project:

- Retail - 97,000 square feet of GLA
- Movie Theater - 700 seats
- Quality Restaurant - 128,000 square feet of GLA
- High Turnover Restaurant - 45,000 square feet of GLA
- Hotel - 130 rooms
- Office - 60,000 square feet of GLA

The existing uses active in summer 2013 included:

- Retail - 31,005 square feet of GLA
- Quality Restaurant - 45,094 square feet of GLA
- High Turnover Restaurant - 30,083 square feet of GLA
- Office - 71,174 square feet of GLA

A MXD+ model external vehicle trip generation estimate was prepared for the above development scenario of the Project in order to calibrate the ITE trip generation estimates to reflect the site specific characteristics of the Project. A MXD+ model external vehicle trip generation estimate was also prepared for the existing uses on the site to calibrate the ITE trip generation for the existing uses active at the time of counts, in order to maintain consistency between the Project and the existing uses trip credit.

The Project also includes a two-lane 40 parking stall boat launch ramp. Trip generation for the boat launch ramp was developed with the following assumptions:

- The parking lot will turn over twice on a typical weekday, resulting in 160 daily trips (80 inbound and 80 outbound trips)
- 20% of daily trips will occur inbound in the AM peak hour and outbound in the PM peak hour (8 trips). Half of those peak hour trips will be round trip (both inbound and outbound), for a total of 12 peak hour trips.
- Boat launch trips do not include a mixed use adjustment or trip credit.

Table 7 presents the net external trip generation estimates for the Project. The Project is estimated to generate 12,550 daily, 344 AM peak hour, and 782 PM peak hour net new trips (on top of the existing trip generation of the Project site).

TABLE 7
PROJECT TRIP GENERATION ESTIMATES

Designation	Size	Units	Trip Generation Rates			Trip Generation Estimates						
							AM Peak Hour			PM Peak Hour		
			Daily	AM Peak Hour	PM Peak Hour	Daily	In	Out	Total	In	Out	Total
Proposed Project												
Retail [a]	97	KSF	Equation			6,658	95	58	153	282	305	587
Movie Theater [b]	700	Seats	1.80	0.00	0.07	1,260	0	0	0	27	22	49
Quality Restaurant[c]	128	KSF	89.95	0.81	7.49	11,514	57	47	104	643	316	959
High Turnover Rest. [d]	45	KSF	127.15	10.81	9.85	5,722	267	219	486	266	177	443
Hotel [e]	130	Rooms	8.17	0.53	0.60	1,062	41	28	69	40	38	78
Office [f]	60	KSF	11.03	1.56	1.49	662	83	11	94	15	74	89
Total Trips (base ITE rates)						26,878	543	363	906	1,273	932	2,205
MXD+ Model calibration of base ITE rates reflecting project & site specific characteristics						-4,804	-93	-62	-155	-428	-314	-742
Boat Launch Ramp	40	Stalls				160	8	4	12	4	8	12
Project Vehicle Trips						**22,234**	**458**	**305**	**763**	**849**	**626**	**1,475**
Existing Active Uses												
Retail [a]	31.005	KSF	Equation			3,172	47	29	76	131	142	273
Quality Restaurant[c]	45.094	KSF	89.95	0.81	7.49	4,056	20	17	37	226	112	338
High Turnover Rest. [d]	30.083	KSF	127.15	10.81	9.85	3,825	179	146	325	178	118	296
Office [f]	71.174	KSF	11.03	1.56	1.49	785	98	13	111	18	88	106
Total Trips (base ITE rates)						11,838	344	205	549	553	460	1,013
MXD+ Model calibration of base ITE rates reflecting project & site specific characteristics						-2,154	-81	-49	-130	-175	-145	-320
Existing Vehicle Trips						**9,684**	**263**	**156**	**419**	**378**	**315**	**693**
NET NEW EXTERNAL PROJECT TRIPS						***12,550***	***195***	***149***	***344***	***471***	***311***	***782***

Notes:

[a] Trip generation fitted curve equation for Land Use 820 from *Trip Generation*, 9th *Edition*, Institute of Transportation Engineers, 2012. Existing retail includes the arcade.

[b] Trip generation rate for Land Use 444 from *Trip Generation*, 9th *Edition*, Institute of Transportation Engineers, 2012. For a worst-case weekday analysis, ITE Friday trip generation rates for the movie theater use have been used. For the daily trip rate, the weekday daily rate was obtained from SANDAG's Not So Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (SANDAG, April 2002).

[c] Trip generation rate for Land Use 931 from *Trip Generation*, 9th *Edition*, Institute of Transportation Engineers, 2012

[d] Trip generation rate for Land Use 932 from *Trip Generation*, 9th *Edition*, Institute of Transportation Engineers, 2012. Existing restaurant uses at the project site include a variety of types, include quality restaurant (typically closed for breakfast on weekdays), and high-turnover restaurant (typically open for breakfast). Assumed 60% quality restaurant and 40% high turnover restaurant. Quality restaurants generate fewer trips than high-turnover restaurants, so applying this 60/40 split for the existing uses results in a smaller existing trip generation credit applied to future uses.

[e] Trip generation rate for Land Use 310 from *Trip Generation*, 9th *Edition*, Institute of Transportation Engineers, 2012

[f] Trip generation rate for Land Use 710 from *Trip Generation*, 9th *Edition*, Institute of Transportation Engineers, 2012

[g] Gross leasable area that was occupied at the time baseline traffic counts were collection (Summer 2013, Spring 2014). Because fewer spaces were occupied in Summer 2013, and therefore the trip generation credit for existing uses would be smaller) the summer 2013 GLA data were used.

4.2 PROJECT TRIP DISTRIBUTION

As described in Chapter 1, both the RBTM and the SCAG travel demand models were used to run a select zone analysis for the TAZ that contains the Project, along with the Market Feasibility Analysis Study. Fehr & Peers developed a trip distribution pattern from these model sources, as well as accounting for the hierarchy of streets in the study area, areas of known congestion, and expected travel patterns of the Project based on the economic feasibility study. The trip generation estimates were then assigned to the model roadway network based on this distribution pattern.

The RBTM was also used to evaluate how background traffic, as well as Project traffic would shift due to the Pacific Avenue reconnection.

Project-Only traffic volumes reflecting this trip distribution/assignment pattern are provided in Appendix X-2.

4.3 EXISTING PLUS PROJECT CONDITIONS

Intersection Lane Geometries

The Project will include the modification of several intersections associated with the Pacific Avenue reconnection, as well as the reconfiguration of intersections with Project driveways. These geometric changes are illustrated in Appendix X-1 along with the Existing plus Project traffic volumes. Similar Project-related geometric changes were also applied to the analysis of Project alternatives detailed in Chapter 5. Project related pedestrian and bicycle transportation network changes are summarized below.

Intersection Traffic Volumes

The Project-only AM and PM peak hour traffic volumes described above were added to existing traffic volumes to develop Existing plus Project traffic volumes.

Level of Service Methodologies

The AM and PM peak hour Existing plus Project traffic volumes and intersection lane geometries were analyzed using the same LOS methodologies documented above.

Level of Service Results

Signalized Intersections

Table 8 summarizes the results of the AM and PM peak hour signalized intersection LOS analysis for Existing plus Project conditions. The following four signalized intersections are projected to operate at LOS E or F the PM peak hour under this scenario:

7) PCH/Catalina Avenue & Herondo Street/Anita Street
10) PCH & Catalina Avenue
19) PCH & Beryl Street
36) PCH & 10th/Aviation

To determine the Project's impacts under existing conditions, the City compared (1) the Existing (2013) plus Project Conditions scenario, against (2) the Existing (2013) Conditions scenario. As shown in Table 8, after applying the City of Redondo Beach significant impact criteria detailed in Chapter 1, the Project is expected to result in significant traffic impacts to the following five study intersections under the PM peak hour of Existing plus Project conditions:

7) PCH/Catalina Avenue & Herondo Street/Anita Street
10) PCH & Catalina Avenue
19) PCH & Beryl Street
26) PCH & Torrance Boulevard
36) PCH & Palos Verdes Boulevard

TABLE 8
EXISTING PLUS PROJECT CONDITIONS LEVEL OF SERVICE
SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Existing		Existing plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
4. Harbor Dr/Hermosa Ave & Herondo St	AM	A	0.518	A	0.553	0.035	NO
	PM	A	0.491	B	0.611	0.120	NO
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	AM	D	0.896	E	0.914	0.018	NO
	PM	E	0.989	F	1.037	0.048	**YES**
8. Prospect Ave & Anita St	AM	B	0.679	B	0.689	0.010	NO
	PM	B	0.664	B	0.681	0.017	NO

TABLE 8
EXISTING PLUS PROJECT CONDITIONS LEVEL OF SERVICE
SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Existing		Existing plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
9. Harbor Dr & Yacht Club Way	AM	A	0.352	A	0.386	0.034	NO
	PM	A	0.477	A	0.567	0.090	NO
10. Pacific Coast Hwy & Catalina Ave	AM	D	0.855	D	0.866	0.011	NO
	PM	D	0.883	**E**	**0.906**	0.023	**YES**
11. Harbor Dr & Marina Way	AM	A	0.281	A	0.315	0.034	NO
	PM	A	0.459	A	0.549	0.090	NO
12. Catalina Ave & Gertruda Ave	AM	A	0.371	A	0.384	0.013	NO
	PM	A	0.540	A	0.588	0.048	NO
15. Harbor Dr & Portofino Way/Beryl St	AM	A	0.317	A	0.366	0.049	NO
	PM	A	0.592	B	0.650	0.058	NO
16. Catalina Ave & Beryl St	AM	A	0.374	A	0.402	0.028	NO
	PM	A	0.565	B	0.610	0.045	NO
19. Pacific Coast Hwy & Beryl St	AM	C	0.757	C	0.767	0.010	NO
	PM	**E**	**0.901**	**E**	**0.929**	0.028	**YES**
21. Catalina Ave & Carnelian St	AM	A	0.438	A	0.410	-0.028	NO
	PM	A	0.465	A	0.404	-0.061	NO
22. Catalina Ave & Diamond St	AM	A	0.430	A	0.403	-0.027	NO
	PM	A	0.444	A	0.378	-0.066	NO
23. Catalina Ave & Emerald St	AM	A	0.453	A	0.427	-0.026	NO
	PM	A	0.457	A	0.392	-0.065	NO
24. Pacific Coast Hwy & Garnet St	AM	B	0.691	B	0.693	0.002	NO
	PM	B	0.663	B	0.666	0.003	NO
25. Catalina Ave & Torrance Blvd	AM	A	0.424	A	0.450	0.026	NO
	PM	A	0.475	A	0.516	0.041	NO
26. Pacific Coast Hwy & Torrance Blvd	AM	D	0.818	D	0.829	0.011	NO
	PM	D	0.848	D	0.881	0.033	**YES**
27. Helberta Ave/Camino Real & Torrance Blvd	AM	A	0.476	A	0.482	0.006	NO
	PM	A	0.518	A	0.532	0.014	NO
28. Prospect Ave & Torrance Blvd	AM	D	0.819	D	0.823	0.004	NO
	PM	C	0.742	C	0.751	0.009	NO
29. Catalina Ave & Pearl St	AM	A	0.386	A	0.391	0.005	NO
	PM	A	0.373	A	0.380	0.007	NO

TABLE 8
EXISTING PLUS PROJECT CONDITIONS LEVEL OF SERVICE
SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Existing		Existing plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
31. Pacific Coast Hwy & Sapphire St/Francisca Ave	AM	B	0.611	B	0.620	0.009	NO
	PM	B	0.650	B	0.664	0.014	NO
34. Pacific Coast Hwy & Knob Hill Ave	AM	B	0.655	B	0.663	0.008	NO
	PM	B	0.698	C	0.712	0.014	NO
35. Harbor Dr & Pacific Ave [a]	AM	A	--	A	0.273	--	NO
	PM	A	--	A	0.398	--	NO
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	0.850	D	0.860	0.010	NO
	PM	**E**	**0.957**	**E**	**0.978**	0.021	**YES**
37. Pacific Coast Hwy & 2nd St	AM	B	0.695	C	0.702	0.007	NO
	PM	B	0.696	C	0.715	0.019	NO
38. Pacific Coast Hwy & 10th/Aviation	AM	C	0.777	C	0.783	0.006	NO
	PM	C	0.743	C	0.762	0.019	NO
39. Pacific Coast Hwy & Pier/14th St	AM	A	0.565	A	0.571	0.006	NO
	PM	C	0.703	C	0.723	0.020	NO
40. Pacific Coast Hwy & 16th St	AM	A	0.526	A	0.532	0.006	NO
	PM	B	0.636	B	0.655	0.019	NO
41. Pacific Coast Hwy & Prospect Ave	AM	C	0.704	C	0.711	0.007	NO
	PM	C	0.775	C	0.793	0.018	NO

Note: Intersections operating at LOS E or F are noted in **Bold.**
[a] Harbor Dr & Pacific Ave was not analyzed for Existing Conditions because it will only function as a full intersection with the Project.

Unsignalized Intersections

Table 9 summarizes the results of the AM and PM peak hour unsignalized intersection LOS analysis for Existing plus Project conditions. The following intersection is projected to operate at LOS E or F during both peak hours under this scenario:

13) Catalina Avenue & Francisca Avenue

TABLE 9
EXISTING PLUS PROJECT CONDITIONS LEVEL OF SERVICE
UNSIGNALIZED INTERSECTIONS

Intersection	Traffic Control	Peak Period	Existing		Existing plus Project		Change in Delay (sec)	Significant Impact
			LOS	Delay (sec)	LOS	Delay (sec)		
1. Hermosa Ave & 2nd St	AWSC	AM	B	11.2	B	11.6	0.4	NO
		PM	B	10.5	B	11.4	0.9	NO
2. Monterey Blvd & 2nd St	AWSC	AM	A	8.3	A	8.3	0.0	NO
		PM	A	9.7	A	9.7	0.0	NO
3. Valley Dr & 2nd St	AWSC	AM	A	9.3	A	9.5	0.2	NO
		PM	C	19.3	C	22.0	2.7	NO
5. Monterey Blvd & Herondo St	TWSC	AM	C	15.3	C	16.3	1.0	NO
		PM	C	19.3	C	23.6	4.3	NO
6. Valley Dr/Francisca Ave & Herondo St	AWSC	AM	B	12.7	B	13.3	0.6	NO
		PM	C	23.4	D	29.8	6.4	NO
13. Catalina Ave & Francisca Ave	TWSC	AM	C	17.0	C	18.5	1.5	NO
		PM	**E**	**38.0**	**F**	**51.1**	13.1	NO
14. Catalina Ave & Broadway	TWSC	AM	C	18.1	C	20.0	1.9	NO
		PM	C	24.1	D	30.5	6.4	NO
17. Broadway & Beryl St	TWSC	AM	B	11.8	B	12.4	0.6	NO
		PM	B	12.4	B	13.5	1.1	NO
18. Francisca Ave & Beryl St	TWSC	AM	B	12.2	B	12.6	0.4	NO
		PM	C	18.1	C	20.5	2.4	NO
20. Pacific Ave & Harbor Dr	AWSC	AM	A	7.7	A	7.4	-0.3	NO
		PM	A	8.7	A	8.2	-0.5	NO
30. Camino Real & Pearl St	AWSC	AM	A	8.9	A	9.0	0.1	NO
		PM	A	9.0	A	9.1	0.1	NO
32. Esplanade & Knob Hill Ave	AWSC	AM	A	9.1	A	9.1	0.0	NO
		PM	B	10.4	B	10.4	0.0	NO
33. Catalina Ave & Knob Hill Ave	AWSC	AM	B	11.2	B	11.4	0.2	NO
		PM	B	12.5	B	13.0	0.5	NO

AWSC = All-way stop control TWSC = 2-way stop control

Note: For unsignalized intersections, the worst case approach delay for two-way stop controlled, and average intersection delay for all-way stop controlled is reported.

Intersections operating at LOS E or F are noted in **Bold**.

Under Existing plus Project conditions, intersection 6 (Valley Dr/Francisca Ave & Herondo Street) is expected to operate at LOS D. Because it would operate at this LOS standard, the Project's impact on this intersection would not be considered significant, though the intersection does meet the peak hour signal warrant. At Intersection 13 (Catalina Ave & Francisca Ave), the delay increase associated with the addition of Project trips is expected to degrade the LOS from LOS E to LOS F. However, because the intersection does not meet the peak hour signal warrant, the Project's impact would not be considered significant. Signal warrant results are detailed in Appendix X-5.

City of Torrance Analysis

As shown above in Table 8, Intersection 36 (Pacific Coast Highway & Palos Verdes Boulevard) is expected to operate at LOS D in the AM peak hour, and LOS E in the PM peak hour under Existing plus Project Conditions using the ICU methodology. The Project-incremental increase in the ICU ratio is 0.021, therefore, as with the impact analysis using the City of Redondo Beach criteria, the intersection is expected to have a significant PM peak hour impact. The AM peak hour would not be significantly impacted using the City of Torrance's ICU impact criteria. Intersection 41 (Prospect Avenue & Pacific Coast Highway) is expected to operate at LOS C in both the AM and PM peak hour under Existing plus Project conditions using the ICU methodology. Therefore no significant Project related impact is expected at that intersection.

Per City of Torrance methodology, HCM signalized analysis was also conducted. Table 10 presents the results. Based on Torrance impact criteria for the HCM signalized methodology, a significant Project impact is also expected in the PM peak hour at Intersection 36.

TABLE 10
EXISTING PLUS PROJECT CONDITIONS LEVEL OF SERVICE
SIGNALIZED INTERSECTIONS IN CITY OF TORRANCE (HCM METHODOLOGY)

Intersection	Peak Period	Existing		Existing plus Project		Change in Delay	Significant Impact?
		LOS	Delay	LOS	Delay		
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	48.8	D	50.6	1.8	NO
	PM	**E**	**68.4**	**E**	**76.2**	7.8	**YES**
41. Pacific Coast Hwy & Prospect Ave	AM	C	30.3	C	30.6	0.3	NO
	PM	C	34.0	D	36.1	2.1	NO

Note: Intersections operating at LOS E or F are noted in **Bold.**

LOS worksheets for both the HCM and ICU methodologies are included in Appendix X-4.

Existing plus Project CMP analysis are included below in Section 4.5

4.4 CUMULATIVE PLUS PROJECT CONDITIONS

Intersection Lane Geometries

In addition to the Cumulative without Project intersection geometry changes detailed in Chapter 3, the Project will include the modification of several intersections associated with the Pacific Avenue reconnection, as well as the reconfiguration of intersections with Project driveways. These geometric changes are illustrated in Appendix X-2. Project-related pedestrian and bicycle transportation network changes are summarized below.

Intersection Traffic Volumes

The Project-only AM and PM peak hour traffic volumes described above were added to Cumulative without Project traffic volumes to develop Cumulative plus Project traffic volumes.

Level of Service Methodologies

The AM and PM peak hour Cumulative plus Project traffic volumes and intersection lane geometries were analyzed using the same LOS methodologies documented above.

Level of Service Results

Signalized Intersections

Table 11 summarizes the results of the AM and PM peak hour signalized intersection LOS analysis for Cumulative plus Project conditions. Based on the analysis, the following five signalized intersections are projected to operate at LOS E or F during one or both peak hours under this scenario:

7) PCH/Catalina Avenue & Herondo Street/Anita Street (both peak hours)
10) PCH & Catalina Avenue (PM peak hour)
19) PCH & Beryl Street (PM peak hour)
26) PCH & Torrance Boulevard (PM peak hour)
36) PCH & Palos Verdes Boulevard (PM peak hours

To determine the Project's impacts under cumulative conditions, the City compared: (1) the Cumulative plus Project Conditions (2019) scenario, against (2) the Cumulative Conditions (2019) Without Project scenario. As shown in Table 11, after applying the City of Redondo Beach significant impact criteria detailed in Chapter 1 the Project is expected to result in significant traffic impacts to the following five study intersections under Cumulative plus Project conditions:

7) PCH/Catalina Avenue & Herondo Street/Anita Street (both peak hours)

10) PCH & Catalina Avenue (PM peak hour)

19) PCH & Beryl Street (PM peak hour)

26) PCH & Torrance Boulevard (PM peak hour)

36) PCH & Palos Verdes Boulevard (PM peak hour)

TABLE 11
CUMULATIVE PLUS PROJECT CONDITIONS LEVEL OF SERVICE
SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Cumulative		Cumulative plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
4. Harbor Dr/Hermosa Ave & Herondo St	AM	A	0.528	A	0.563	0.035	NO
	PM	A	0.504	B	0.623	0.119	NO
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	AM	**E**	**0.918**	**E**	**0.936**	0.018	**YES**
	PM	**F**	**1.022**	**F**	**1.070**	0.048	**YES**
8. Prospect Ave & Anita St	AM	B	0.689	B	0.700	0.011	NO
	PM	B	0.678	B	0.695	0.017	NO
9. Harbor Dr & Yacht Club Way	AM	A	0.358	A	0.392	0.034	NO
	PM	A	0.488	A	0.578	0.090	NO
10. Pacific Coast Hwy & Catalina Ave	AM	D	0.878	D	0.889	0.011	NO
	PM	**E**	**0.912**	**E**	**0.934**	0.022	**YES**
11. Harbor Dr & Marina Way	AM	A	0.286	A	0.319	0.033	NO
	PM	A	0.471	A	0.561	0.090	NO
12. Catalina Ave & Gertruda Ave	AM	A	0.377	A	0.389	0.012	NO
	PM	A	0.551	A	0.599	0.048	NO
15. Harbor Dr & Portofino Way/Beryl St	AM	A	0.321	A	0.371	0.050	NO
	PM	B	0.602	B	0.661	0.059	NO
16. Catalina Ave & Beryl St	AM	A	0.384	A	0.410	0.026	NO
	PM	A	0.598	B	0.643	0.045	NO
19. Pacific Coast Hwy & Beryl St	AM	C	0.777	C	0.787	0.010	NO
	PM	**E**	**0.932**	**E**	**0.960**	0.028	**YES**
21. Catalina Ave & Carnelian St	AM	A	0.445	A	0.416	-0.029	NO
	PM	A	0.472	A	0.411	-0.061	NO
22. Catalina Ave & Diamond St	AM	A	0.438	A	0.410	-0.028	NO
	PM	A	0.451	A	0.383	-0.068	NO

TABLE 11
CUMULATIVE PLUS PROJECT CONDITIONS LEVEL OF SERVICE
SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Cumulative		Cumulative plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
23. Catalina Ave & Emerald St	AM	A	0.459	A	0.432	-0.027	NO
	PM	A	0.465	A	0.398	-0.067	NO
24. Pacific Coast Hwy & Garnet St	AM	C	0.711	C	0.712	0.001	NO
	PM	B	0.686	B	0.689	0.003	NO
25. Catalina Ave & Torrance Blvd	AM	A	0.431	A	0.458	0.027	NO
	PM	A	0.483	A	0.525	0.042	NO
26. Pacific Coast Hwy & Torrance Blvd	AM	D	0.848	D	0.860	0.012	NO
	PM	D	0.892	**E**	**0.925**	0.033	**YES**
27. Helberta Ave/Camino Real & Torrance Blvd	AM	A	0.487	A	0.493	0.006	NO
	PM	A	0.534	A	0.547	0.013	NO
28. Prospect Ave & Torrance Blvd	AM	D	0.834	D	0.838	0.004	NO
	PM	C	0.755	C	0.764	0.009	NO
29. Catalina Ave & Pearl St	AM	A	0.392	A	0.396	0.004	NO
	PM	A	0.379	A	0.386	0.007	NO
31. Pacific Coast Hwy & Sapphire St/Francisca Ave	AM	B	0.635	B	0.644	0.009	NO
	PM	B	0.678	B	0.692	0.014	NO
34. Pacific Coast Hwy & Knob Hill Ave	AM	B	0.682	B	0.691	0.009	NO
	PM	C	0.736	C	0.750	0.014	NO
35. Harbor Dr & Pacific Ave [a]	AM	A	--	A	0.277	--	NO
	PM	A	--	A	0.404	--	NO
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	0.877	D	0.887	0.010	NO
	PM	F	1.001	F	1.024	0.023	**YES**
37. Pacific Coast Hwy & 2nd St	AM	C	0.707	C	0.714	0.007	NO
	PM	C	0.717	C	0.737	0.020	NO
38. Pacific Coast Hwy & 10th/Aviation	AM	C	0.792	C	0.798	0.006	NO
	PM	C	0.757	C	0.776	0.019	NO
39. Pacific Coast Hwy & Pier/14th St	AM	A	0.574	A	0.581	0.007	NO
	PM	C	0.717	C	0.737	0.020	NO
40. Pacific Coast Hwy & 16th St	AM	A	0.536	A	0.543	0.007	NO
	PM	B	0.647	B	0.667	0.020	NO
41. Pacific Coast Hwy & Prospect Ave	AM	C	0.724	C	0.732	0.008	NO
	PM	D	0.803	D	0.820	0.017	NO

TABLE 11 CUMULATIVE PLUS PROJECT CONDITIONS LEVEL OF SERVICE SIGNALIZED INTERSECTIONS							
Intersection	**Peak Period**	**Cumulative**		**Cumulative plus Project**		**Change in V/C**	**Significant Impact?**
		LOS	**V/C**	**LOS**	**V/C**		
Note: Intersections operating at LOS E or F are noted in **Bold.** [a] Harbor Dr & Pacific Ave was not analyzed for Cumulative without Project Conditions because it will only function as a full intersection with the Project.							

Unsignalized Intersections

Table 12 summarizes the results of the AM and PM peak hour unsignalized intersection LOS analysis for Cumulative plus Project conditions. The following two intersections are projected to operate at LOS E or F during the PM peak hour under this scenario:

6) Valley Drive/Francisca Avenue & Herondo Street
13) Catalina Avenue & Francisca Avenue

TABLE 12
CUMULATIVE PLUS PROJECT CONDITIONS LEVEL OF SERVICE
UNSIGNALIZED INTERSECTIONS

Intersection	Traffic Control	Peak Period	Cumulative		Cumulative plus Project		Change in Delay (sec)	Significant Impact
			LOS	Delay (sec)	LOS	Delay (sec)		
1. Hermosa Ave & 2nd St	AWSC	AM	B	11.4	B	11.9	0.5	NO
		PM	B	10.6	B	11.6	1.0	NO
2. Monterey Blvd & 2nd St	AWSC	AM	A	8.3	A	8.4	0.1	NO
		PM	A	9.7	A	9.8	0.1	NO
3. Valley Dr & 2nd St	AWSC	AM	A	9.4	A	9.6	0.2	NO
		PM	C	20.5	C	23.7	3.2	NO
5. Monterey Blvd & Herondo St	TWSC	AM	C	15.6	C	16.7	1.1	NO
		PM	C	20.0	C	24.7	4.7	NO
6. Valley Dr/Francisca Ave & Herondo St	AWSC	AM	C	16.6	C	19.1	2.5	NO
		PM	**E**	**43.3**	**F**	**53.1**	**9.8**	**YES**
13. Catalina Ave & Francisca Ave	TWSC	AM	C	17.4	C	19.0	1.6	NO
		PM	**E**	**40.3**	**F**	**54.9**	**14.6**	NO
14. Catalina Ave & Broadway	TWSC	AM	C	18.7	C	20.6	1.9	NO
		PM	D	25.3	D	32.2	6.9	NO

TABLE 12
CUMULATIVE PLUS PROJECT CONDITIONS LEVEL OF SERVICE
UNSIGNALIZED INTERSECTIONS

Intersection	Traffic Control	Peak Period	Cumulative		Cumulative plus Project		Change in Delay (sec)	Significant Impact
			LOS	Delay (sec)	LOS	Delay (sec)		
17. Broadway & Beryl St	TWSC	AM	B	11.9	B	12.5	0.6	NO
		PM	B	12.5	B	13.7	1.2	NO
18. Francisca Ave & Beryl St	TWSC	AM	B	12.3	B	12.8	0.5	NO
		PM	C	18.5	C	21.1	2.6	NO
20. Pacific Ave & Harbor Dr	AWSC	AM	A	7.7	A	7.4	-0.3	NO
		PM	A	8.7	A	8.2	-0.5	NO
30. Camino Real & Pearl St	AWSC	AM	A	9.0	A	9.0	0.0	NO
		PM	A	9.1	A	9.1	0.0	NO
32. Esplanade & Knob Hill Ave	AWSC	AM	A	9.2	A	9.2	0.0	NO
		PM	B	10.6	B	10.6	0.0	NO
33. Catalina Ave & Knob Hill Ave	AWSC	AM	B	11.5	B	11.7	0.2	NO
		PM	B	13.1	B	13.6	0.5	NO

AWSC = All-way stop control TWSC = 2-way stop control

Note: For unsignalized intersections, the worst case approach delay for two-way stop controlled, and average intersection delay for all-way stop controlled is reported.

Intersections operating at LOS E or F are noted in **Bold**.

Under Cumulative plus Project conditions, Intersection 6 (Valley Dr/Francisco Ave & Herondo Street) is expected to operate at LOS F with the Project (degrading from LOS E under Cumulative Base conditions). Because it would operate at an LOS F, and the intersection does meet the peak hour signal warrant, the Project impact at the intersection is considered to be significant. At Intersection 13 (Catalina Ave & Francisca Ave), the delay increase associated with the addition of Project trips is expected to degrade the LOS from LOS E to LOS F. However, because the intersection does not meet the peak hour signal warrant, the Project's impact would not be considered significant.

LOS worksheets for both signalized and unsignalized intersections are provided in Appendix X-4-E.

To determine whether the addition of Project volumes are the primary reason that the peak hour signal warrant is met for Intersection 6, Existing and Cumulative Base traffic volumes were also tested. The signal meets signal warrants in all three scenarios, indicating that the Project alone does not trigger the signal warrant to be met. Meeting a signal warrant in and of itself does not indicate that a traffic signal should be

installed. Site specific considerations, and engineering judgment should be used to determine the benefits of a traffic signal in that location. Signal warrant worksheets are provided in Appendix X-5.

City of Torrance Analysis

As shown above in Table 11, Intersection 36 (Pacific Coast Highway & Palos Verdes Boulevard) is expected to operate at LOS D in the AM peak hour, and LOS F in the PM peak hour under Cumulative plus Project Conditions using the ICU methodology. The Project-incremental increase in the ICU ratio is 0.023, therefore, as with the impact analysis using the City of Redondo Beach criteria, the intersection is expected to have a significant PM peak hour impact. At Intersection 41 (Prospect Avenue & Pacific Coast Highway), the intersection is expected to operate at LOS D or better during both peak hours, so no significant project impact is expected.

Per City of Torrance methodology, HCM signalized analysis was also conducted. Table 13 presents the results for Cumulative plus Project conditions. Based on Torrance impact criteria for the HCM signalized methodology, a significant Project impact is also expected in the PM peak hour at Intersection 36. Following typical analysis practice, the Cumulative analysis includes the optimization of signal timing splits for the Cumulative without Project scenario.

TABLE 13
CUMULATIVE PLUS PROJECT CONDITIONS LEVEL OF SERVICE
SIGNALIZED INTERSECTIONS IN CITY OF TORRANCE (HCM METHODOLOGY)

Intersection	Peak Period	Cumulative		Cumulative plus Project		Change in Delay	Significant Impact?
		LOS	Delay	LOS	Delay		
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	52.5	D	54.3	1.8	NO
	PM	**E**	**70.3**	**E**	**76.3**	6.0	**YES**
41. Pacific Coast Hwy & Prospect Ave	AM	C	31.1	C	31.5	0.4	NO
	PM	D	35.3	D	37.8	2.5	NO

Note: Intersections operating at LOS E or F are noted in **Bold.**

LOS worksheets for both the HCM and ICU methodologies are included in Appendix X-4.

Existing/Cumulative plus Project Pedestrian & Bicycle Conditions

As described in Chapter 1, the proposed Project will revitalize the Waterfront area in the City of Redondo Beach with expanded local and visitor serving commercial uses. A major component of the Project is improved site connectivity between the Pier and Harbor area with resident and visitor serving uses to the east. Site connectivity improvements include new pedestrian and bicycle pathways, many of which are

separated from vehicular traffic, a new pedestrian bridge across the Redondo Beach Marina Basin 3 entrance, and the reconnection of Pacific Avenue to Coral Way south of the Waterfront area.

Within the City of Redondo Beach, the highest bicycle and pedestrian volumes occur along the Waterfront where existing bicycle facilities are located, there are numerous pedestrian generators, and relatively safe conditions for bicycling and walking including one-lane vehicle travel, slow speeds, on-street parking, wide sidewalks, and car-free zones. The proposed Project is expected to further enhance the bicycle and pedestrian environment, providing even more favorable conditions for bicycling and walking.

The Pacific Avenue reconnection will convert an existing car-free, pedestrian-only facility into a full-access roadway for vehicles, bicyclists, and pedestrians with sidewalks and a marked crossing. The provision of high-quality crossings and other new pedestrian facilities, including new pedestrian pathways and a pedestrian bridge across Basin 3, enhance access. Additionally, the character and mix of uses included in the proposed Project are compatible with pedestrian-oriented areas. Visitors to the proposed Project arriving on foot, or those choosing to circulate around the Project on foot after having parked, will be able to utilize wide sidewalks provided throughout the Project and particularly along the Pacific Avenue reconnection and an enhanced crosswalk. Project would add vehicular traffic to new pedestrian crossing points, but the added traffic would not exceed the capacity of these facilities based on their design, and this additional traffic would not be expected to add significant delay for pedestrians due to the addition of Project traffic. Pedestrian crossings along the Pacific Avenue reconnection will provide sufficient capacity to accommodate the added pedestrian volumes based on the design of those facilities. The Project would also create a more typical four-way perpendicular intersection geometry for the intersection of Pacific Avenue and Harbor Drive compared with the existing condition, which has a near 270 degree turn from southbound Harbor Drive to northbound Pacific Avenue.

Visitors to the proposed Project arriving by bicycle may utilize existing bicycle facilities on Harbor Drive, Catalina Avenue, Diamond Street, and through Veterans Park. A Class IV cycle track was recently completed as part of the Herondo Gateway project. It will be extended through the proposed Project along the Pacific Avenue reconnection to connect to the existing Class I bicycle path in Veterans Park, providing high-quality bicycle facilities along the Waterfront where today there are none.

As described above, the Project is expected to enhance both existing and planned pedestrian and bicycle facilities through and adjacent to the Project Site. While the Project will introduce new vehicular crossing locations for pedestrian associated with the Pacific Avenue reconnection, and additional driveway locations on Harbor Drive, these crossing locations will be designed to applicable standards and best practices, and will include elements such as high visibility crosswalk markings at all crossing locations, and raised crosswalks (where feasible). The Project will substantially enhance pedestrian and bicycle circulation through

the Project site through several design features. Therefore, the Project is not expected to significantly impact pedestrian and bicycle modes.

4.5 CONGESTION MANAGEMENT PROGRAM IMPACT ANALYSIS

Several analyses were also conducted to comply with the Los Angeles County CMP requirements. The first section of this chapter presents a regional analysis to quantify potential impacts of the proposed Project on the regional freeway system serving the Project area, including impacts on the I-405 CMP freeway monitoring locations, and CMP intersection monitoring stations included in the Los Angeles County CMP road network. The second section includes a transit analysis that quantifies the estimated transit demand and potential impacts of the proposed Project on the regional transit system.

CMP Arterial Intersection Analysis

Two study area intersections are CMP arterial monitoring stations:

- Intersection #26 - Pacific Coast Highway & Torrance Boulevard
- Intersection #36 - Pacific Coast Highway & Palos Verdes Boulevard

Pacific Coast Highway & Torrance Boulevard is located southeast of the proposed Project site. Based on the Project trip distribution and trip generation, 80 AM peak hour Project trips and 172 PM peak hour trips would be traversing through this monitoring station during either peak hour.

Pacific Coast Highway & Palos Verdes Boulevard is located south of the proposed Project site. Based on the Project trip distribution and trip generation, 50 AM peak hour Project trips and 113 PM peak hour trips would be traversing through this monitoring station during either peak hour. Based on the screening criterion detailed above (Section 1.4), both intersections were analyzed in this report at a greater level of detail.

Tables 14A and 14B detail the LOS analysis and CMP impact analysis for these two intersections. Neither intersection would be impacted under Existing plus Project conditions based on CMP impact criteria, since the intersections would operate at LOS E or better.

Under Cumulative plus Project conditions, Intersection 26 (Pacific Coast Highway & Torrance Boulevard) is expected to operate at LOS E during the PM peak hour, and increase the V/C ratio by 0.033 (3.3%). However, because the intersection is expected to operate at LOS E there would be no significant impact at this intersection using CMP impact criteria. Intersection 36 (Pacific Coast Highway & Palos Verdes Boulevard) is expected to operate at LOS F in the PM peak hour, and the Project is expected to increase the V/C ratio by

0.023 (2.3%), therefore a significant CMP impact is anticipated at this location. A mitigation measure for this location is discussed below that would mitigate the Project impact to a level below significance.

TABLE 14A
EXISTING PLUS PROJECT CONDITIONS LEVEL OF SERVICE
CMP INTERSECTION IMPACT ANALYSIS

Intersection	Peak Period	Existing		Existing plus Project		Change in V/C	Significant CMP Impact
		LOS	V/C	LOS	V/C		
26. Pacific Coast Hwy & Torrance Blvd	AM	D	0.818	D	0.829	0.011	NO
	PM	D	0.848	D	0.881	0.033	NO
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	0.850	D	0.860	0.010	NO
	PM	**E**	**0.957**	**E**	**0.978**	0.021	NO

TABLE 14B
CUMULATIVE PLUS PROJECT CONDITIONS LEVEL OF SERVICE
CMP INTERSECTION IMPACT ANALYSIS

Intersection	Peak Period	Cumulative		Cumulative plus Project		Change in V/C	Significant CMP Impact
		LOS	V/C	LOS	V/C		
26. Pacific Coast Hwy & Torrance Blvd	AM	D	0.848	D	0.860	0.012	NO
	PM	D	0.892	**E**	**0.925**	0.033	NO
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	0.877	D	0.887	0.010	NO
	PM	**F**	**1.001**	**F**	**1.024**	0.023	**YES**

CMP Freeway Analysis

A regional analysis was conducted to quantify potential impacts of the Project traffic on the regional freeway system serving the Project area. One freeway mainline CMP monitoring location was identified near the proposed Project site, I-405 Freeway at Artesia Boulevard, according to 2010 Congestion Management Program for Los Angeles County.

Intersection #8 (Prospect Avenue & Anita Street) is the study area intersection located closest to the I-405 freeway. There are 59 AM peak hour trips and 133 PM peak hour Project trips that are forecast to traverse through this intersection. Of the Project's total 344 AM peak hour and 782 PM peak hour Project trips, less than 150 would be traversing through this intersection, and therefore even fewer trips would travel through

the CMP freeway monitoring location on the I-405 freeway in either direction, during either peak hour. The proposed Project would not add enough new traffic to exceed the freeway analysis criteria of 150 vehicle trips at the aforementioned location. Therefore, impacts would be less than significant and no further CMP freeway analysis is required.

Analysis of Caltrans freeway facilities, including both ramp and mainline segments are included in Appendix X-6.

Regional Transit Impact Analysis

Section D.8.4 of the CMP provides a methodology for estimating the number of transit trips expected to result from a proposed project based on the number of vehicle trips. This methodology assumes an average vehicle ridership (AVR) factor of 1.4 in order to estimate the number of person trips to and from the project.

The Los Angeles County CMP defines a transit center as a fixed facility supporting passenger loading, containing a passenger rail station and served by at least eight transit lines. The nearest designated CMP transit center is the Marine Station of the Metro Green Line System, over three miles from the Project site. Therefore, the Project is not within ¼ mile of a CMP transit center, multi-modal transportation center, or CMP transit corridor. The CMP allows for the assignment of 3.5% of person trips to transit for residential and commercial developments not within ¼ mile of a designated CMP transit facility such as those described above.

As discussed above, the Project is anticipated to generate 344 and 782 peak hour vehicle trips in the AM and PM peak hours, respectively (excluding boat launch ramp trips, which cannot be made via transit). Using the prescribed approach in the CMP, this totals 462 and 1,144 peak hour person trips in the AM and PM peak hours, respectively. Applying a 3.5% of total person trips generated to transit trips results in approximately 17 AM peak hour person transit trips and approximately 38 PM peak hour transit trips on weekdays.

October 2014 Ridership data on the two Metro operated lines that serve the study area were reviewed. At the closest stop to the Project site, Line 130 had a maximum load of 9 passengers, and Line 232 had a maximum load of 23 passengers, less than half the seated capacity of a standard Metro bus. Even if all of the Project transit trips were added to these two lines alone (and not all of the other municipal operators that serve the study area), the capacity of the vehicles would not be exceeded, and therefore no significant impact is expected. Transit service providers routinely adjust service up to two times a year to reflect demand. If the Project generates additional demand beyond these estimates in the future, transit service would likely be adjusted to accommodate it. Additional transit riders would increase farebox recovery on transit lines, and therefore the Project generated transit riders would help to fund the service.

At this level of increase, Project-related impacts on the regional transit system are not significant.

4.6 MITIGATION MEASURES

The following details the measures developed to mitigate significant Project impacts. To the extent these mitigation measures are not adopted, impacts would remain significant and unavoidable.

- Valley Drive/Francisca Avenue & Herondo Street (Intersection 6) – A traffic signal would be installed at this intersection to mitigate significant Project impacts under Cumulative plus Project conditions. The intersection is not considered to be significantly impacted under Existing plus Project conditions.

  Pacific Coast Highway & Herondo/Anita Street (Intersection 7) – Under this mitigation measure, an additional westbound and eastbound through lane would be added. For the westbound approach, the center raised median would be narrowed or eliminated. The two westbound left turn lanes would be shifted to the south to accommodate the additional westbound through lane. An additional westbound receiving lane would be added extending for a minimum of half a block length to the west of Intersection 7. The additional eastbound through lane would need to extend for a minimum of half the block length to the west of Intersection 7. The on-street angled parking on Herondo Street conflicts with the additional eastbound and westbound lane, and will require its removal. Parking will be replaced at 1:1 ratio to the satisfaction of the City Engineer. In addition, the on-street bike lanes would be shifted from their current location, but can be accommodated with the addition of the two through lanes.

  These measures would fully mitigate the AM and PM peak hour Project impact under Existing plus Project and Cumulative plus Project conditions.

- Pacific Coast Highway & Catalina Avenue (Intersection 10) – One additional eastbound left turn lane would be added to provide two left turn lanes onto Pacific Coast Highway northbound. The intersection would also be restriped to provide one shared left-right lane, for a total of three lanes on the eastbound approach.

  These measures would fully mitigate the PM peak hour Project impact under Existing plus Project and Cumulative plus Project conditions.

- Pacific Coast Highway & Beryl Street (Intersection 19) -The proposed mitigation measure would add a southbound dedicated right-turn lane. This additional lane would encroach into the existing sidewalk right-of-way of the Gertruda Avenue cul-de-sac, and require the removal of mature trees that line the western side of the street. The sidewalk would need to be reconstructed to the west of its current location, which would narrow the end of the cul-de-sac.

  This measure would fully mitigate the significant PM peak hour Project impact under Existing plus Project and Cumulative plus Project conditions.

- Pacific Coast Highway & Torrance Boulevard Avenue (Intersection 26) -A northbound, and an eastbound right-turn lane would be added at this intersection to mitigate the Project's impact. The northbound right-turn lane is an approved Project identified as mitigation from a prior Project in the City, and therefore, the applicant would provide a fair share contribution for this improvements. The eastbound right-turn lane would be fully-funded by the Project. The eastbound right-turn lane can be accommodated through restriping the outer eastbound lane on Torrance Boulevard, which measures 24'.

  This mitigation would fully mitigate the impact at this intersection.

- Pacific Coast Highway & Palos Verdes Drive (Intersection 36) -This mitigation measure would add a southbound right-turn lane. The applicant shall provide a fair share percentage of contribution to this mitigation measure along with other development projects that would impact this intersection.

  This mitigation would fully mitigate the impact at this intersection based on the analysis with the ICU methodology for Existing plus Project and Cumulative plus Project conditions using Redondo Beach, CMP, and City of Torrance criteria. Appendix X-6 contains the analysis results using the HCM signalized intersection methodology. The mitigation measure is expected to reduce average delay at the intersection to levels below baseline conditions (both Existing and the Cumulative Base) and would therefore fully mitigate the impact based on City of Torrance impact criteria for the HCM analysis methodology.

Tables 15 and 16 present the intersection LOS results for the Mitigated Existing plus Project and Cumulative plus Project scenarios using the ICU methodology, which is also applicable for the CMP analysis. Under Existing plus Project and Cumulative plus Project, the mitigation measures would be sufficient to fully mitigate the Project impact using the ICU methodology, which is also applicable for the CMP analysis..

Tables 17 and 18 present the results of the testing of the mitigation measure at Intersection 36 (Pacific Coast Highway & Palos Verdes Boulevard) using the HCM signalized methodology as required by the City of Torrance. As shown in the table, the mitigation measure fully mitigates the Project's PM peak hour significant impact in both Existing plus Project and Cumulative plus Project conditions.

TABLE 15
EXISTING PLUS PROJECT PLUS MITIGATION
LEVEL OF SERVICE & IMPACT ANALYSIS (ICU METHODOLOGY)

Intersection	Peak Period	Existing		Existing plus Project plus Mitigation		Change in V/C	Significant and Unavoidable Impact?
		LOS	V/C	LOS	V/C		
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	AM	D	0.896	D	0.896	0.000	NO
	PM	E	0.989	E	0.948	-0.041	NO
10. Pacific Coast Hwy & Catalina Ave	AM	D	0.855	C	0.799	-0.056	NO
	PM	D	0.883	D	0.856	-0.027	NO
19. Pacific Coast Hwy & Beryl St	AM	C	0.757	C	0.767	0.010	NO
	PM	**E**	**0.901**	**E**	**0.908**	0.007	NO
26. Pacific Coast Hwy & Torrance Blvd	AM	D	0.818	C	0.792	-0.026	NO
	PM	D	0.848	D	0.849	0.001	NO
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	0.850	D	0.815	-0.035	NO
	PM	**E**	**0.957**	D	0.867	-0.090	NO

Note: Intersections operating at LOS E or F are noted in **Bold.**

TABLE 16
CUMULATIVE PLUS PROJECT PLUS MITIGATION
LEVEL OF SERVICE & IMPACT ANALYSIS (ICU METHODOLOGY)

Intersection	Peak Period	Cumulative		Cumulative plus Project plus Mitigation		Change in V/C	Significant and Unavoidable Impact?
		LOS	V/C	LOS	V/C		
6. Valley Dr/Francisca Ave & Herondo St	AM	C	16.6	A	0.496	--	NO
	PM	**E**	**43.3**	C	0.743	--	NO
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	AM	E	0.918	E	0.919	0.001	NO
	PM	F	1.022	E	0.978	-0.044	NO
10. Pacific Coast Hwy & Catalina Ave	AM	D	0.878	D	0.820	-0.058	NO
	PM	E	0.912	D	0.883	-0.029	NO
19. Pacific Coast Hwy & Beryl St	AM	C	0.777	C	0.787	0.010	NO
	PM	E	0.932	E	0.938	0.006	NO
26. Pacific Coast Hwy & Torrance Blvd	AM	D	0.848	D	0.818	-0.030	NO
	PM	D	0.892	D	0.891	-0.001	NO
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	0.878	D	0.849	-0.029	NO
	PM	E	0.997	E	0.905	-0.092	NO

Note: Intersections operating at LOS E or F are noted in **Bold.**

TABLE 17
EXISTING PLUS PROJECT PLUS MITIGATION
LEVEL OF SERVICE & IMPACT ANALYSIS (HCM METHODOLOGY)

Intersection	Peak Period	Existing		Existing plus Project plus Mitigation		Change in Delay	Significant and Unavoidable Impact?
		LOS	Delay	LOS	Delay		
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	--	--	--	--	--	--
	PM	E	68.4	D	50.2	-18.2	NO

Note: Intersections operating at LOS E or F are noted in **Bold.**

TABLE 18
CUMULATIVE PLUS PROJECT PLUS MITIGATION
LEVEL OF SERVICE & IMPACT ANALYSIS (HCM METHODOLOGY)

Intersection	Peak Period	Cumulative		Cumulative plus Project plus Mitigation		Change in Delay	Significant and Unavoidable Impact
		LOS	Delay	LOS	Delay		
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	--	--	--	--	--	--
	PM	E	70.3	E	57.1	-13.2	NO

Note: Intersections operating at LOS E or F are noted in **Bold.**

5. PROJECT ALTERNATIVES IMPACT ANALYSIS

This chapter summarizes the impact analyses prepared to evaluate various Project alternatives. Discussion of the various impact areas is included when the alternatives vary from the analysis of the Project. Otherwise, the conclusions of the Project analysis above, also apply to the various Project alternatives.

5.1 NO PACIFIC AVENUE RECONNECTION (ALTERNATIVE 5)

This alternative includes the full buildout of the Project, but without the Pacific Avenue Reconnection. This alternative maintains a similar distribution pattern as the existing site (as opposed to the Project which is expected to shift Project trips and background trips due to the Pacific Avenue reconnection).

Level of Service Results

Tables 19 and 20 present the signalized and unsignalized intersection analysis for Existing plus Project (No Pacific Avenue Reconnection) conditions. Tables 21 and 22 present the signalized and unsignalized intersection analysis for Cumulative plus Project (No Pacific Avenue Reconnection) conditions. Compared with the Project scenarios (with the Pacific Avenue Reconnection), the V/C ratios on intersections along Catalina Avenue are higher (since there are more Project trips and background traffic on Catalina Avenue without the Pacific Avenue reconnection), indicating slightly worse operating conditions on Catalina Avenue if this Project alternative is selected. Intersection 6 (Valley Drive/Francisca Ave & Herondo Street) is impacted under Existing plus Project conditions with this alternative (it was not impacted by the proposed Project under Existing plus Project conditions), but there are otherwise no changes to the number and location of significant traffic impacts with this alternative compared with the Project scenarios. LOS worksheets for these scenarios are provided in Appendix X-4. The results of this alternative for the CMP analysis, City of Torrance analysis, or Caltrans analysis are not expected to materially differ from the Project for those analyses.

TABLE 19
EXISTING PLUS PROJECT ALTERNATIVE 5 (NO PACIFIC AVENUE RECONNECTION) CONDITIONS
LEVEL OF SERVICE – SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Existing		Existing plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
4. Harbor Dr/Hermosa Ave & Herondo St	AM	A	0.518	A	0.552	0.034	NO
	PM	A	0.491	A	0.595	0.104	NO
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	AM	D	0.896	**E**	**0.914**	0.018	NO
	PM	**E**	**0.989**	**F**	**1.037**	0.048	**YES**
8. Prospect Ave & Anita St	AM	B	0.679	B	0.689	0.010	NO
	PM	B	0.664	B	0.681	0.017	NO
9. Harbor Dr & Yacht Club Way	AM	A	0.352	A	0.378	0.026	NO
	PM	A	0.477	A	0.544	0.067	NO
10. Pacific Coast Hwy & Catalina Ave	AM	D	0.855	D	0.866	0.011	NO
	PM	D	0.883	**E**	**0.906**	0.023	**YES**
11. Harbor Dr & Marina Way	AM	A	0.281	A	0.307	0.026	NO
	PM	A	0.459	A	0.525	0.066	NO
12. Catalina Ave & Gertruda Ave	AM	A	0.371	A	0.391	0.020	NO
	PM	A	0.540	B	0.619	0.079	NO
15. Harbor Dr & Portofino Way/Beryl St	AM	A	0.317	A	0.345	0.028	NO
	PM	A	0.592	B	0.667	0.075	NO
16. Catalina Ave & Beryl St	AM	A	0.374	A	0.414	0.040	NO
	PM	A	0.565	B	0.675	0.110	NO
19. Pacific Coast Hwy & Beryl St	AM	C	0.757	C	0.771	0.014	NO
	PM	**E**	**0.901**	**E**	**0.941**	0.040	**YES**
21. Catalina Ave & Carnelian St	AM	A	0.438	A	0.453	0.015	NO
	PM	A	0.465	A	0.502	0.037	NO
22. Catalina Ave & Diamond St	AM	A	0.430	A	0.450	0.020	NO
	PM	A	0.444	A	0.486	0.042	NO
23. Catalina Ave & Emerald St	AM	A	0.453	A	0.468	0.015	NO
	PM	A	0.457	A	0.495	0.038	NO
24. Pacific Coast Hwy & Garnet St	AM	B	0.691	B	0.695	0.004	NO
	PM	B	0.663	B	0.672	0.009	NO
25. Catalina Ave & Torrance Blvd	AM	A	0.424	A	0.440	0.016	NO
	PM	A	0.475	A	0.516	0.041	NO
26. Pacific Coast Hwy & Torrance Blvd	AM	D	0.818	D	0.829	0.011	NO
	PM	D	0.848	D	0.887	0.039	**YES**

TABLE 19
EXISTING PLUS PROJECT ALTERNATIVE 5 (NO PACIFIC AVENUE RECONNECTION) CONDITIONS
LEVEL OF SERVICE – SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Existing		Existing plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
27. Helberta Ave/Camino Real & Torrance Blvd	AM	A	0.476	A	0.482	0.006	NO
	PM	A	0.518	A	0.532	0.014	NO
28. Prospect Ave & Torrance Blvd	AM	D	0.819	D	0.823	0.004	NO
	PM	C	0.742	C	0.751	0.009	NO
29. Catalina Ave & Pearl St	AM	A	0.386	A	0.391	0.005	NO
	PM	A	0.373	A	0.380	0.007	NO
31. Pacific Coast Hwy & Sapphire St/Francisca Ave	AM	B	0.611	B	0.620	0.009	NO
	PM	B	0.650	B	0.664	0.014	NO
34. Pacific Coast Hwy & Knob Hill Ave	AM	B	0.655	B	0.663	0.008	NO
	PM	B	0.698	C	0.712	0.014	NO
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	0.850	D	0.860	0.010	NO
	PM	**E**	**0.957**	**E**	**0.978**	0.021	**YES**
37. Pacific Coast Hwy & 2nd St	AM	B	0.695	C	0.702	0.007	NO
	PM	B	0.696	C	0.715	0.019	NO
38. Pacific Coast Hwy & 10th/Aviation	AM	C	0.777	C	0.783	0.006	NO
	PM	C	0.743	C	0.762	0.019	NO
39. Pacific Coast Hwy & Pier/14th St	AM	A	0.565	A	0.571	0.006	NO
	PM	C	0.703	C	0.723	0.020	NO
40. Pacific Coast Hwy & 16th St	AM	A	0.526	A	0.532	0.006	NO
	PM	B	0.636	B	0.655	0.019	NO
41. Pacific Coast Hwy & Prospect Ave	AM	C	0.704	C	0.711	0.007	NO
	PM	C	0.775	C	0.793	0.018	NO

Note: Intersections operating at LOS E or F are noted in **Bold.**

[a] Harbor Dr & Pacific Ave was not analyzed for Cumulative Base and Alternative 5 Conditions because it will not function as a full intersection under this alternative.

TABLE 20
EXISTING PLUS PROJECT ALTERNATIVE 5 (NO PACIFIC AVENUE RECONNECTION) CONDITIONS
LEVEL OF SERVICE – UNSIGNALIZED INTERSECTIONS

Intersection	Traffic Control	Peak Period	Existing		Existing plus Project		Change in Delay (sec)	Significant Impact
			LOS	Delay (sec)	LOS	Delay (sec)		
1. Hermosa Ave & 2nd St	AWSC	AM	B	11.2	B	11.6	0.4	NO
		PM	B	10.5	B	11.1	0.6	NO
2. Monterey Blvd & 2nd St	AWSC	AM	A	8.3	A	8.3	0.0	NO
		PM	A	9.7	A	9.7	0.0	NO
3. Valley Dr & 2nd St	AWSC	AM	A	9.3	A	9.6	0.3	NO
		PM	C	19.3	D	27.3	8.0	NO
5. Monterey Blvd & Herondo St	TWSC	AM	C	15.3	C	16.6	1.3	NO
		PM	C	19.3	C	24.6	5.3	NO
6. Valley Dr/Francisca Ave & Herondo St	AWSC	AM	B	12.7	B	13.6	0.9	NO
		PM	C	23.4	**E**	**43.2**	19.8	**YES**
13. Catalina Ave & Francisca Ave	TWSC	AM	C	17.0	C	19.1	2.1	NO
		PM	**E**	**38.0**	**F**	**57.0**	19.0	NO
14. Catalina Ave & Broadway	TWSC	AM	C	18.1	C	20.6	2.5	NO
		PM	C	24.1	D	33.1	9.0	NO
17. Broadway & Beryl St	TWSC	AM	B	11.8	B	12.1	0.3	NO
		PM	B	12.4	B	13.1	0.7	NO
18. Francisca Ave & Beryl St	TWSC	AM	B	12.2	B	12.5	0.3	NO
		PM	C	18.1	C	19.9	1.8	NO
20. Pacific Ave & Harbor Dr	AWSC	AM	A	7.7	A	7.7	0.0	NO
		PM	A	8.7	A	8.8	0.1	NO
30. Camino Real & Pearl St	AWSC	AM	A	8.9	A	9.0	0.1	NO
		PM	A	9.0	A	9.1	0.1	NO
32. Esplanade & Knob Hill Ave	AWSC	AM	A	9.1	A	9.1	0.0	NO
		PM	B	10.4	B	10.4	0.0	NO
33. Catalina Ave & Knob Hill Ave	AWSC	AM	B	11.2	B	11.4	0.2	NO
		PM	B	12.5	B	13.0	0.5	NO

AWSC = All-way stop control TWSC = 2-way stop control

Note: For unsignalized intersections, the worst case approach delay for two-way stop controlled, and average intersection delay for all-way stop controlled is reported.

Intersections operating at LOS E or F are noted in **Bold**.

TABLE 21
CUMULATIVE PLUS PROJECT ALTERNATIVE 5 (NO PACIFIC AVENUE RECONNECTION) CONDITIONS
LEVEL OF SERVICE – SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Cumulative		Cumulative plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
4. Harbor Dr/Hermosa Ave & Herondo St	AM	A	0.528	A	0.562	0.034	NO
	PM	A	0.504	B	0.607	0.103	NO
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	AM	E	0.918	E	0.936	0.018	**YES**
	PM	F	1.022	F	1.070	0.048	**YES**
8. Prospect Ave & Anita St	AM	B	0.689	B	0.700	0.011	NO
	PM	B	0.678	B	0.695	0.017	NO
9. Harbor Dr & Yacht Club Way	AM	A	0.358	A	0.384	0.026	NO
	PM	A	0.488	A	0.555	0.067	NO
10. Pacific Coast Hwy & Catalina Ave	AM	D	0.878	D	0.889	0.011	NO
	PM	E	0.912	E	0.934	0.022	**YES**
11. Harbor Dr & Marina Way	AM	A	0.286	A	0.312	0.026	NO
	PM	A	0.471	A	0.537	0.066	NO
12. Catalina Ave & Gertruda Ave	AM	A	0.377	A	0.396	0.019	NO
	PM	A	0.551	B	0.630	0.079	NO
15. Harbor Dr & Portofino Way/Beryl St	AM	A	0.321	A	0.349	0.028	NO
	PM	B	0.602	B	0.677	0.075	NO
16. Catalina Ave & Beryl St	AM	A	0.384	A	0.426	0.042	NO
	PM	A	0.598	C	0.708	0.110	NO
19. Pacific Coast Hwy & Beryl St	AM	C	0.777	C	0.792	0.015	NO
	PM	E	0.932	E	0.973	0.041	**YES**
21. Catalina Ave & Carnelian St	AM	A	0.445	A	0.460	0.015	NO
	PM	A	0.472	A	0.510	0.038	NO
22. Catalina Ave & Diamond St	AM	A	0.438	A	0.457	0.019	NO
	PM	A	0.451	A	0.493	0.042	NO
23. Catalina Ave & Emerald St	AM	A	0.459	A	0.473	0.014	NO
	PM	A	0.465	A	0.503	0.038	NO
24. Pacific Coast Hwy & Garnet St	AM	C	0.711	C	0.714	0.003	NO
	PM	B	0.686	B	0.695	0.009	NO
25. Catalina Ave & Torrance Blvd	AM	A	0.431	A	0.447	0.016	NO
	PM	A	0.483	A	0.525	0.042	NO
26. Pacific Coast Hwy & Torrance Blvd	AM	D	0.848	D	0.860	0.012	NO
	PM	D	0.892	E	0.931	0.039	**YES**

TABLE 21
CUMULATIVE PLUS PROJECT ALTERNATIVE 5 (NO PACIFIC AVENUE RECONNECTION) CONDITIONS
LEVEL OF SERVICE – SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Cumulative		Cumulative plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
27. Helberta Ave/Camino Real & Torrance Blvd	AM	A	0.487	A	0.493	0.006	NO
	PM	A	0.534	A	0.547	0.013	NO
28. Prospect Ave & Torrance Blvd	AM	D	0.834	D	0.838	0.004	NO
	PM	C	0.755	C	0.764	0.009	NO
29. Catalina Ave & Pearl St	AM	A	0.392	A	0.396	0.004	NO
	PM	A	0.379	A	0.386	0.007	NO
31. Pacific Coast Hwy & Sapphire St/Francisca Ave	AM	B	0.635	B	0.644	0.009	NO
	PM	B	0.678	B	0.692	0.014	NO
34. Pacific Coast Hwy & Knob Hill Ave	AM	B	0.682	B	0.691	0.009	NO
	PM	C	0.736	C	0.750	0.014	NO
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	0.878	D	0.888	0.010	NO
	PM	E	0.997	F	1.019	0.022	**YES**
37. Pacific Coast Hwy & 2nd St	AM	C	0.707	C	0.714	0.007	NO
	PM	C	0.717	C	0.737	0.020	NO
38. Pacific Coast Hwy & 10th/Aviation	AM	C	0.792	C	0.798	0.006	NO
	PM	C	0.757	C	0.776	0.019	NO
39. Pacific Coast Hwy & Pier/14th St	AM	A	0.574	A	0.581	0.007	NO
	PM	C	0.717	C	0.737	0.020	NO
40. Pacific Coast Hwy & 16th St	AM	A	0.536	A	0.543	0.007	NO
	PM	B	0.647	B	0.667	0.020	NO
41. Pacific Coast Hwy & Prospect Ave	AM	C	0.723	C	0.731	0.008	NO
	PM	C	0.793	D	0.810	0.017	NO

Intersections operating at LOS E or F are noted in **Bold**.

[a] Harbor Dr & Pacific Ave was not analyzed for Cumulative Base and Alternative 5 Conditions because it will not function as a full intersection under this alternative.

TABLE 22
CUMULATIVE PLUS PROJECT ALTERNATIVE 5 (NO PACIFIC AVENUE RECONNECTION) CONDITIONS
LEVEL OF SERVICE – UNSIGNALIZED INTERSECTIONS

Intersection	Traffic Control	Peak Period	Cumulative		Cumulative plus Project		Change in Delay (sec)	Significant Impact
			LOS	Delay (sec)	LOS	Delay (sec)		
1. Hermosa Ave & 2nd St	AWSC	AM	B	11.4	B	11.8	0.4	NO
		PM	B	10.6	B	11.2	0.6	NO
2. Monterey Blvd & 2nd St	AWSC	AM	A	8.3	A	8.4	0.1	NO
		PM	A	9.7	A	9.8	0.1	NO
3. Valley Dr & 2nd St	AWSC	AM	A	9.4	A	9.7	0.3	NO
		PM	C	20.5	D	29.8	9.3	NO
5. Monterey Blvd & Herondo St	TWSC	AM	C	15.6	C	17.0	1.4	NO
		PM	C	20.0	D	26.0	6.0	NO
6. Valley Dr/Francisca Ave & Herondo St	AWSC	AM	C	16.6	C	20.0	3.4	NO
		PM	**E**	**43.3**	**F**	**63.5**	20.2	**YES**
13. Catalina Ave & Francisca Ave	TWSC	AM	C	17.4	C	19.5	2.1	NO
		PM	E	40.3	F	61.9	21.6	NO
14. Catalina Ave & Broadway	TWSC	AM	C	18.7	C	21.2	2.5	NO
		PM	D	25.3	D	34.9	9.6	NO
17. Broadway & Beryl St	TWSC	AM	B	11.9	B	12.2	0.3	NO
		PM	B	12.5	B	13.2	0.7	NO
18. Francisca Ave & Beryl St	TWSC	AM	B	12.3	B	12.6	0.3	NO
		PM	C	18.5	C	20.4	1.9	NO
20. Pacific Ave & Harbor Dr	AWSC	AM	A	7.7	A	7.8	0.1	NO
		PM	A	8.7	A	8.8	0.1	NO
30. Camino Real & Pearl St	AWSC	AM	A	9.0	A	9.0	0.0	NO
		PM	A	9.1	A	9.1	0.0	NO
32. Esplanade & Knob Hill Ave	AWSC	AM	A	9.2	A	9.2	0.0	NO
		PM	B	10.6	B	10.6	0.0	NO
33. Catalina Ave & Knob Hill Ave	AWSC	AM	B	11.5	B	11.7	0.2	NO
		PM	B	13.1	B	13.6	0.5	NO

AWSC = All-way stop control TWSC = 2-way stop control

Note: For unsignalized intersections, the worst case approach delay for two-way stop controlled, and average intersection delay for all-way stop controlled is reported.

Intersections operating at LOS E or F are noted in **Bold**.

5.2 REDUCED DENSITY (ALTERNATIVE 7)

The alternative reduces the Project density with 50% less net new square feet of land use. Table 23 details the trip generation estimates for the Reduced Density Alternative. A total of 6,831 daily, 132 AM peak hour, and 412 PM peak hour trips are estimated with this alternative. Aside from less net new land uses, and slight variations in land use mix, this alternative would not be different from the Project, and does include the Pacific Avenue Reconnection, so therefore uses the same trip distribution pattern as the Project.

TABLE 23
ALTERNATIVE 7 (REDUCED DENSITY) TRIP GENERATION ESTIMATES

Designation	Size	Units	Trip Generation Rates			Trip Generation Estimates						
							AM Peak Hour			PM Peak Hour		
			Daily	AM Peak Hour	PM Peak Hour	Daily	In	Out	Total	In	Out	Total
Proposed Project												
Retail [a]	60	KSF	Equation			4,872	71	43	114	204	221	425
Movie Theater [b]	495	Seats	1.80	0.00	0.07	891	0	0	0	19	16	35
Quality Restaurant[c]	99	KSF	89.95	0.81	7.49	8,905	44	36	80	497	245	742
High Turnover Rest. [d]	32	KSF	127.15	10.81	9.85	4,069	190	156	346	189	126	315
Hotel [e]	90	Rooms	8.17	0.53	0.60	735	28	20	48	28	26	54
Office [f]	43	KSF	11.03	1.56	1.49	474	59	8	67	11	53	64
Total Trips (base ITE rates)						19,946	392	263	655	948	687	1,635
MXD+ Model calibration of base ITE rates reflecting project & site specific characteristics						-3,591	-69	-47	-116	-314	-228	-542
Boat Launch Ramp	40	Stalls				160	8	4	12	4	8	12
Project Vehicle Trips						**16,515**	**331**	**220**	**551**	**638**	**467**	**1,105**
Existing Active Uses												
Retail [a]	31.005	KSF	Equation			3,172	47	29	76	131	142	273
Quality Restaurant[c]	45.094	KSF	89.95	0.81	7.49	4,056	20	17	37	226	112	338
High Turnover Rest. [d]	30.083	KSF	127.15	10.81	9.85	3,825	179	146	325	178	118	296
Office [f]	71.174	KSF	11.03	1.56	1.49	785	98	13	111	18	88	106
Total Trips (base ITE rates)						11,838	344	205	549	553	460	1,013
MXD+ Model calibration of base ITE rates reflecting project & site specific characteristics						-2,154	-81	-49	-130	-175	-145	-320
Existing Vehicle Trips						**9,684**	**263**	**156**	**419**	**378**	**315**	**693**
NET NEW EXTERNAL PROJECT TRIPS						***6,831***	***68***	***64***	***132***	***260***	***152***	***412***

Notes:

[a] Trip generation fitted curve equation for Land Use 820 from *Trip Generation*, 9th *Edition*, Institute of Transportation Engineers, 2012. Existing retail includes the arcade.

[b] Trip generation rate for Land Use 444 from *Trip Generation*, 9th *Edition*, Institute of Transportation Engineers, 2012. For a worst-case weekday analysis, ITE Friday trip generation rates for the movie theater use have been used. For the daily trip rate, the weekday daily rate was obtained from SANDAG's Not So Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (SANDAG, April 2002).

[c] Trip generation rate for Land Use 931 from *Trip Generation*, 9th *Edition*, Institute of Transportation Engineers, 2012

[d] Trip generation rate for Land Use 932 from *Trip Generation*, 9th *Edition*, Institute of Transportation Engineers, 2012. Existing restaurant uses at the project site include a variety of types, include quality restaurant (typically closed for breakfast on weekdays), and high-turnover restaurant (typically open for breakfast). Assumed 60% quality restaurant and 40% high turnover restaurant. Quality restaurants generate fewer trips than high-turnover restaurants, so applying this 60/40 split for the existing uses results in a smaller existing trip generation credit applied to future uses.

[e] Trip generation rate for Land Use 310 from *Trip Generation*, 9th *Edition*, Institute of Transportation Engineers, 2012

[f] Trip generation rate for Land Use 710 from *Trip Generation*, 9th *Edition*, Institute of Transportation Engineers, 2012

[g] Gross leasable area that was occupied at the time baseline traffic counts were collection (Summer 2013, Spring 2014). Because fewer spaces were occupied in Summer 2013, and therefore the trip generation credit for existing uses would be smaller) the summer 2013 GLA data were used.

Level of Service Results

Tables 24 and 25 present the signalized and unsignalized intersection analysis for Existing plus Project (Reduced Density Alternative) conditions. Tables 26 and 27 present the signalized and unsignalized intersection analysis for Cumulative plus Project (Reduced Density Alternative) conditions. Compared with the Project, intersection operations at signalized and unsignalized intersections would be improved due to the reduced Project trips added to the intersections.

Under the Existing plus Project (Reduced Density) scenario, the following two intersections would no longer be significantly impacted compared with the full Project, but all other intersections identified in the analysis of the full Project would be significantly impacted (though at a lesser level than the full Project).

10) PCH & Catalina Avenue

26) PCH & Torrance Boulevard

Under the Cumulative plus Project (Reduced Density) conditions, all AM peak hour impacts would be eliminated, but PM impacts would remain at four of the five intersections impacted by the Project (the impact at Intersection 26 – Pacific Coast Highway & Torrance Boulevard) would be eliminated. With mitigation measures, all Reduced Density Project impacts under the Cumulative plus Project scenario would be fully mitigated. The results of this alternative for the CMP analysis, City of Torrance analysis, or Caltrans analysis are expected to be the same or less than the Project for those analyses.

TABLE 24
EXISTING PLUS PROJECT ALTERNATIVE 7 (REDUCED DENSITY) CONDITIONS
LEVEL OF SERVICE – SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Existing		Existing plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
4. Harbor Dr/Hermosa Ave & Herondo St	AM	A	0.518	A	0.533	0.015	NO
	PM	A	0.491	A	0.552	0.061	NO
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	AM	D	0.896	**E**	**0.903**	0.007	NO
	PM	**E**	**0.989**	**F**	**1.013**	0.024	**YES**
8. Prospect Ave & Anita St	AM	B	0.679	B	0.683	0.004	NO
	PM	B	0.664	B	0.673	0.009	NO
9. Harbor Dr & Yacht Club Way	AM	A	0.352	A	0.366	0.014	NO
	PM	A	0.477	A	0.527	0.050	NO
10. Pacific Coast Hwy & Catalina Ave	AM	D	0.855	D	0.860	0.005	NO
	PM	D	0.883	D	0.894	0.011	NO
11. Harbor Dr & Marina Way	AM	A	0.281	A	0.295	0.014	NO
	PM	A	0.459	A	0.508	0.049	NO
12. Catalina Ave & Gertruda Ave	AM	A	0.371	A	0.376	0.005	NO
	PM	A	0.540	A	0.567	0.027	NO
15. Harbor Dr & Portofino Way/Beryl St	AM	A	0.317	A	0.342	0.025	NO
	PM	A	0.592	B	0.609	0.017	NO
16. Catalina Ave & Beryl St	AM	A	0.374	A	0.386	0.012	NO
	PM	A	0.565	A	0.565	0.000	NO
19. Pacific Coast Hwy & Beryl St	AM	C	0.757	C	0.761	0.004	NO
	PM	**E**	**0.901**	**E**	**0.916**	0.015	**YES**
21. Catalina Ave & Carnelian St	AM	A	0.438	A	0.406	-0.032	NO
	PM	A	0.465	A	0.396	-0.069	NO
22. Catalina Ave & Diamond St	AM	A	0.430	A	0.398	-0.032	NO
	PM	A	0.444	A	0.366	-0.078	NO
23. Catalina Ave & Emerald St	AM	A	0.453	A	0.421	-0.032	NO
	PM	A	0.457	A	0.381	-0.076	NO
24. Pacific Coast Hwy & Garnet St	AM	B	0.691	B	0.692	0.001	NO
	PM	B	0.663	B	0.665	0.002	NO
25. Catalina Ave & Torrance Blvd	AM	A	0.424	A	0.448	0.024	NO
	PM	A	0.475	A	0.511	0.036	NO
26. Pacific Coast Hwy & Torrance Blvd	AM	D	0.818	D	0.822	0.004	NO
	PM	D	0.848	D	0.860	0.012	NO

TABLE 24
EXISTING PLUS PROJECT ALTERNATIVE 7 (REDUCED DENSITY) CONDITIONS
LEVEL OF SERVICE – SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Existing		Existing plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
27. Helberta Ave/Camino Real & Torrance Blvd	AM	A	0.476	A	0.479	0.003	NO
	PM	A	0.518	A	0.525	0.007	NO
28. Prospect Ave & Torrance Blvd	AM	D	0.819	D	0.820	0.001	NO
	PM	C	0.742	C	0.747	0.005	NO
29. Catalina Ave & Pearl St	AM	A	0.386	A	0.388	0.002	NO
	PM	A	0.373	A	0.377	0.004	NO
31. Pacific Coast Hwy & Sapphire St/Francisca Ave	AM	B	0.611	B	0.614	0.003	NO
	PM	B	0.650	B	0.656	0.006	NO
34. Pacific Coast Hwy & Knob Hill Ave	AM	B	0.655	B	0.658	0.003	NO
	PM	B	0.698	C	0.705	0.007	NO
35. Harbor Dr & Pacific Ave [a]	AM	A	--	A	0.268	--	--
	PM	A	--	A	0.387	--	--
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	0.850	D	0.854	0.004	NO
	PM	**E**	**0.957**	**E**	**0.968**	0.011	**YES**
37. Pacific Coast Hwy & 2nd St	AM	B	0.695	B	0.698	0.003	NO
	PM	B	0.696	C	0.707	0.011	NO
38. Pacific Coast Hwy & 10th/Aviation	AM	C	0.777	C	0.780	0.003	NO
	PM	C	0.743	C	0.753	0.010	NO
39. Pacific Coast Hwy & Pier/14th St	AM	A	0.565	A	0.568	0.003	NO
	PM	C	0.703	C	0.714	0.011	NO
40. Pacific Coast Hwy & 16th St	AM	A	0.526	A	0.529	0.003	NO
	PM	B	0.636	B	0.647	0.011	NO
41. Pacific Coast Hwy & Prospect Ave	AM	C	0.704	C	0.707	0.003	NO
	PM	C	0.775	C	0.785	0.010	NO

Note: Intersections operating at LOS E or F are noted in **Bold.**

[a] Harbor Dr & Pacific Ave was not analyzed for Existing Conditions because it will only function as a full intersection with the Project.

TABLE 25
EXISTING PLUS PROJECT ALTERNATIVE 7 (REDUCED DENSITY) CONDITIONS
LEVEL OF SERVICE – UNSIGNALIZED INTERSECTIONS

Intersection	Traffic Control	Peak Period	Existing		Existing plus Project		Change in Delay (sec)	Significant Impact
			LOS	Delay (sec)	LOS	Delay (sec)		
1. Hermosa Ave & 2nd St	AWSC	AM	B	11.2	B	11.4	0.2	NO
		PM	B	10.5	B	11.0	0.5	NO
2. Monterey Blvd & 2nd St	AWSC	AM	A	8.3	A	8.3	0.0	NO
		PM	A	9.7	A	9.7	0.0	NO
3. Valley Dr & 2nd St	AWSC	AM	A	9.3	A	9.4	0.1	NO
		PM	C	19.3	C	20.8	1.5	NO
5. Monterey Blvd & Herondo St	TWSC	AM	C	15.3	C	15.7	0.4	NO
		PM	C	19.3	C	21.4	2.1	NO
6. Valley Dr/Francisca Ave & Herondo St	AWSC	AM	B	12.7	B	12.9	0.2	NO
		PM	C	23.4	D	26.4	3.0	NO
13. Catalina Ave & Francisca Ave	TWSC	AM	C	17.0	C	17.6	0.6	NO
		PM	**E**	**38.0**	**E**	**44.5**	6.5	NO
14. Catalina Ave & Broadway	TWSC	AM	C	18.1	C	18.8	0.7	NO
		PM	C	24.1	D	27.3	3.2	NO
17. Broadway & Beryl St	TWSC	AM	B	11.8	B	12.0	0.2	NO
		PM	B	12.4	B	12.9	0.5	NO
18. Francisca Ave & Beryl St	TWSC	AM	B	12.2	B	12.4	0.2	NO
		PM	C	18.1	C	19.3	1.2	NO
20. Pacific Ave & Harbor Dr	AWSC	AM	A	7.7	A	7.4	-0.3	NO
		PM	A	8.7	A	8.1	-0.6	NO
30. Camino Real & Pearl St	AWSC	AM	A	8.9	A	8.9	0.0	NO
		PM	A	9.0	A	9.0	0.0	NO
32. Esplanade & Knob Hill Ave	AWSC	AM	A	9.1	A	9.1	0.0	NO
		PM	B	10.4	B	10.4	0.0	NO
33. Catalina Ave & Knob Hill Ave	AWSC	AM	B	11.2	B	11.3	0.1	NO
		PM	B	12.5	B	12.8	0.3	NO

AWSC = All-way stop control TWSC = 2-way stop control

Note: For unsignalized intersections, the worst case approach delay for two-way stop controlled, and average intersection delay for all-way stop controlled is reported.

Intersections operating at LOS E or F are noted in **Bold**.

TABLE 26
CUMULATIVE & PLUS PROJECT ALTERNATIVE 7 (REDUCED DENSITY) CONDITIONS
LEVEL OF SERVICE – SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Cumulative		Cumulative plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
4. Harbor Dr/Hermosa Ave & Herondo St	AM	A	0.528	A	0.543	0.015	NO
	PM	A	0.504	A	0.565	0.061	NO
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	AM	**E**	**0.918**	**E**	**0.925**	0.007	NO
	PM	**F**	**1.022**	**F**	**1.048**	0.026	**YES**
8. Prospect Ave & Anita St	AM	B	0.689	B	0.694	0.005	NO
	PM	B	0.678	B	0.687	0.009	NO
9. Harbor Dr & Yacht Club Way	AM	A	0.358	A	0.372	0.014	NO
	PM	A	0.488	A	0.538	0.050	NO
10. Pacific Coast Hwy & Catalina Ave	AM	D	0.878	D	0.882	0.004	NO
	PM	**E**	**0.912**	**E**	**0.922**	0.010	**YES**
11. Harbor Dr & Marina Way	AM	A	0.286	A	0.300	0.014	NO
	PM	A	0.471	A	0.520	0.049	NO
12. Catalina Ave & Gertruda Ave	AM	A	0.377	A	0.381	0.004	NO
	PM	A	0.551	A	0.578	0.027	NO
15. Harbor Dr & Portofino Way/Beryl St	AM	A	0.321	A	0.348	0.027	NO
	PM	B	0.602	B	0.619	0.017	NO
16. Catalina Ave & Beryl St	AM	A	0.384	A	0.395	0.011	NO
	PM	A	0.598	A	0.597	-0.001	NO
19. Pacific Coast Hwy & Beryl St	AM	C	0.777	C	0.782	0.005	NO
	PM	**E**	**0.932**	**E**	**0.946**	0.014	**YES**
21. Catalina Ave & Carnelian St	AM	A	0.445	A	0.412	-0.033	NO
	PM	A	0.472	A	0.403	-0.069	NO
22. Catalina Ave & Diamond St	AM	A	0.438	A	0.405	-0.033	NO
	PM	A	0.451	A	0.370	-0.081	NO
23. Catalina Ave & Emerald St	AM	A	0.459	A	0.426	-0.033	NO
	PM	A	0.465	A	0.387	-0.078	NO
24. Pacific Coast Hwy & Garnet St	AM	C	0.711	C	0.711	0.000	NO
	PM	B	0.686	B	0.688	0.002	NO
25. Catalina Ave & Torrance Blvd	AM	A	0.431	A	0.455	0.024	NO
	PM	A	0.483	A	0.519	0.036	NO
26. Pacific Coast Hwy & Torrance Blvd	AM	D	0.848	D	0.853	0.005	NO
	PM	D	0.892	**E**	**0.904**	0.012	NO

TABLE 26
CUMULATIVE & PLUS PROJECT ALTERNATIVE 7 (REDUCED DENSITY) CONDITIONS
LEVEL OF SERVICE – SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Cumulative		Cumulative plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
27. Helberta Ave/Camino Real & Torrance Blvd	AM	A	0.487	A	0.490	0.003	NO
	PM	A	0.534	A	0.540	0.006	NO
28. Prospect Ave & Torrance Blvd	AM	D	0.834	D	0.835	0.001	NO
	PM	C	0.755	C	0.760	0.005	NO
29. Catalina Ave & Pearl St	AM	A	0.392	A	0.393	0.001	NO
	PM	A	0.379	A	0.382	0.003	NO
31. Pacific Coast Hwy & Sapphire St/Francisca Ave	AM	B	0.635	B	0.638	0.003	NO
	PM	B	0.678	B	0.685	0.007	NO
34. Pacific Coast Hwy & Knob Hill Ave	AM	B	0.682	B	0.685	0.003	NO
	PM	C	0.736	C	0.743	0.007	NO
35. Harbor Dr & Pacific Ave	AM	A	--	A	0.272	--	--
	PM	A	--	A	0.393	--	--
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	0.878	D	0.883	0.005	NO
	PM	**E**	**0.997**	**F**	**1.009**	0.012	**YES**
37. Pacific Coast Hwy & 2nd St	AM	C	0.707	C	0.710	0.003	NO
	PM	C	0.717	C	0.728	0.011	NO
38. Pacific Coast Hwy & 10th/Aviation	AM	C	0.792	C	0.795	0.003	NO
	PM	C	0.757	C	0.767	0.010	NO
39. Pacific Coast Hwy & Pier/14th St	AM	A	0.574	A	0.577	0.003	NO
	PM	C	0.717	C	0.728	0.011	NO
40. Pacific Coast Hwy & 16th St	AM	A	0.536	A	0.539	0.003	NO
	PM	B	0.647	B	0.658	0.011	NO
41. Pacific Coast Hwy & Prospect Ave	AM	C	0.723	C	0.726	0.003	NO
	PM	C	0.793	D	0.803	0.010	NO

Intersections operating at LOS E or F are noted in **Bold**.

[a] Harbor Dr & Pacific Ave was not analyzed for Cumulative without Project Conditions because it will only function as a full intersection with the Project.

TABLE 27
EXISTING PLUS PROJECT ALTERNATIVE 7 (REDUCED DENSITY) CONDITIONS
LEVEL OF SERVICE – UNSIGNALIZED INTERSECTIONS

Intersection	Traffic Control	Peak Period	Cumulative		Cumulative plus Project		Change in Delay (sec)	Significant Impact
			LOS	Delay (sec)	LOS	Delay (sec)		
1. Hermosa Ave & 2nd St	AWSC	AM	B	11.4	B	11.5	0.1	NO
		PM	B	10.6	B	11.1	0.5	NO
2. Monterey Blvd & 2nd St	AWSC	AM	A	8.3	A	8.4	0.1	NO
		PM	A	9.7	A	9.8	0.1	NO
3. Valley Dr & 2nd St	AWSC	AM	A	9.4	A	9.5	0.1	NO
		PM	C	20.5	C	22.2	1.7	NO
5. Monterey Blvd & Herondo St	TWSC	AM	C	15.6	C	16.0	0.4	NO
		PM	C	20.0	C	22.3	2.3	NO
6. Valley Dr/Francisca Ave & Herondo St	AWSC	AM	C	16.6	C	17.5	0.9	NO
		PM	**E**	**43.3**	**E**	**47.7**	4.4	**YES**
13. Catalina Ave & Francisca Ave	TWSC	AM	C	17.4	C	18.0	0.6	NO
		PM	**E**	**40.3**	**E**	**47.3**	7.0	NO
14. Catalina Ave & Broadway	TWSC	AM	C	18.7	C	19.4	0.7	NO
		PM	D	25.3	D	28.6	3.3	NO
17. Broadway & Beryl St	TWSC	AM	B	11.9	B	12.1	0.2	NO
		PM	B	12.5	B	13.0	0.5	NO
18. Francisca Ave & Beryl St	TWSC	AM	B	12.3	B	12.5	0.2	NO
		PM	C	18.5	C	19.7	1.2	NO
20. Pacific Ave & Harbor Dr	AWSC	AM	A	7.7	A	7.4	-0.3	NO
		PM	A	8.7	A	8.3	-0.4	NO
30. Camino Real & Pearl St	AWSC	AM	A	9.0	A	9.0	0.0	NO
		PM	A	9.1	A	9.1	0.0	NO
32. Esplanade & Knob Hill Ave	AWSC	AM	A	9.2	A	9.2	0.0	NO
		PM	B	10.6	B	10.6	0.0	NO
33. Catalina Ave & Knob Hill Ave	AWSC	AM	B	11.5	B	11.6	0.1	NO
		PM	B	13.1	B	13.4	0.3	NO

AWSC = All-way stop control TWSC = 2-way stop control

Note: For unsignalized intersections, the worst case approach delay for two-way stop controlled, and average intersection delay for all-way stop controlled is reported.

Intersections operating at LOS E or F are noted in **Bold**.

5.3 BOAT LAUNCH RAMP (ALTERNATIVE 8)

Tables 28 and 29 summarize the results of the analysis of various boat launch ramp location and capacity options compared to the Project under Existing plus Project and Cumulative plus Project Conditions, respectively. The options vary by mole location (and thus the access intersection), and whether or not the alternative has one launch lane (with 20 parking stalls), or two launch lanes (with 40 parking stalls), otherwise all other aspects of this alternative are consistent with the Project. Five signalized intersections were evaluated because they represent the locations that would experience the most variability between the boat launch ramp alternatives. Other intersections are not expected to vary from the Project, and therefore the significance conclusions would be the same as the Project. All alternative locations are compared with the Project scenario, which includes a two lane boat launch at Mole C. There is negligible variation in operating conditions between the alternative locations and the Project.

TABLE 28
EXISTING PLUS PROJECT ALTERNATIVE 8 (BOAT LAUNCH RAMP ALTERNATIVE) CONDITIONS
LEVEL OF SERVICE – SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Existing plus Project		Mole A One Lane		Change	Mole A Two Lane		Change	Mole C One Lane		Change	Mole D One Lane		Change	Mole D Two Lane		Change
		LOS	V/C	LOS	V/C		LOS	V/C		LOS	V/C		LOS	V/C		LOS	V/C	
4. Harbor Dr/Hermosa Ave & Herondo St	AM	A	0.553	A	0.552	-0.001	A	0.553	0.000	A	0.551	-0.002	A	0.551	-0.002	A	0.551	-0.002
	PM	B	0.611	B	0.610	-0.001	B	0.610	-0.001	B	0.609	-0.002	B	0.609	-0.002	B	0.609	-0.002
9. Harbor Dr & Yacht Club Way	AM	A	0.386	A	0.387	0.001	A	0.388	0.002	A	0.386	0.000	A	0.386	0.000	A	0.386	0.000
	PM	A	0.567	A	0.569	0.002	A	0.571	0.004	A	0.567	0.000	A	0.567	0.000	A	0.567	0.000
11. Harbor Dr & Marina Way	AM	A	0.315	A	0.316	0.001	A	0.318	0.003	A	0.315	0.000	A	0.315	0.000	A	0.315	0.000
	PM	A	0.549	A	0.549	0.000	A	0.551	0.002	A	0.548	-0.001	A	0.548	-0.001	A	0.548	-0.001
15. Harbor Dr & Portofino Way/Beryl St	AM	A	0.366	A	0.365	-0.001	A	0.364	-0.002	A	0.365	-0.001	A	0.367	0.001	A	0.369	0.003
	PM	B	0.650	B	0.649	-0.001	B	0.649	-0.001	B	0.649	-0.001	B	0.651	0.001	B	0.652	0.002
35. Harbor Dr & Pacific Ave	AM	A	0.273	A	0.273	0.000	A	0.273	0.000	A	0.273	0.000	A	0.273	0.000	A	0.273	0.000
	PM	A	0.398	A	0.398	0.000	A	0.398	0.000	A	0.398	0.000	A	0.398	0.000	A	0.398	0.000

Intersections operating at LOS E or F are noted in **Bold**.

TABLE 29
CUMULATIVE PLUS PROJECT ALTERNATIVE 8 (BOAT LAUNCH RAMP ALTERNATIVE) CONDITIONS
LEVEL OF SERVICE – SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Cumulative plus Project		Mole A One Lane		Change	Mole A Two Lane		Change	Mole C One Lane		Change	Mole D One Lane		Change	Mole D Two Lane		Change
		LOS	V/C	LOS	V/C		LOS	V/C		LOS	V/C		LOS	V/C		LOS	V/C	
4. Harbor Dr/Hermosa Ave & Herondo St	AM	A	0.590	A	0.590	0.000	A	0.590	0.000	A	0.589	-0.001	A	0.589	-0.001	A	0.589	-0.001
	PM	B	0.648	B	0.647	-0.001	B	0.648	0.000	B	0.647	-0.001	B	0.647	-0.001	B	0.647	-0.001
9. Harbor Dr & Yacht Club Way	AM	A	0.407	A	0.409	0.002	A	0.410	0.003	A	0.407	0.000	A	0.407	0.000	A	0.407	0.000
	PM	B	0.604	B	0.604	0.000	B	0.606	0.002	B	0.603	-0.001	B	0.603	-0.001	B	0.603	-0.001
11. Harbor Dr & Marina Way	AM	A	0.330	A	0.332	0.002	A	0.334	0.004	A	0.330	0.000	A	0.330	0.000	A	0.330	0.000
	PM	A	0.583	A	0.584	0.001	A	0.585	0.002	A	0.583	0.000	A	0.583	0.000	A	0.583	0.000
15. Harbor Dr & Portofino Way/Beryl St	AM	A	0.386	A	0.386	0.000	A	0.385	-0.001	A	0.386	0.000	A	0.387	0.001	A	0.389	0.003
	PM	B	0.695	B	0.694	-0.001	B	0.694	-0.001	B	0.694	-0.001	B	0.696	0.001	B	0.697	0.002
35. Harbor Dr & Pacific Ave	AM	A	0.288	A	0.288	0.000	A	0.288	0.000	A	0.288	0.000	A	0.288	0.000	A	0.288	0.000
	PM	A	0.424	A	0.424	0.000	A	0.424	0.000	A	0.424	0.000	A	0.424	0.000	A	0.424	0.000

Intersections operating at LOS E or F are noted in **Bold**.

5.4 OTHER ALTERNATIVES

Four additional alternatives were analyzed qualitatively because they are not expected to be substantially different than the Project in terms of number of trips generated or trip distribution, or will generate minimal Project trips (e.g., the number of trips generated would be substantially less than the proposed Project). Alternative 1 - No Project is analyzed above as the Cumulative without Project scenario.

- Alternative 2 - No Project Necessary Infrastructure Improvements-This alternative will include the replacement of approximately 70,000 sf of development, but will not increase net new trip generation for the Project, and therefore will have limited variance from the No Project alternative from a transportation perspective, with the exception of during the construction period. However, construction activities will be substantially less than the Project as analyzed in Chapter 7.
- Alternative 3 - Landside development Only Alternative-This alternative would include the construction of the same level of development as the Project, as well as the parking structure, so is not expected to materially, deviate from the Project in terms of its transportation effects. The pedestrian bridge would not be constructed, so on-site pedestrian circulation would change modestly, but would not cause a significant impact to this mode.
- Alternative 4 - No Property Exchange with the State-This alternative would include the same level of development as the Project, but the development would be located in a slightly different footprint. No material variation between this alternative and the Project is expected.
- Alternative 6 - Alternative Construction Phasing- Under this alternative, the overall amount and type of development on the site would be similar to the proposed Project, but construction would be delayed at various areas of the Project site, potentially not being completed until 2030. As detailed above in Chapter 1, forecast traffic volumes for the year 2030 were analyzed for the City of Redondo Beach using the SCAG Model. Based on the SCAG model forecast, average traffic volumes in the City are expected to decline by 2% relative to the base year model volumes. For a conservative analysis, the SCAG population growth rate (not traffic growth) was applied to traffic volumes to reflect near-term development (i.e. to the year 2019). However, in the long term in Redondo Beach, the transportation investments analyzed in the SCAG RTP/SCS are expected to result in lower traffic volumes citywide. Therefore, though Alternative 6 would be delayed in its construction, no changed to the resulting significant impacts are expected, and the results of this Alternative would be consistent with the analysis results of the proposed Project.

6. SENATE BILL 743 ANALYSIS

The State Office of Planning and Research (OPR) is currently developing revisions to the CEQA Guidelines under Senate Bill (SB) 743 for projects located in transit priority areas. The revised CEQA Guidelines will establish new criteria for determining the significance of transportation impacts and define alternative metrics to replace level of service (LOS). The legislation does not preclude the application of local general plan policies, zoning codes, conditions of approval, or any other planning requirements. SB 743 replaces LOS with vehicle miles travelled (VMT) related metric(s) and provides guidance on potential significance thresholds related to development projects, land use plans, and transportation infrastructure projects. While the regulations of SB 743 have not been finalized or adopted, several analyses were conducted to provide Project-related information.

6.1 SUSTAINABLE COMMUNITY STRATEGY (RTP/SCS) CONSISTENCY CHECK

Every four years, SCAG updates its Regional Transportation Plan (RTP) for the 191-city SCAG region. The RTP assembles a regional project list based on input from cities, counties, transit agencies, congestion management agencies, regional transportation planning agencies, and Caltrans. This project list is then combined with population and employment growth forecasts to project how future (a minimum of 20 years) travel, air quality, and greenhouse gas (GHG) conditions will change. Beginning with the 2012 RTP, SB 375 required the inclusion of a Sustainable Communities Strategy (SCS) in RTPs prepared by metropolitan planning organizations (MPOs) such as SCAG. The key goal of the SCS is to achieve GHG emission reduction targets through integrated land use and transportation strategies, although SB 375 did not require any modification of the regional project list contained in the RTP. Instead, the focus is on other transportation and land use strategies that influence vehicle travel; a key objective is for planners and developers to consider how land use patterns influence travel demand.

As part of the transportation modeling and analysis for the RTP/SCS, SCAG prepares population and employment growth projections by Transportation Analysis Zone (TAZ) and creates a future transportation network that represents the changes to the existing network based on the regional project list. TAZs are geographic polygons representing communities and neighborhoods at a sub-city level of detail. The proposed Project was compared against the RTP/SCS forecasts and network changes. The proposed Project may result in the reconnection of Pacific Avenue, and thus a change to the future transportation network. The transportation network as considered in the RTP/SCS provides detail only down to the collector roadway level. The Pacific Avenue reconnection will serve as a local road through the Project site, and so was not included in SCAG's analysis and does not represent an inconsistency with the RTP/SCS. Additionally, with-project comparison to the RTP/SCS is important so that projects do not result in the removal of

transportation facilities envisioned by SCAG to support future demand or a gross expansion in capacity beyond what will be needed. The reconnection of Pacific Avenue is neither of those, but simply provides for additional local connectivity which is today lacking.

6.2 CITY OF REDONDO BEACH GENERAL PLAN CONSISTENCY CHECK

The City of Redondo Beach's General Plan Circulation Element includes goals to reduce trip generation, promote bicycle and pedestrian modes and link existing and proposed bicycle facilities, create opportunities for physical activity, manage public parking effectively, and expand Transportation Demand Management (TDM) measures.

The Circulation Element includes a number of goals related to active transportation and alternative modes, including the promotion of alternative modes, the pursuit of bicycle and pedestrian priorities, the enhancement of bicycle infrastructure, and the creation of opportunities for physical activity. The proposed Project's location adjacent to the shoreline, where existing bicycle and pedestrian volumes are high, will expand recreational and retail opportunities for bicyclists and pedestrians, particularly for residents at adjacent residential developments east of the Project site. Bicycle access to the proposed Project will be available on designated facilities from multiple directions, including from the north, south, and east. Importantly, the proposed Project includes connection of a high-quality cycle track currently in development for Harbor Drive through the Project site to an existing Class I path located to the south. The Project also includes high-quality pedestrian facilities, including new pedestrian pathways, a new pedestrian bridge across Basin 3, wide sidewalks, pedestrian scale lighting, benches, and an enhanced crosswalk at the center of the Project site. Thus, the proposed Project is consistent with all Circulation Element goals related to active transportation.

The proposed Project’s increase land use intensity compared to existing conditions will result in a net increase of 12,550 daily vehicle trips per day. However, the Project’s mix of uses and location immediately adjacent to and within walking or bicycling distance of existing residential reduce the Project’s trip generation compared to a comparable project in another location. *The Market Study of the Proposed Waterfront Revitalization Study* prepared for the Project by AECOM determined that the residential and daytime populations close-in to the Project is very dense. The primary residential market, defined as a 10-minute drive time, is the largest source of sales for a retail center. The secondary market area, which is a 10-30 minute drive time, captures the majority of spending anticipated to occur from those residents outside the primary market area. The primary residential market area for the proposed Project had 48,732 households in 2014 and is projected to have 49,713 households in 2019, while the secondary market area had 162,550 households in 2014 and is projected to have 166,324 households in 2019. Relative to the employee market related to the Project area, regional and local employment growth provide a source of

demand for retail, office, and hotel component of the proposed Project. A 5-minute drive time was evaluated at the primary source of non-resident employee spending at the proposed Project, and was found to have 7,121 employees in 2014 and is projected to have 7,590 employees in 2019. A secondary market area was also established that evaluates a 10-minute drive time to the proposed Project was found to have 43,142 employees in 2014 and is projected to have 46,000 employees in 2019. These estimates exclude people who live and work in the market area as they are included in the residential market area. In addition to the aforementioned residential and employment markets, the Project site has a high daytime concentration of tourists in and from nearby areas. As will be discussed further in the section below, the average trip length for any trip type in the City of Redondo Beach is eight miles. Thus, though the proposed Project will result in new vehicle trips, it will not result in vehicles trips longer than the existing average. Thus, the Project is consistent with the Circulation Element goal to address the root causes of trip generation.

The Circulation Element also includes a goal to expand TDM programs that decrease the number of single-occupant vehicles (SOVs) on the road. The Project will enhance pedestrian and bicycle connectivity to and through the site, which will decrease the number of vehicle trips relative to a similar Project with limited pedestrian and bicycle connectivity. Additional TDM measures that could further reduce trips could include:

- Shuttles to/from the Metro Green Line Station
- Shuttles to/from LAX for hotel guests
- Transit pass subsidies, vanpool services, and other incentives to employees to reduce vehicle trips.

The Circulation Element also includes a policy to maintain LOS D at City intersections, where feasible. At a number of study intersections, Cumulative Base traffic volumes, and Project-related traffic worsens level of service beyond LOS D, including to LOS F. The Circulation Element notes that certain circumstances may outweigh the decision to accommodate more vehicle traffic, such as projects that provide high levels of bicycle and pedestrian activity.

The parcel on which the proposed Project site is located is zoned Coastal Commercial on the City of Redondo Beach's land use map. Coastal commercial land uses are intended to reflect and capitalize on the City's location along the Southern California coastline, and should accommodate attractive recreational and commercial uses which serve the year-long needs of residents and visitors. Additionally, in the City's Coastal Land Use Plan (LUP), the Harbor and Pier areas are designated as commercial and recreational assets for both the City and region, allowing for regional-serving public and commercial recreational facilities including uses such as hotels, restaurants, entertainment, retail sales and services, and boating facilities and services. The Waterfront area is currently under-utilized with large expanses of surface parking lots surrounding isolated uses. The proposed Project will better utilize Waterfront space through consolidated

parking and expanded commercial and recreational opportunities, as encouraged by the Land Use Element and the LUP. The proposed Project will substantially enhance the pedestrian- oriented nature of the Waterfront through street-facing developments, expanded pedestrian pathways, high-quality pedestrian crossings, and other pedestrian-oriented elements such as lighting, signage, and benches. Thus, the proposed Project is consistent with the City's General Plan Land Use Element. While the Project would not achieve a LOS D at all intersections, when reviewed against the totality of the goals and policies of the General Plan and the Circulation Element, the Project would be consistent with the General Plan as a whole.

6.3 VEHICLE MILES TRAVELED ESTIMATE/AVERAGE TRIP LENGTH EVALUATION

To evaluate total VMT for the Project, the average vehicle trip length for various trip types for the Project site TAZ were obtained from the both the SCAG travel demand model and for the entire City of Redondo

Beach from the California Household Travel Survey (CHTS) as a means to validate the SCAG model average trip length Due to the proposed Project's mix of uses, Project-related trips are expected to encompass home-based work trips, home-based other trips, and non-home based trips. For this reason, the average trip length for all trip types was selected for analysis with Project trips. The SCAG model average trip length of 8 miles was selected for the VMT estimates, because it is longer than the 6.6 mile average trip length of the CHTS data, so would represent a conservative estimate of daily VMT.

To calculate average daily VMT, the net new Project trip generation (calibrated using the MXD+ model) was multiplied by the 8 mile SCAG model average trip length of the TAZ, meaning that the Project's 12,550 daily net new vehicle trips will generate an average of 100,400 net new VMT per day over existing conditions. Based on the Project's estimated existing trip generation of 9,684 trips, existing VMT is estimated to be approximately 77,500 daily VMT.

The average vehicle trip length for the SCAG MPO is 8.8 miles. The average trip length for the Project calculated using either the SCAG travel demand model or the CHTS mean is shorter than the MPO-wide average. Therefore, the VMT of the Project is expected to be lower than a regionally comparable use, and as such is not expected to be a significant VMT impact based on anticipated SB 743 related impact criteria.

7. CONSTRUCTION PERIOD ANALYSIS

The City of Redondo Beach assessed the potential significance of construction period impacts based on the following criteria:

- Construction traffic impacts would be significant if substantial congestion, inconvenience to motorists, or hazardous conditions would be caused by the proposed project on a regular or frequent basis

Any work within the existing right of way would comply with City of Redondo Beach or CALTRANS permitting requirements (where applicable). This may include a traffic control plan which adheres to the standards set forth in the California Manual of Uniform Traffic Control Devices (2012).[16] As part of these requirements, there are provisions for coordination with local emergency services, training for flagman for emergency vehicles traveling through the work zone, temporary lane separators that have sloping sides to facilitate crossover by emergency vehicles, and vehicle storage and staging areas for emergency vehicles. MUTCD requirements also provide for construction work during off-peak hours and flaggers.

The City of Redondo Beach provides that construction activities are limited to the hours from 7:00 AM to 6:00 PM on weekdays and from 9:00 AM to 5:00 PM on Saturdays and holidays. No construction is permitted on Sundays.

The Project site can be generally be divided into two construction sites, the north site and the south site. North site construction and south site construction is divided between the International Boardwalk. Figure 9 shows the location of the north and south site construction locations. In addition, there are five other smaller construction areas included in the Project as well:

- Sportfishing Pier Replacement
- Small Boat Launch/Joe's Crab Shack
- Basin 3 Marina Replacement Assumptions
- Basin 3 Bulkhead Repair
- Seaside Lagoon Enhancement

[16] CALTRANS Manual on Uniform Traffic Control Devices available online at: http://www.dot.ca.gov/hq/traffops/engineering/mutcd/pdf/camutcd2012/CAMUTCD2012_TTC.pdf

7.1 CONSTRUCTION TRAFFIC

Construction of the Project is anticipated to begin in 2017 and is expected to take a total of approximately 2.25 to 2.5 years (27 to 30 months) to complete for both north site, south site, and additional project sites. The construction is anticipated to involve the following key phases:

- Mobilization (North Site Only) – 1 month
- Demolition – 2 months
- Site Utility Demolition – 2 months
- Retaining Wall (South Site Only) – 4 months
- Earthwork – 1 month
- Site Utilities - 1 month
- Structural Concrete – 0.5 month
- Parking Structure – 1 month
- Core and Shell – 0.5 months
- Parking Structure – 6 months
- Site Work – 8 months
- Interior Construction – 0.5 months
- Offsite Improvements (South Site Only) – 4 months

The construction of the north site, south site, and additional construction sites is expected to occur during the same construction time period. The peak construction activity for the north site includes the site utility work, structural concrete work, parking structure work, and core and shell work. The peak construction activity for the south site includes the utility demolition work, retaining wall, and earthwork. In addition, the construction at the additional sites was assumed to occur during the same peak periods of construction for the north and south sites mentioned previously.

7.2 CONSTRUCTION TRUCKS

Haul Trucks

Peak hauling activity for the north site and south site is anticipated to occur during timing of the north site utility work, structural concrete work, parking structure work, and core and shell work and the overlapping

south site utility demolition work, retaining wall, and earthwork on the south site would generate the single day with the highest number of trips.

The earthwork phase for each site occurs at different times, so both are not anticipated to be conducted simultaneously. The earthwork for the south site would occur in the peak construction activity period and involve the grading of approximately 80,000 cubic yards of earth and 161,115 square feet of building demolition space. This phase is expected to generate an average of approximately 110 haul trucks on the peak day of activity. The hauling activity is likely to use double belly dump haul trucks. Hauling hours are anticipated to be 7:00 AM to 3:00 PM on weekdays. Haul routes are illustrated in Figure 9.

The north side is accessible from Beryl Street and the south side is accessible from Torrance Boulevard. Access to both sites from the I-405 Freeway traverse Hawthorn Boulevard, 190th Street, Anita Street, and Catalina Avenue. For southbound access from I-405 Freeway, the truck haul route will utilize Artesia Boulevard to access the I-405. For northbound access to/from I-405 Freeway, the haul truck routes will utilize Redondo Beach Boulevard to access the I-405. Haul routes accessing the south site will continue along Catalina to Torrance Boulevard to enter from the south. Trips between both sites will utilize Beryl Street and Catalina Avenue and Torrance Boulevard.

The primary construction entrance for hauling is located at the southern portion of the project area accessible from Torrance Boulevard. The secondary construction entrance is located at the northern portion of the project area accessible from Beryl Street.

These trucks could impact the adjacent roadway network since the major roadways that will be used as a truck route for the Project already experience congestion during peak traffic periods.

Truck queuing will occur within the Project site.

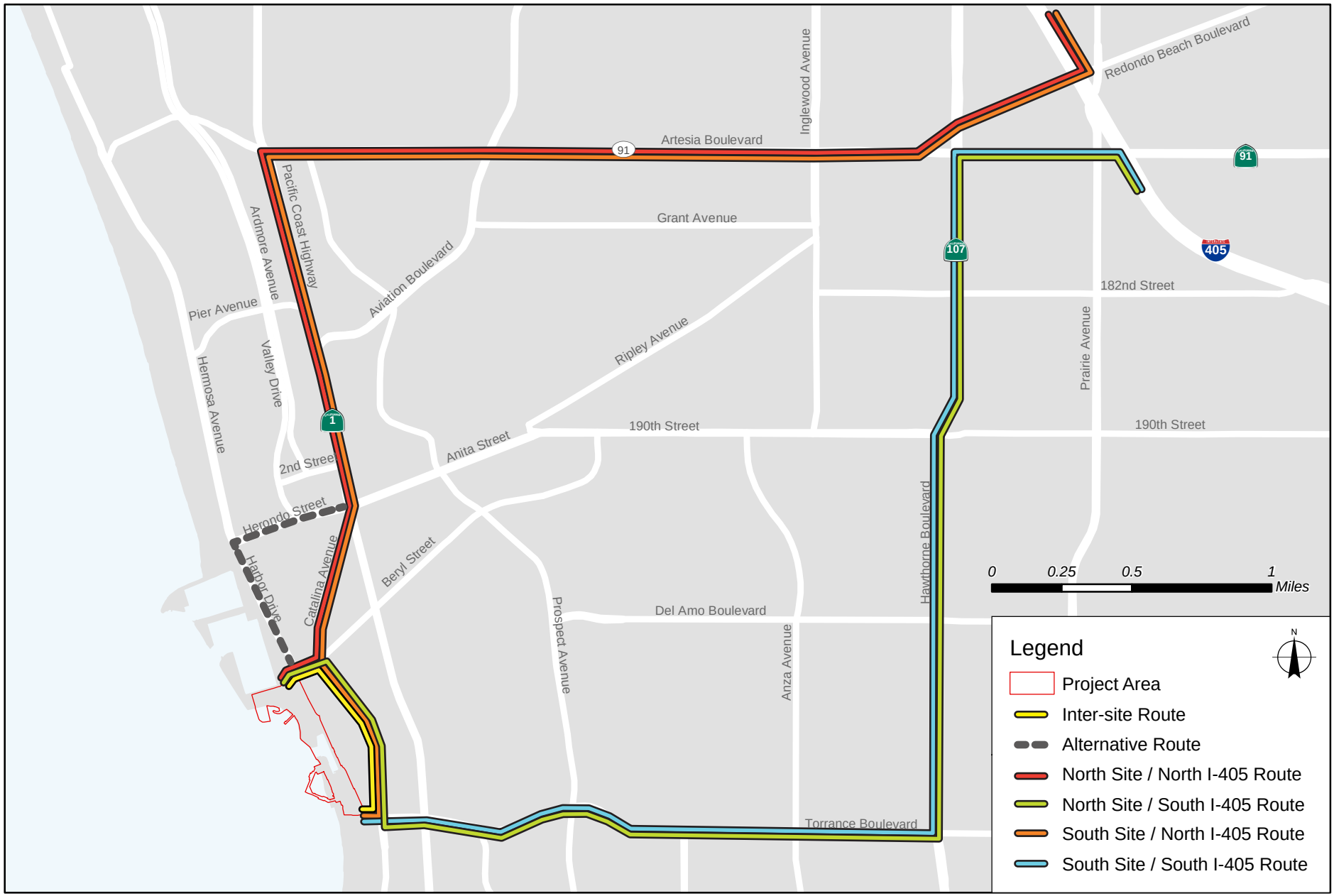

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Figure 9

Potential Haul Routes

Source: City of Redondo Beach, 2015

Equipment and Delivery Trucks

In addition to haul trucks, the site is expected to generate equipment and delivery trucks during each phase of construction. One example would be concrete delivery, which would be required for the parking garage and the buildings on-site. Other materials could include plumbing supplies, electrical fixtures, and items used in furnishing the buildings. These materials would be delivered to the site and stored on-site. These deliveries are expected to occur in variety of vehicles, including small delivery trucks to cement mixer trucks and 18-wheel trucks. Additionally, construction equipment would also have to be delivered to the site. This equipment could include cranes, bulldozers, excavators, and other large items of machinery. Most of the heavy equipment is expected to be transported to the site on large trucks such as 18-wheelers or other similar vehicles. Truck trips are documented below in Table 26.

Truck Staging

The Project proposes to provide adequate on-site staging for trucks through the construction period.

7.3 CONSTRUCTION EMPLOYEES

The number of construction workers would vary throughout the construction period. The maximum number of workers expected to be generated during the peak construction period is 280 workers on the north site and 153 workers on the south site, and a combined total of 187 workers on the additional construction sites (e.g. Basin 3, Seaside Lagoon, etc. Parking for all construction workers will be provided on-site during construction.

7.4 CONSTRUCTION PERIOD TRIP GENERATION

Based on the above information, a construction period trip generation analysis was conducted to estimate daily, morning and evening peak hour passenger car equivalent (PCE) trips. The construction of the north site, south site, and additional construction sites is expected to occur during the same construction time period. The peak construction activity for the north site includes the site utility work, structural concrete work, parking structure work, and core and shell work. The peak construction activity for the south site includes the utility demolition work, retaining wall, and earthwork. In addition, the construction at the additional sites was assumed to occur during the same peak periods of construction for the north and south sites mentioned previously. Combined, the peak construction period would generate a total of 620 daily round-trip worker vehicle trips and 131 round trip daily truck trips.

Construction workers often travel to and from a worksite outside of the typical peak commute hours. For the purpose of the analysis, it was assumed that up to 40% of the construction workers would arrive during the peak morning commute hour and up to 40% would depart during the peak evening commute hour. Haul and delivery/equipment trucks were assumed to occur evenly throughout the 8-hour construction day. A PCE factor of 2.5 was assumed for trucks.

Table 30 shows a summary of the maximum construction period trip generation. As shown, on a peak construction activity day, a total of up to 1,895 daily PCE trips are expected to occur, of which 328 PCE trips would occur during the morning peak hour and 328 PCE trips during the evening peak hour.

As detailed above, the existing site is estimated to generate 419 AM peak hour trips and 693 PM peak hour trips. During construction, Kincaid's restaurant is expected to remain open, but all other existing uses will not be in operation. Because the construction period is expected to generate fewer trips than the Existing site between the construction trips and trips from Kincaid's (construction trips shown in Table 30, existing trips shown in Table 7), no significant or cumulative impacts are expected during the construction period.

TABLE 30

PEAK CONSTRUCTION PERIOD TRIP GENERATION

Trip Type	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
North Site Worker Trips [a]	280 Workers/day	560	112	0	112	0	112	112
North Site Truck Trips [b]	2 Trucks/day	4	*	*	*	*	*	*
Passenger Car Equivalents (PCEs)		*10*	*	*	*	*	*	*
Subtotal		***570***	***112***	*******	***112***	*******	***112***	***112***
South Site Worker Trips [a]	153 Workers/day	306	61	0	61	0	61	61
South Site Truck Trips [b]	56 Trucks/day	112	7	7	14	7	7	14
Passenger Car Equivalents (PCEs)		*280*	*18*	*18*	*35*	*18*	*18*	*35*
Subtotal		***586***	***79***	***18***	***96***	***18***	***79***	***96***
Additional Construction Sites [a] [c]	187 Workers/day	374	75	0	75	0	75	75
Additional Construction Sites [b] [c]	73 Trucks/day	146	9	9	18	9	9	18
Passenger Car Equivalents (PCEs)		*365*	*23*	*23*	*45*	*23*	*23*	*45*
Subtotal		***739***	***98***	***23***	***120***	***23***	***98***	***120***
Total Trips		**1,895**	**288**	**40**	**328**	**40**	**288**	**328**

[a] Workers and visitors were assumed to arrive before 7:00 AM and depart after 3:00 PM. 40% of the worker trips were assumed to arrive and depart within the AM and PM peak hours.
[b] Truck trips were assumed to arrive and depart between 7:00 AM and 3:00 PM, an 8-hour work day.
[c] To be conservative, additional construction sites were assumed to be under construction at the same time as the north and south sites in the peak construction activity time period.

7.5 TEMPORARY LANE CLOSURES

The construction phase may include temporary intermittent lane closures along the following facilities adjacent to the Project site:

- On Portofino Way, construction activities including, sewer upgrades, grading, and street re-slurrying and restriping along the boundary with the project site could require a temporary detour for vehicle and pedestrian access and/or lane closures, generally during off-peak hours. Access would be maintained to existing active uses for vehicles and pedestrians.
- On Harbor Drive, re-slurrying and restriping of street adjacent to the project site could require temporary lane closures and/or intermittent detours generally during off-peak hours.
- At the Harbor Drive/Pacific Avenue intersection, regrading of the curved intersection would occur. A new curb and gutter and handicapped accessible ramp would be installed. This improved area would also be re-slurried and restriped. This work may require a temporary detour and/or intermittent lane closures for vehicle and pedestrian access generally during off-peak hours

A construction impact would be considered significant if substantial congestion, inconvenience to motorists, or hazardous conditions would be caused by the proposed project on a regular or frequent basis. Because the temporary lane closures would be intermittent and short term, access to existing active uses would be maintained, and detours would be provided as needed, the project's impact is expected to be less than significant.

7.6 WORKER PARKING

All construction employees will be parked on-site.

7.7 CONSTRUCTION CONDITIONS OF APPROVAL

While construction impacts are less than significant, the following conditions are recommended:

- A flagman shall be placed at the truck entry and exit from the Project site
- Deliveries and pick-ups of construction materials shall be scheduled during non-peak travel periods to the degree possible and coordinated to reduce the potential of trucks waiting to load or unload for protracted periods of time.
- Access shall remain unobstructed for land uses in proximity to the Project site during project construction.

- Minimize lane and sidewalk closures to the extent feasible. In the event of a temporary lane or sidewalk closure, a worksite traffic control plan, approved by the City of Redondo Beach, shall be implemented to route traffic, pedestrians or cyclists around any such lane or sidewalk closures.
- A Construction Management Plan shall be developed by the contractor and approved by the City of Redondo Beach. In addition to the measures identified above, a Construction Management Plan shall include the following:
- Schedule vehicle movements to ensure that there are no vehicles waiting off-site and impeding public traffic flow on the surrounding streets.
- Establish requirements for the loading, unloading, and storage of materials on the Project site.
- Coordinate with the City and emergency service providers to ensure adequate access is maintained to the Project site and neighboring businesses.

LEVEL OF SIGNIFICANCE

Construction traffic is not expected to add substantial congestion because it will generate fewer trips than are generated by the existing site. Construction trips would generally occur outside of peak hours, so would not regularly inconvenience motorists, and management of the construction site through a construction traffic management plan would avoid hazardous conditions, therefore no significant Project related construction impact is expected.

8. SUMMARY

This study was prepared to analyze the potential transportation impacts associated with the Redondo Waterfront Project. The following summarizes the results of the study:

- The Project as proposed consists of the demolition of approximately 207,402 square feet of existing structures, demolition of the existing Pier Structure, and construction/renovation of up to approximately 523,939 square feet (511,460 square feet of new construction and 12,479 square feet of existing development), totally 304,058 square feet net new development to include retail, restaurant, creative office, specialty cinema, a market hall, and a boutique hotel. The Project also would include public recreation enhancements such as a new boat launch ramp, modifications to Seaside Lagoon, new parking facilities, pedestrian and bicycle pathways, replacement of the timber portion of the Horseshoe Pier, and demolition and possible reconstruction of the Sportfishing Pier. Site connectivity would be improved by the establishment of a new pedestrian bridge across the Redondo Beach Marina Basin 3 entrance and the reconnection of Pacific Avenue.
- In consultation with City of Redondo Beach staff, the study area was initially selected to include the intersections most likely to be affected by traffic generated by the Project, specifically major intersections located within roughly a 3,000-foot radius of the Project site. However, with follow up coordination, it was determined that additional scope elements, as well as additional intersections beyond this area where potential Project-related significant transportation impacts could occur. A total of 41 intersections where identified for analysis, including 27 signalized intersections, and 14 stop controlled intersections. These intersections were analyzed using the ICU and HCM methodologies per City requirements.
- The Project's potential for significant traffic impacts were assessed against an Existing baseline (2013), as well as a Cumulative Baseline (2019).
- Compared to the Existing baseline, the Project is expected to have five significantly impacted intersections, and compared to the Cumulative baseline, the Project is expected to have six significantly impacted intersections. One of the intersections is a CMP arterial monitoring intersection. All intersections would be mitigated under Existing plus Project and Cumulative plus Project conditions. The CMP arterial monitoring intersection is expected to be fully mitigated.
- The Project is not expected to significantly impact regional freeway or transit facilities. Nor is it expected to significantly impact pedestrian and bicycle modes.
- The Project is expected to generate fewer vehicle miles travelled compared with a regionally comparable use, due to the location and characteristics of the Project.
- Three Project alternatives were quantitatively analyzed, including the No Pacific Avenue Reconnection Alternative, a Reduced Density Alternative, and several alternative sites for the Boat Launch Ramp. The differences between the transportation performance of the alternatives as compared with the Project are relatively minor.

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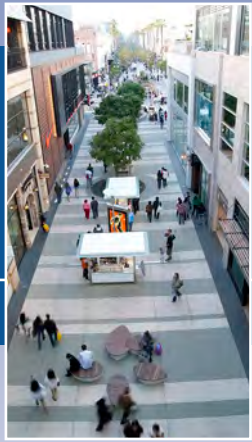
APPENDIX X-1**:** MXD MODEL DOCUMENTATION

GETTING TRIP GENERATION RIGHT

Eliminating the Bias Against Mixed Use Development

By Jerry Walters, Brian Bochner, and Reid Ewing



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Making Great Communities Happen

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When planners, developers, or traffic engineers conduct traffic impact analyses for proposed developments, they typically use the trip-generation data and analysis methods published by the Institute of Transportation Engineers (ITE) in its *Trip Generation* report and *Trip Generation Handbook*. However, standard traffic engineering practice does not account for project characteristics such as the mix and balance of land uses, compactness of design, neighborhood connectivity and walkability, infill versus remote location, and the variety of transportation choices offered. This can have significant implications when the project in question is a mixed use development.

The conventional methods used by traffic engineers throughout the U.S. to evaluate traffic impacts fail to account for the benefits of mixed use and other forms of lower-impact development. They exaggerate estimates of impacts and result in excessive development costs, skewed public perceptions, and decision maker resistance. These techniques overlook the full potential for internalizing trips through interaction among on-site activities and the extent to which development with a variety of nearby complementary destinations and high-quality transit access will produce less traffic. These effects can reduce the number of vehicle trips generated to a far greater degree than recognized in standard traffic engineering practice.

The ITE trip-generation data and analysis methods apply primarily to single-use and freestanding sites, which limits their applicability to compact, mixed-use, transit oriented developments (ITE 2004, 2012). The *Handbook* does include an approach based on limited data on mixed use developments, but only from six sites in Florida, not nearly enough to cover today's diverse mixed use developments across the United States.

It is important that planners and developers recognize the implications of using standard ITE trip generation data and methodologies for mixed use developments and use methods that more accurately estimate traffic generated by these projects. Commonly used methods unjustifiably favor types of development that consume greater resources and generate greater impacts, shifting our attention away from development forms and locations that stimulate higher levels of social interaction and benefit to established communities.

Researchers have attempted to analyze how a mix of uses in a compact, walkable project design affects trip generation and on-the-ground traffic impacts. In 2011, two major studies introduced methodologies for predicting traffic generation from mixed use development. The researchers on those studies have now collaborated to combine the advantages of both and provide, in this *PAS Memo*, an even more complete and reliable approach to measuring the benefits of such forms of development. Using this new approach, planners conducting trip-generation analysis for mixed use development projects will produce more accurate forecasts of traffic generation, which will allow more appropriate on-site design features and off-site mitigation measures.

The Problem with Conventional Traffic Impact Analysis

Traffic analysis is intended to inform planners, community members, and public officials of the most suitable planning features and infrastructure elements needed to support new development. However, the conventional methods were developed during an era when most new development was single use, stand alone, highway oriented, and suburban. Standard practices ascribe similar levels of impact to mixed-use, integrated, transit-oriented, and infill development, and consequently overlook the benefits of — and impose unreasonable obstacles to — appropriate planning and approval of such "smart growth" forms.

The standard analytic process used for planning, design, and impact analysis does not account for the degree to which well-designed mixed use development places shops, restaurants, offices, and residences in close proximity to one another, shortening internal trips between them and making more trips conducive to walking, biking, or riding transit. Such reductions in traffic and vehicle miles traveled reduce fuel consumption, greenhouse-gas and other emissions, and exposure of residents to passing traffic and the related threats to comfort, health, and safety. Reduced vehicular travel can also lessen the need to construct new or wider streets and highways, allowing communities to economize on infrastructure. Mixed use developments (MXD) also create opportunities for shared parking, which can reduce the number of spaces needed in parking lot and garage construction.

Traffic-Reducing Attributes of Mixed Use Development

Many of the attributes of lower-impact development can reduce traffic generation compared with conventional single-use suburban development forms:

Diverse land uses and activities can fill basic needs nearby, thereby reducing automobile travel. They allow for linkage of trips in multipurpose trip chains, with a single auto trip to an activity center followed by several short trips on foot. Mixed use sites also create the opportunity for shared parking, which in turn encourages multipurpose trips and reduces the tendency to make separate automobile trips from one destination to the next.

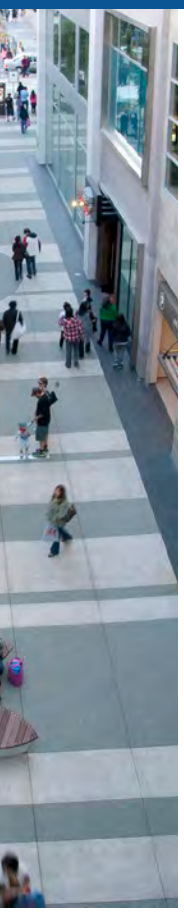
Higher densities and intensities of development provide opportunities for residents, employees, and visitors to circulate among larger numbers of businesses and activities by walking, bicycling, or making short trips by automobile. Higher concentrations of land use also support higher quality and higher-frequency transit service, offering tenants and visitors a viable alternative to driving. High land values and cost to provide parking also leads to higher parking prices, a disincentive to driving versus other available modes of travel.

Walkable urban design and interconnected streets generally reduce the perceived and real separation among destinations, encourage walking and cycling, and reduce the circuitousness and length of each trip.

Short distances to transit help make transit a viable alternative to the automobile and can create activity centers with sufficient street life, amenities, and walking connections where needs and entertainment can be accomplished without independent car trips.

Accessibility to complementary destinations outside the development reduces distances between jobs and housing, services and entertainment, and recreation, often making automobile travel unnecessary. Placed at infill locations, complementary new development that satisfies local needs can also reduce trip making by residents, employees, and shoppers in the surrounding community.

Socio-demographic compatibility can further reduce auto traffic to the extent that developments are designed to attract and accommodate residents with low auto ownership (through, for example, parking supply limits), low travel needs (based on, for example, family size,



fewer employed residents, lower income, or age range), or close affiliation with other project elements or surrounding land uses (linked, or simply compatible, jobs and residents).

Scale of development affects feasibility for communities and employers to provide travel demand options and management services that can shift traveler modes from the auto to alternative modes of travel. Residents and businesses that self-select into such sites and settings are also often more amenable to travelling less or using alternatives to the automobile. Transportation demand management (TDM) programs are both more likely to be available and more likely to be successful in compact, central, transit-supported settings.

The danger of using traditional traffic-generation data based on single-use facilities is that it misrepresents the true traffic generation impacts of mixed use development. The consequences of miscalculating the benefits of mixed-use development may include unreasonable development cost, exaggerated impacts and mitigation responsibilities, skewed public perceptions, and decision maker resistance. This penalizes mixed use development proposals, often tipping the balance in favor of projects that offer fewer benefits and ultimately generate higher impacts. Denying "smart" forms of development does not reduce the overall market demand for housing and business, so the building disallowed ends up in other locations within the region, often in less accessible locations, at lower densities, and in less-mixed use configurations. The end result can be more traffic and higher regional vehicle-miles traveled than had the smart-growth development been approved.

Understandably, communities and public reviewers want to minimize the risk of unmitigated impacts. However, doing so through the application of overly conservative project evaluation criteria undermines the pursuit of other community values, such as vibrant neighborhoods with integrated development and activities that minimize the need to travel and the impacts produced by excessive unnecessary use of the automobile.

Conservative traffic-generation estimates have supply-side impacts, affecting design and cost of streets and parking. Within constrained sites, over design of traffic elements can limit the space available for revenue-producing land uses and increase other development costs. Development fee programs also rely heavily on traffic-generation estimates from the ITE *Trip Generation Manual*; this can lead to setting excessively high fee rates on mixed use development. Unquestioning use of the ITE data can unreasonably jeopardize a MXD project's approval, financial feasibility, and design quality.

Mixed use sites can take many forms, but all offer a diversity of uses in walkable settings. Oakland City Center BART (left); RiverPlace, Portland, Oregon (opposite page).

of walking and biking and allows for shared parking.

Design: connectivity, walkability. Good design improves connectivity, encourages walking and biking, and reduces travel distance.

New Research Evidence for Mixed Use Development Trip Generation

Several hundred studies over the past 20 years have confirmed that the built environment affects travel generation (Ewing and Cervero 2010). Development features associated with reduced trip rates include a series of "D" variables: density, diversity of uses, design of urban environment, distance from transit, destination accessibility, development scale, demographics of inhabitants, and demand management. In the past three years, research has examined more directly the relative influence of each factor and their interactions and has sought to corroborate the research results through field verification. Organizations such as the U.S. Environmental Protection Agency and the National Academy of Sciences Transportation Research Board have sponsored several of the more reputable studies on the subject.

The Eight "D" Variables

The most advanced research has confirmed that trip rate reductions are quantifiably associated with the attributes of mixed use development, defined in terms of these characteristics of urban development patterns:

Density: dwellings, jobs per acre. Higher densities shorten trip lengths, allow for more walking and biking, and support quality transit.

Diversity: mix of housing, jobs, retail. A diverse neighborhood allows for easier trip linking and shortens distances between trips. It also promotes higher levels

Destinations: regional accessibility. Destination accessibility links travel purposes, shortens trips, and offers transportation options.

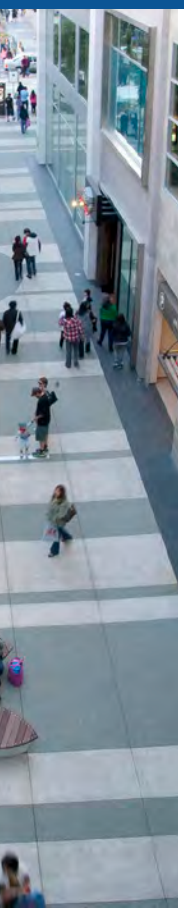
Distance to Transit: rail proximity. Close proximity to transit encourages its use, along with trip-linking and walking, and often creates accessible walking environments.

Development Scale: residents, jobs. Appropriate development scale provides critical mass, increases local opportunities, and supports transit investment.

Demographics: household size, income. Mixed use development allows self-selection by households into settings with their preferred activities and travel modes, allows businesses to locate convenient to clients, and supports a socioeconomic "fit" among residents, businesses, and activities.

Demand Management: pricing, incentives. Demand management ties incentives to the urban environment and allows alignment of auto disincentives with available alternate modes. It takes advantage of critical mass of travel resulting from density, diversity, and design.

A growing body of evidence indicates that these factors, individually or together, quantifiably explain the number of vehicle trips and vehicle-miles traveled for a development project and for a region as a whole. Each of the D factors influences traffic generation through a variety of mechanisms. There are also important interactions, both synergistic and mutually dampening, among the D factors that call for sophisticated techniques when quantifying the travel generation effects of different combinations proposed in any project or plan.



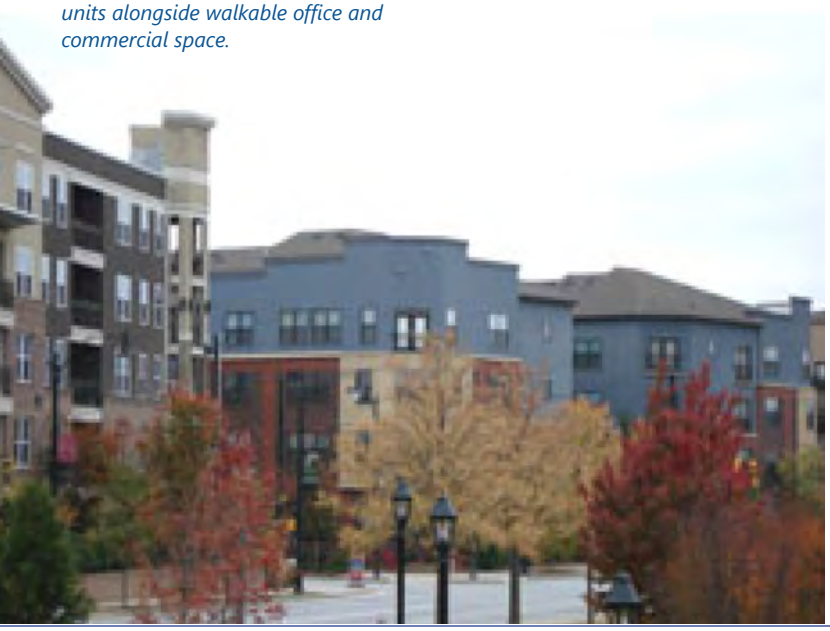
The Evidence that Conventional Methods Overstate MXD Impacts

Empirical evidence and research provides evidence that mixed-use, infill, and transit-oriented developments generate fewer external vehicle trips than equivalent stand-alone uses. A nationwide study sponsored by the U.S. EPA (Ewing et al. 2011) found statistical correlation between the D factors and increased trip internalization and increased walking and transit use. It further demonstrated, for 27 mixed-use development sites across the U.S., that:

1. On average, the sites' land uses would generate 49 percent more traffic if they were distributed among single-use sites in suburban settings, the situations to which the ITE *Trip Generation Manual* would apply.

2. The ITE *Handbook*, the current state-of-practice resource for estimating mixed use trip generation, would overestimate peak hour traffic by an average of 35 percent.

Atlantic Station offers residential units alongside walkable office and commercial space.



The following examples from recent studies demonstrate the degree by which such developments reduce traffic generation relative to what would be presumed under conventional traffic analysis methods.

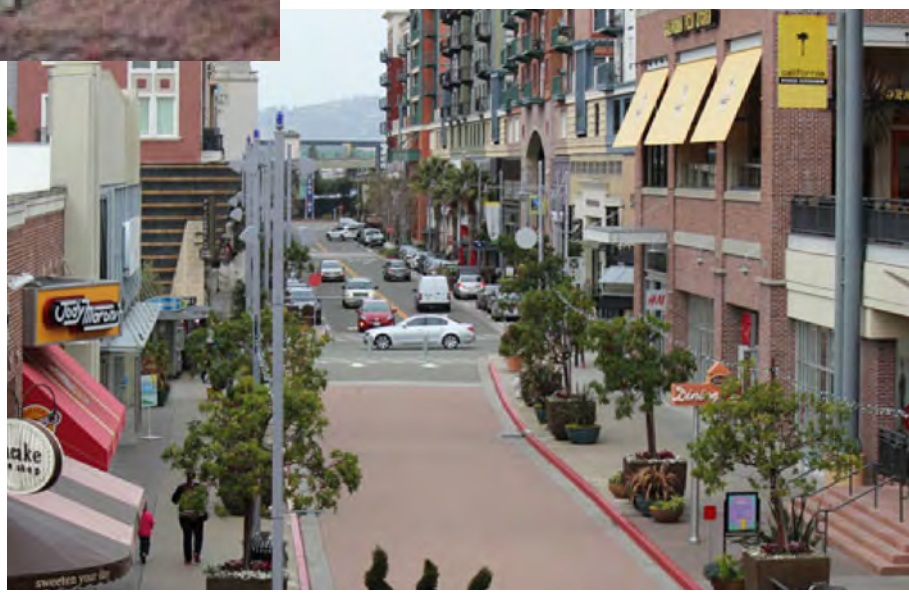
Atlantic Station in Atlanta is a major mixed-use infill development located on a 138-acre former brownfield site in midtown Atlanta, connected by nonstop shuttle service to a MARTA metro rail station about a half-mile away. At the time it was studied, the development included 798 mid- and high-rise residential units, 550,600 square feet of office space, 434,500 square feet of retail space, a 101-room hotel, a restaurant, and a cinema.

For Atlantic Station, the "internal capture rate" (proportion of generated trips that remain internal to the site) is 15 percent in the morning peak hour and about 40 percent of evening peak-hour. Of the trips entering and leaving the site, between 5 and 7 percent use transit and another 5 to 7 percent walk or bicycle.

According to standard ITE trip-generation rates, were the Atlantic Station development elements located at single-use suburban sites, they would generate 37 percent more weekday traffic and 69 percent more PM peak traffic than actually counted at the centrally located, mixed use site.

RiverPlace in Portland is an award-winning mixed use waterfront development on a former brownfield within easy walking distance of downtown Portland, Oregon. Adjacent to the Tom McCall Waterfront Park, the site contains 700 residential units (condominiums and apartments), 40,000 square feet of office space, 26,500 square feet of small retail shops and restaurants, a 300-room hotel, and a marina, cinema, and athletic club. The waterfront walking environment conveniently links all of the activities within the development site and connects the site to the Portland central business district. Transit is also available at the site; the Portland Streetcar connects RiverPlace to downtown Portland and the greater Portland area.

RiverPlace (left) offers a mix of residential, office, and commercial uses on Portland's waterfront. Photo courtesy Fehr & Peers. Bay Street's walkable urban village (below) is designed on a Main Street theme.



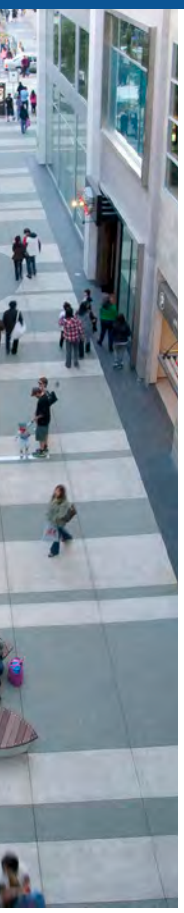
RiverPlace's internal capture rate is 36 percent. For internal and external trips combined, 40 percent are by walking and 5 percent by transit. These statistics are significantly higher than the regional averages of 15 percent of trips taken by walking and 2 percent by transit.

Bay Street in Emeryville is a vibrant, thriving recent redevelopment project in Emeryville, California, just outside San Francisco. The previously heavy-industrial area within and around Bay Street has undergone dramatic revitalization in the past two decades, and it now includes the headquarters of Pixar Studios and other businesses. Bay Street itself is a one-million-square-foot walkable urban village designed on a Main Street theme. It contains a major theater complex, hotel, and 382,000 square feet of fashionable retail shops (including an Apple Store) with 381 apartment units and offices above. The site is within walking distance of a Capitol Corridor commuter rail station and within a shuttle bus ride of BART metro rail.

Bay Street's daily traffic generation is about 41 percent less than the combined total that would be generated by similarly sized suburban shopping centers, theater complexes, residential uses, and office developments based on standard ITE trip rates for stand-alone land uses. It also generates 36 percent less daily traffic than would be estimated by traffic engineers applying the ITE *Handbook* and conventional analysis methods. In the PM peak hour, Bay Street traffic generation is 46 percent lower than would be generated by the same land uses scattered on individual suburban sites, and 41 percent lower than would be estimated by standard ITE traffic analysis.

New Models for Mixed Use Development Traffic Analysis

To address the shortcomings in conventional analysis methods, the National Cooperative Highway Research Program (NCHRP) and the U.S. EPA recently conducted significant research studies to improve quantification of the trip-reducing effects of mixed use development. Each study took a different approach: NCHRP undertook extensive visitor surveys and traffic counts at Atlantic Station and two mixed-use developments in Texas (Bochner et al. 2011), while EPA sponsored a nationwide study of more than 260 mixed use developments across the U.S. using regional travel survey data and verification traffic counts at a subset of the sites (Ewing et al. 2011). Using different analysis methods, each study developed a recommended approach to discounting traffic generation estimates to account for the mix of uses and other development characteristics. Each study represents a major advancement over conventional analysis methods.



NCHRP Report 684

National Cooperative Highway Research Program (NCHRP) Report 684, "Enhancing Internal Trip Capture Estimation for Mixed-Use Developments," analyzed internal-capture relationships of MXD sites and examined the travel interactions among six individual types of land uses: office, retail, restaurant, residential, cinema, and hotel. The study looked at three master-planned developments: Mockingbird Station, a single-block TOD in Dallas; Legacy Town C enter, a multiblock district in suburban Plano, Texas, containing fully integrated and adjacent complementary uses; and Atlantic Station (see above). It compared the survey results to those found in prior ITE studies at three Florida sites, Boca del Mar, Country Isles, and Village Commons, all containing a variety of land uses, though in single-use pods.

Based on traveler and vehicle counts and interviews, the study ascertained interactions among the six land-use types of interest and compared them with site characteristics. It then examined the percentage of visitors to each land-use type who also visited each of the other uses during the same trip. The study considered site context factors and described percentage reductions in sitewide traffic generation that might result from the availability of transit service and other factors.

Researchers then performed verification tests by comparing the analysis results to those available from ITE for three earlier studies at Florida mixed use sites. The validation confirmed that the estimated values were a reasonable match for actual counted traffic. The product of the study is a series of tables and spreadsheets that balance and apply the discovered use-to-use visitation percentages to the land uses within the project site under study. The interaction percentages are then used to discount ITE trip-generation rates and to reduce what would otherwise represent the number of trips entering and leaving the entire site.

EPA MXD

The U.S. EPA–sponsored 2011 report, "Traffic Generated by Mixed-Use Developments — A Six-Region Study Using Consistent Built Environmental Measures," investigated trip generation, mode choice, and trip length for trips produced and attracted by mixed use developments. Researchers selected six regions — Atlanta, Boston, Houston, Portland, Sacramento, and Seattle — to represent a wide range of urban scale, form, and climatic conditions. Regional travel survey data with geographic coordinates and parcel-level detail available for these areas allowed researchers to isolate trips to, from, and within MXDs and relate travel choices to fine-grained characteristics of these developments.

In each region, researchers worked with local planners and traffic engineers to identify a total of 239 MXDs that met the ITE definition of multi-use development. The MXDs ranged from compact infill sites near regional cores to low-rise freeway-oriented developments. They varied in size, population and employment densities, mixes of jobs and housing, presence or absence of transit, and locations within their regions. In total, the MXD sample for the six regions provided survey data on almost 36,000 trips.

The analysis found that one or more variables in each of seven D categories (see above) were statistically significant predictors of internal capture, external walking, external transit use, and external private vehicle trip length. Specifically, an MXD's external traffic generation was related to population and employment within the site (density); the relative balance of jobs and housing within the site and the amount of employment within 1 mile of the site (diversity); the density of intersections within the site as a measure of street connectivity (design); the presence of bus stops within a quarter mile or the presence of a rail station (distance from transit); employment within a mile of site boundaries and percentage of regional employment within 20 minutes by car, 30 minutes by car, and 30 minutes by transit (destination accessibility); the gross acreage of the development (development scale); and the average number of household members as well as

household vehicle ownership per capita(demographics). The accuracy of the EPA MXD method was verified through traffic generation comparisons at 27 mixed-use sites across the U.S.

The EPA MXD product is a series of equations and instructions captured in a spreadsheet workbook. The methodology calculates the percentage reductions in ITE trip generation resulting from the national statistical analysis of seven D effects on internal trip capture, walking, and transit use. The spreadsheets produce reduced estimates of traffic generation on a daily basis and for peak traffic hours.

Combining the Approaches

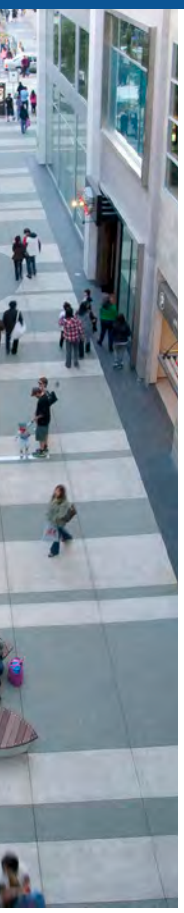
The NCHRP 684 method and EPA MXD method each derive from different research approaches and produce different methods of analyzing trip generation at mixed use developments. They focus on overlapping but not identical aspects of mixed-use development sites and their contexts and offer respective strengths and weaknesses in terms of factors considered and ease of application. Selecting which method to employ under different circumstances requires both a comparison of their capabilities as well as professional judgment of their respective strengths and weaknesses.

Report 684 includes a refined assessment of on-site land-use categories, specifically recognizing the roles of restaurants, theaters, and hotels within the site land-use mix, along with an adjustment to account for the spatial separations among individual land uses within the development site. It is directly useful for the evaluation of proposed development sites that are similar to the one or more of the three surveyed in Atlanta and Texas for the report. However, it is not responsive to factors such as regional location, transit availability, density of development, walkability factors, and the socio-demographic profile of site residents and businesses.

In contrast, the EPA MXD method accounts directly and quantitatively for these factors. However, while it accounts for the balances of retail, office, and residential development, it does not explicitly differentiate subcategories such as restaurants, theaters, and hotels. Furthermore, it requires the analyst to account for off-site development, including employment within a one-mile radius of the MXD and the number of jobs available within 30 minutes of the site.

To develop a method that captures the best of both sets of research findings, the authors of the two original studies decided to collaborate on an integrated method that recognizes the full array of on-site and context characteristics that contribute to traffic reduction and, through a focus on empirical verification, achieves greater accuracy than either method individually.

In developing the integrated approach, we compared the performances of the methods to actual traffic counts at a diverse group of mixed use developments in a variety of settings. The 27 verification sites were successful mixed-use development, exhibiting moderate to high levels of activity in terms of business sales, occupied residential units, property value, and household income, with average or above-average person trips, at the time of the survey. They included those studied for NCHRP 684, the sites used as the basis for the ITE *Trip Generation Handbook*, and others surveyed by Fehr & Peers, transportation consultants. Six of the 27 sites were located in Florida, and three were located in Atlanta and Texas. Three of these nine were nationally known examples of smart growth or transit-oriented development: Atlantic Station, Mockingbird Station, and Celebration, Florida. Six sites were located in San Diego County and were designated by local planners and traffic engineers in 2009 as representing a wide range of examples of smart growth trip generators in that region. The 12 remaining sites were MXD developments located elsewhere in California and in Utah, ranging from TOD sites (commuter rail and ferry) to conventional suburban freeway-oriented mixed use sites.



A New Approach: The MXD+ Method

The new analytical approach, the MXD+ method, combines the strengths of NCHRP 684 and EPA MXD. The authors sought to (1) address the fact that each method has strengths relative to the other, (2) create a method that is more accurate than either of the individual methods alone, and (3) reduce confusion among practitioners on which is the most appropriate method.

The proposed MXD+ method incorporates the underlying data sources and logic that the two methods share. It offers the ability to assess the effects of spatial separation of uses and recognition of more specific land-use categories and to consider the dynamic influences of local development context, regional accessibility, transit availability, development density and walkability factors, and the characteristics of residents.

To develop the preferred method, the authors experimented with different methods of integrating the two methods and arrived at a direct calibration approach. The appropriate combination of the results of the two individual methods was determined through regression analysis to identify the proportions that provided the best correlation with the traffic counted at the 27 validation sites. Table 1 presents results from the regression analysis, listing the proportions of the two methods found most effective at matching the traffic generation at the diverse set of mixed use validation sites. Weighting the results of the two individual analyses by the percentages in Table 1 and combining the results produces more accurate estimates of traffic generation and captures the effects of all of the site description variables included in the NCHRP and EPA methods.

TABLE 1 **OPTIMAL BLEND OF NCHRP 684 AND EPA MXD METHODS**

	AM PEAK TRAFFIC	PM PEAK TRAFFIC	AVERAGE DAILY TRAFFIC
NCHRP 684	10.1%	36.5%	n/a
EPA MXD	89.9%	63.5%	100%

The step-by-step method is as follows:

1. Apply the full EPA MXD methodology to predict external traffic generation as influenced by site development scale, density, accessibility, walkability and transit availability, resident demographics, and general mix of uses.

2. Apply the full NCHRP 684 method to capture the effects of detailed land-use categories, including hotel, theater, and restaurant, and the spatial separation of uses within small and medium sites.

3. Combine the results of the two methods in terms of percentages of trips remaining internal to the development site, using proportioning factors presented in the table above.

4. Apply adjustments to account for off-site walking and transit travel using the EPA MXD method.

5. Discount standard ITE traffic-generation rates by the percentages of internalization produced in step 3 and the percentage of walk and transit travel in step 4 to obtain the estimate of site- generated traffic.

TABLE 2 COMPARISON OF THREE PRINCIPAL METHODS IN TERMS OF PROJECT CHARACTERISTICS CONSIDERED			
	EPA MXD METHOD	NCHRP 684 METHOD	MXD+ METHOD
Project Characteristics Considered			
Density of Development	♦		♦
Diversity of Uses: Jobs/Housing	♦	♦	♦
Diversity of Uses: Housing/Retail		♦	♦
Diversity of Uses: Jobs/Services		♦	♦
Diversity of Uses: Entertainment, Hotel		♦	♦
Design: Connectivity, Walkability	♦	♦	♦
Design: Separation Among Uses		♦	♦
Destination Accessibility by Transit	♦		♦
Destination Accessibility by Walk/Bike	♦		♦
Distance from Transit Stop	♦		♦
Development Scale	♦		♦
Distance from Transit Stop	♦		♦
Development Scale	♦		♦
Demographic Profile	♦		♦
Data Needs (beyond Project Site Plan)			
Average Residents per Dwelling Unit	♦		♦
Average Autos Owned per Dwelling Unit	♦		♦
Nearby (1/4 mi) Bus Stops and Rail Stations	♦		♦
Jobs Within 1 Mile of Site	♦		♦
Jobs Within 30-Minute Transit Trip	♦		♦
Regional Employment	♦		♦
Located in CBD or TOD?	♦		♦
Site Development by Classification		♦	♦
Vehicle Occupancy Estimate		♦	
Mode Split Estimate		♦	

As Table 2 indicates, the MXD+ method improves traffic generation estimates by considering the full array of 12 site development and context characteristics shown to influence internal capture and mode share, while the individual methods consider only 5 to 8 factors each. Effects considered in MXD+ that are not included in the NCHRP 684 method include household size and auto ownership, site proximity to bus and rail stops, and accessibility to local and regional jobs. Effects considered in the NCHRP 684 method that do not appear in the EPA MXD method include specific land uses and proximity of interacting land uses to each other.

Table 3 presents the statistical performance of the MXD+ integrated method with the individual performance of the individual NCHRP 684 and EPA MXD methods. We compared the ability of each of the available methods to replicate the amount of traffic generated at the 27 validation sites in terms of statistical measures including percent root mean squared error, a metric used in the transportation field to evaluate model accuracy, and the coefficient of determination (or "R-squared"), which measures the ability of the analysis method to account for the variations in traffic generation among the 27 survey sites. For daily traffic generation, MXD+ is equivalent to the EPA MXD method, as the NCHRP 684 method does not address daily analysis. For peak hour traffic generation, MXD+ performs notably better than either of the individual methods.

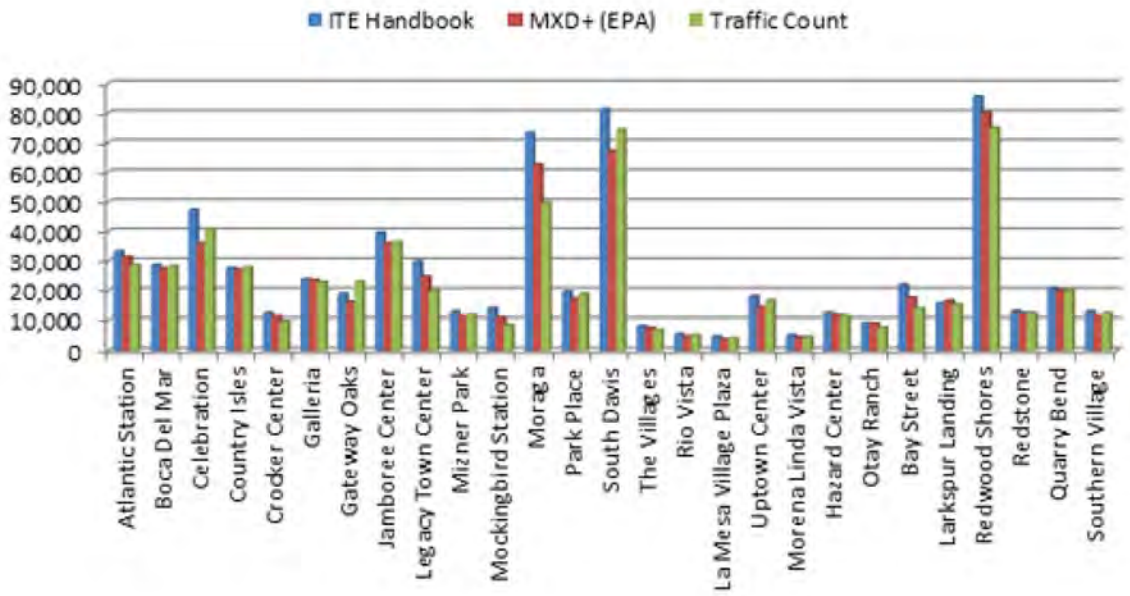
TABLE 3 **COMPARISON OF THREE PRINCIPAL METHODS IN TERMS OF PERFORMANCE AT VALIDATION SITES**

	EPA MXD METHOD	NCHRP 684 METHOD	MXD+ METHOD
Daily Traffic Generation			
R-squared	96%	89%*	**96%**
Average Error	2%	16%*	**2%**
Root Mean Square Error	17%	27%	**17%**
AM Peak Traffic Generation			
R-squared	97%	93%*	**97%**
Average Error	12%	30%	**12%**
Root Mean Square Error	21%	33%	**21%**
PM Peak Traffic Generation			
R-squared	95%	81%	**97%**
Average Error	8%	18%	**4%**
Root Mean Square Error	18%	36%	**15%**

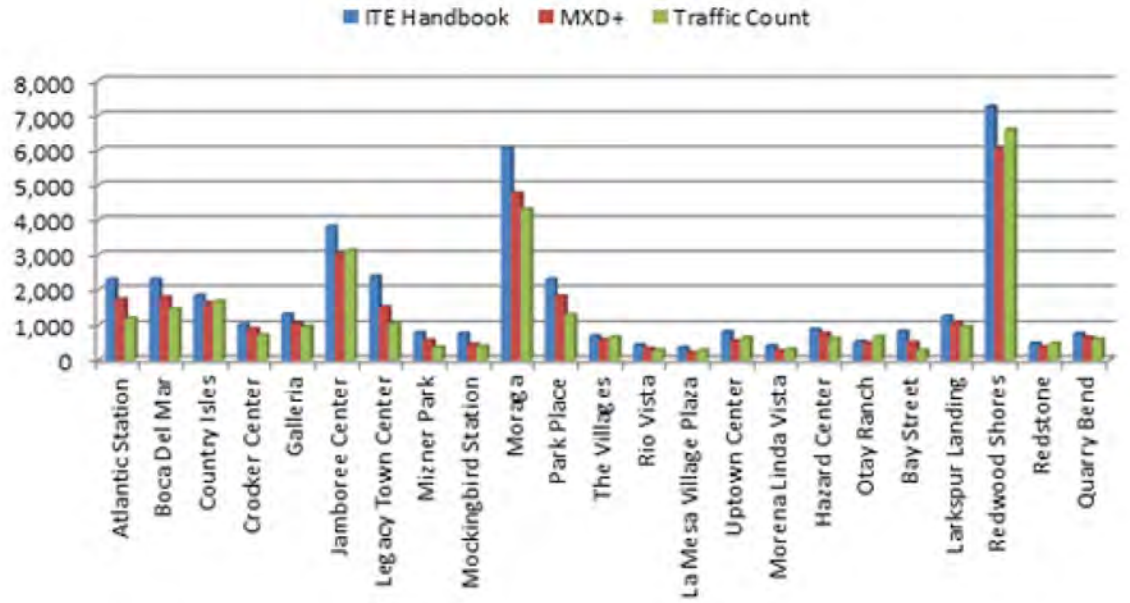
** ITE Handbook internalization statistics (NCHRP 684 method does not address daily trip generation)*

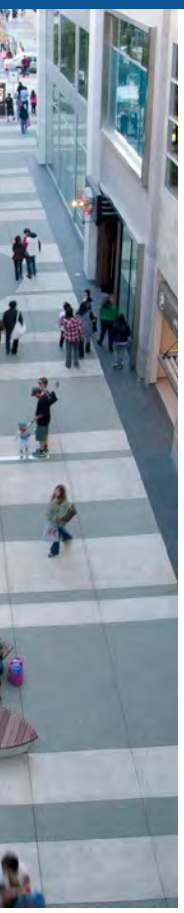
The graphs on the following page compare the performance of the MXD+ method to the ITE *Handbook* method at replicating traffic generation at the diverse group of mixed-use validation sites. Compared with the ITE *Handbook*, MXD+ method more accurately matches the amount of daily traffic actually counted at 20 of the 27 survey sites. In the AM peak hour, it is more accurate than the ITE Handbook at 21 of the 24 sites for which counts were available, and in the PM peak hour, MXD+ is more accurate than the ITE *Handbook* method at 23 of 25 sites.

DAILY TRAFFIC GENERATION COMPARISON OF ITE HANDBOOK & MXD+ METHODS

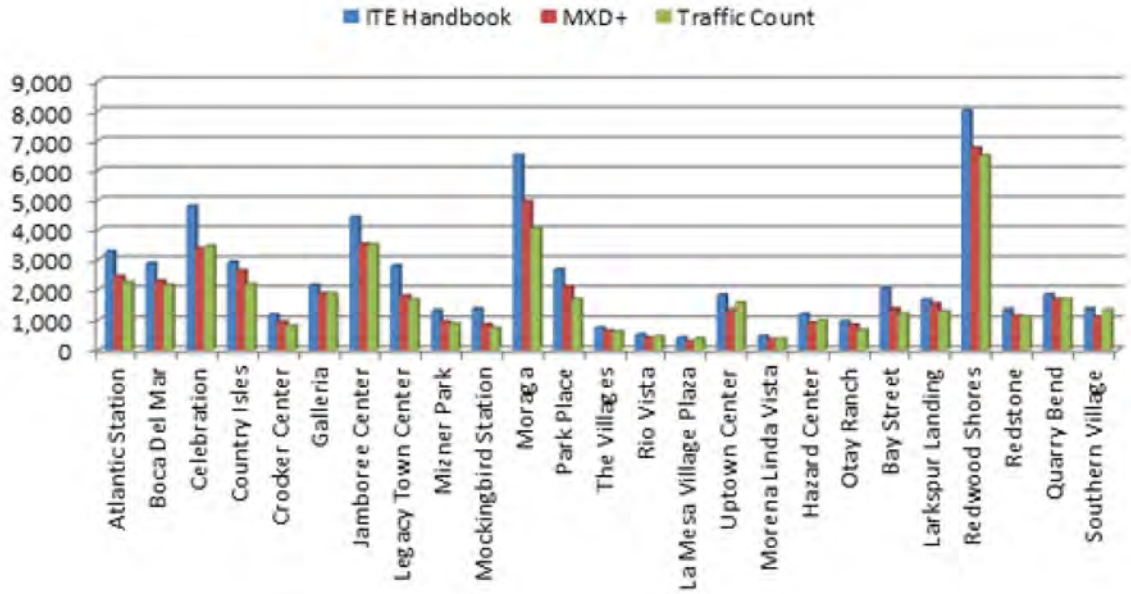


AM PEAK HOUR TRAFFIC GENERATION COMPARISON OF ITE HANDBOOK & MXD+ METHODS





PM PEAK HOUR TRAFFIC GENERATION COMPARISON OF ITE HANDBOOK & MXD+ METHODS



The MXD+ method explains 97 percent of the variation in trip generation among mixed-use developments, compared with 65 percent for the ITE *Handbook* method. On average, the *Handbook* overestimates AM peak traffic generation by 49 percent, compared with 12 percent for MXD+. For the PM peak hour, the ITE *Handbook* overestimates actual traffic by 35 percent. The MXD+ method reduces this to 4 percent, remaining slightly conservative and unlikely to understate impacts.

By combining and refining the two most advanced methodologies for estimating traffic generation for mixed-use development, the MXD+ method provides transportation planners and engineers a more accurate single approach that accounts for the most important factors that distinguish lower impact development from other forms. Doing so advances development planning and impact assessment beyond the practices that have, to date, unreasonably discouraged mixed-use development.

Recommendations for Planners

We recommend that planners adopt the latest methods for evaluating traffic generation of mixed use and other forms of smart growth, including infill and transit-oriented development. The MXD methods developed under the U.S. EPA multiregional study and the NCHRP 684 study on enhancing trip-capture estimation each represent substantial advances to the conventional practices previously available through ITE. Combining the two new methods, as described above, improves upon both individual methods. Tools for all three approaches are available for use through the references and resources listed below.

Traffic engineers are beginning to take notice of the new methods, but we expect that natural sluggishness in adopting new practices will continue to impose unfair penalties on mixed use and other forms of lower-impact development. We recommend activism on the part of all planners, development reviewers, and impact analysts on behalf of the more accurate MXD methods.

Immediate adoption of the improved methods will allow planners to account for a project's regional location, transit availability, density of development, walkability factors, and the characteristics of residents and businesses and on-site adjacencies of land uses including residential, office, retail, restaurants, theaters, and hotels. Accounting for these factors through the MXD+ method will achieve the highest levels of accuracy possible in estimating traffic impacts of mixed use development.

We recommend applying and promoting the MXD+ method for day-to-day project planning and performance-based site-plan refinement, impact analysis, and discretionary review. Doing so will eliminate what is presently a systematic bias in traffic analysis that favors single-use, isolated, suburban-style development.

Conclusion

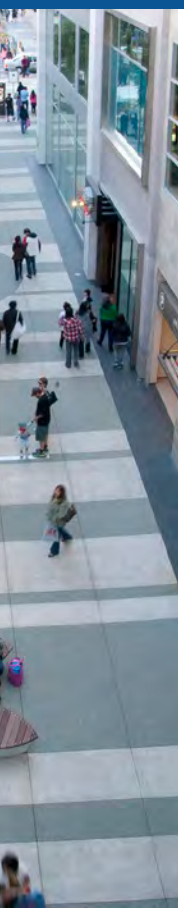
Standard traffic engineering practices are blind to the primary benefits of smart growth. A plan's development density, scale, design, accessibility, transit proximity, demographics, and mix of uses all affect traffic generation in ways unseen to prescribed methods. The Institute of Transportation Engineers (ITE) *Trip Generation Manual* and *Handbook* overestimate peak traffic generation for mixed-use development by an average of 35 percent. For conventional suburban stand-alone development, ITE rates portray the average for such sites; so hedging mixed-use analysis toward more conservative assumptions creates a systematic bias in favor of single-use suburban development.

ITE overestimation of traffic impacts reduces the likelihood of approval of mixed use and related forms of smart growth such as infill, compact, and transit-oriented development. Such overestimation escalates development costs, skews public perception, heightens community resistance, and favors isolated single-use development.

The methods of evaluating mixed use development described in this report represent a substantial improvement over conventional traffic-estimation methods. They improve accuracy and virtually eliminate overestimation bias, and they are supported by the substantial evidence of surveys and traffic counts at 266 mixed use sites across the U.S. The MXD+ analysis method explains 97 percent of the variation in trip generation among mixed use sites and all but eliminates the ITE systematic overestimation of traffic. We hope planners and other professionals will take advantage of the available spreadsheet tools listed below to help even the playing field between conventional development patterns and more sustainable, walkable, livable places.

About the Authors

Jerry Walters is a principal and sustainability practice leader with Fehr & Peers, transportation consultants. He has more than 30 years of experience in transportation planning, engineering, and travel forecasting and is a registered traffic engineer. Jerry developed project evaluation methods for the U.S. EPA study "Mixed-use Development and Vehicle Trips: Improving the Standard Estimation Methodology." He is a co-author of the book Growing Cooler – the Evidence on Urban Development and Climate Change (Urban Land Institute, 2008).



Brian S. Bochner is a senior research engineer at Texas Transportation Institute with over 40 years of experience in traffic engineering and planning. He is a certified professional traffic engineer, a professional traffic operations engineer and transportation planner, an affiliate with the Transportation Research Board, and past president and member of the International Board of Direction of the Institute of Transportation Engineers (ITE). His awards include Transportation Innovator, Texas Department of Transportation Research Program, and Transportation Engineer of the Year for the Texas Section of ITE.

Reid Ewing is a professor of city and metropolitan planning at the University of Utah, associate editor of the *Journal of the American Planning Association*, columnist for *Planning* magazine, and Fellow of the Urban Land Institute. His 2010 article, "Travel and the Built Environment: A Meta-Analysis," won the Best Article of the Year award from the American Planning Association, and his book, Best Development Practices (APA Planners Press, 1996), is listed by APA as one of the 100 essential planning books of the past 100 years.

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Additional Resources

Description, documentation, and spreadsheet tools for the NCHRP 684 method, Enhancing Internal Trip Capture Estimation for Mixed-Use Developments may be found at www.trb.org/Main/Blurbs/165014.aspx.

Description, documentation, and spreadsheet tools for the EPA MXD Trip Generation Tool for Mixed-Use Developments may be found at www.epa.gov/smartgrowth/mxd_tripgeneration.html.

Quick-response analysis tools for applying the EPA MXD method, the combined EPA /NCHRP method MXD+, and MXD in conjunction with analysis of vehicle-miles traveled, GHG emissions, and shared parking, Plan+, may be found at http://asap.fehrandpeers.com/tools/.

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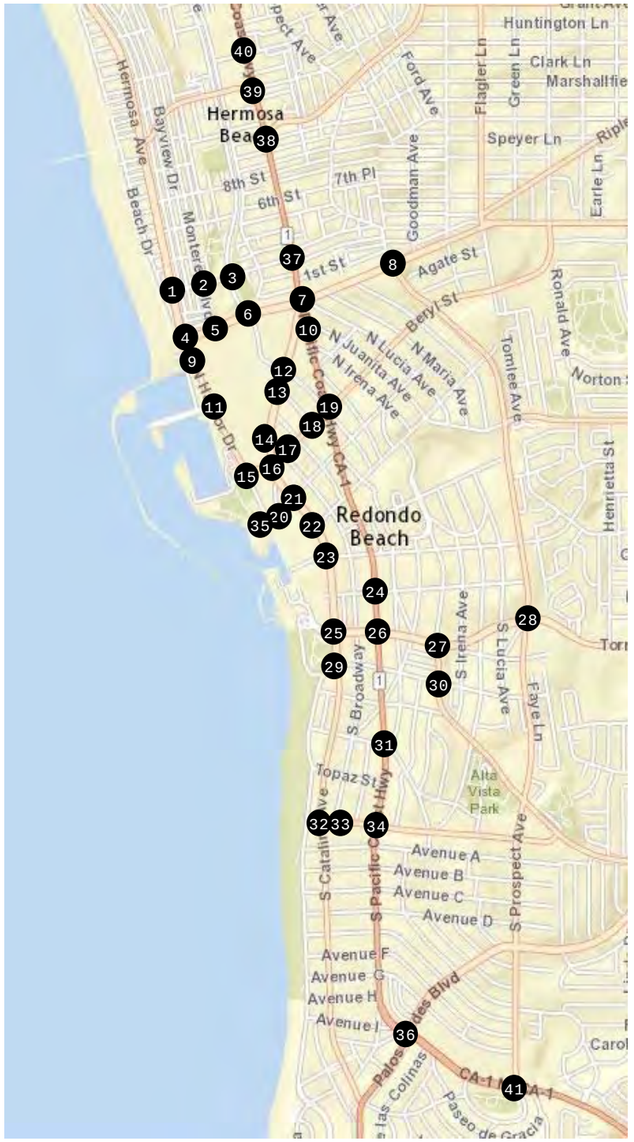
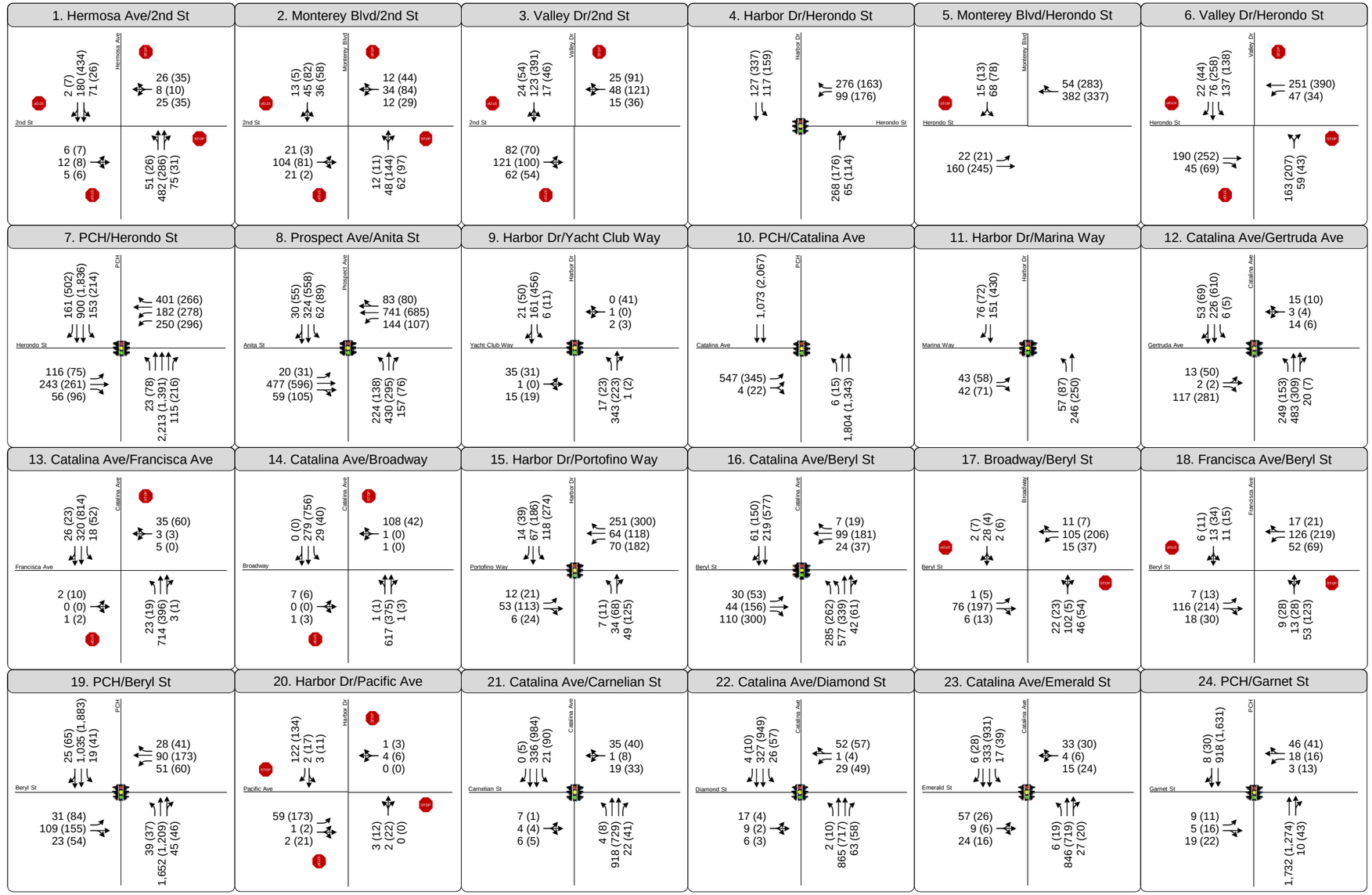
APPENDIX X-2: PEAK HOUR TURNING MOVEMENT VOLUMES & INTERSECTION LANE CONFIGURATIONS

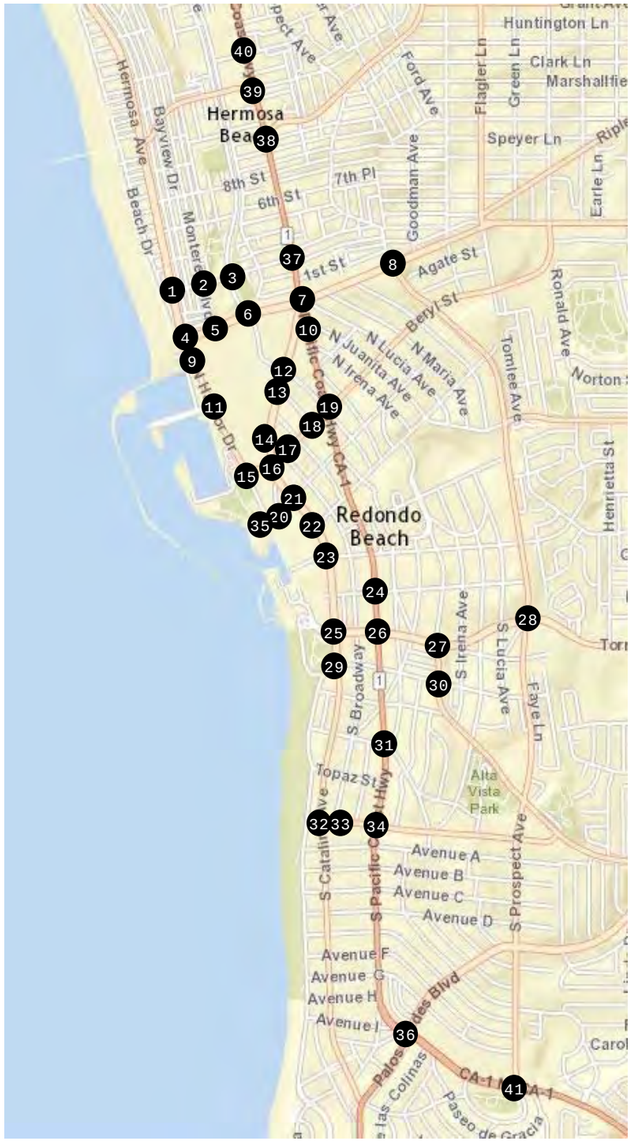


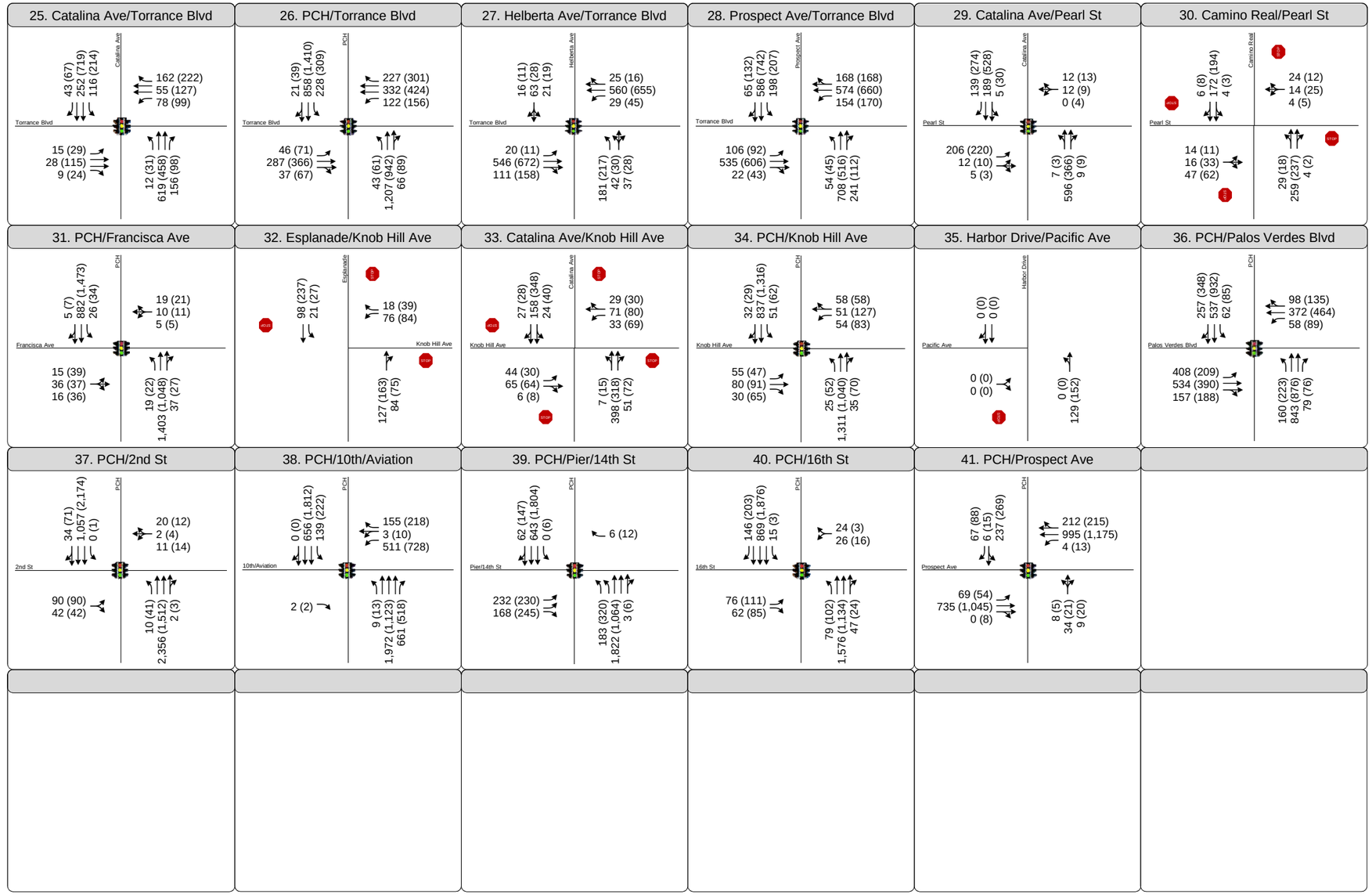


LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

Figure 1
Peak Hour Traffic Volumes and Lane Configurations
Existing Conditions

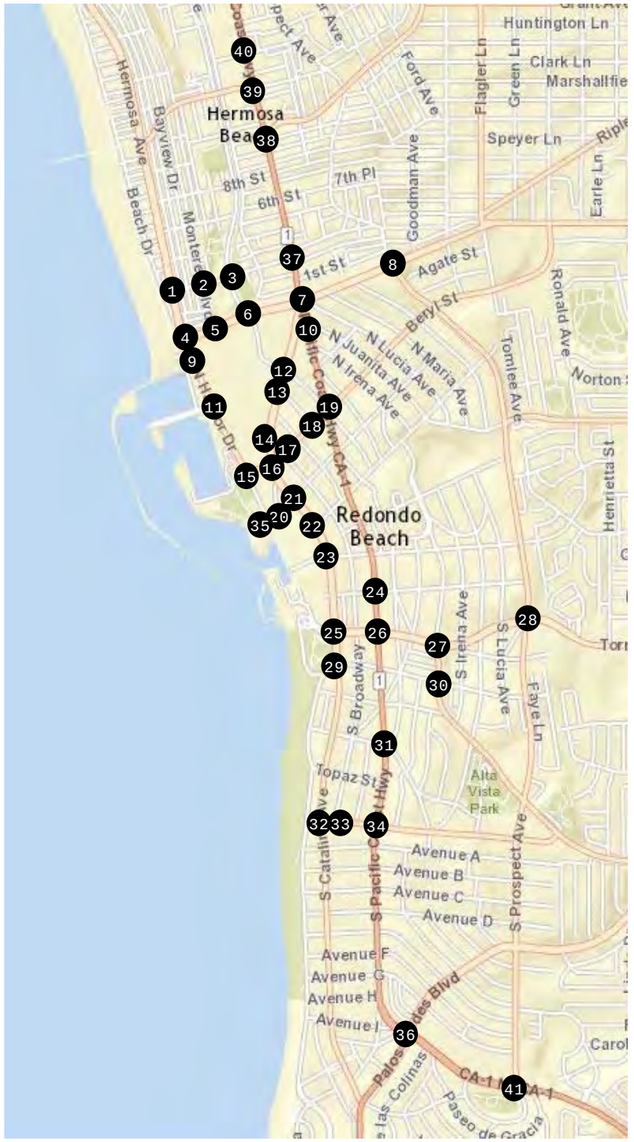


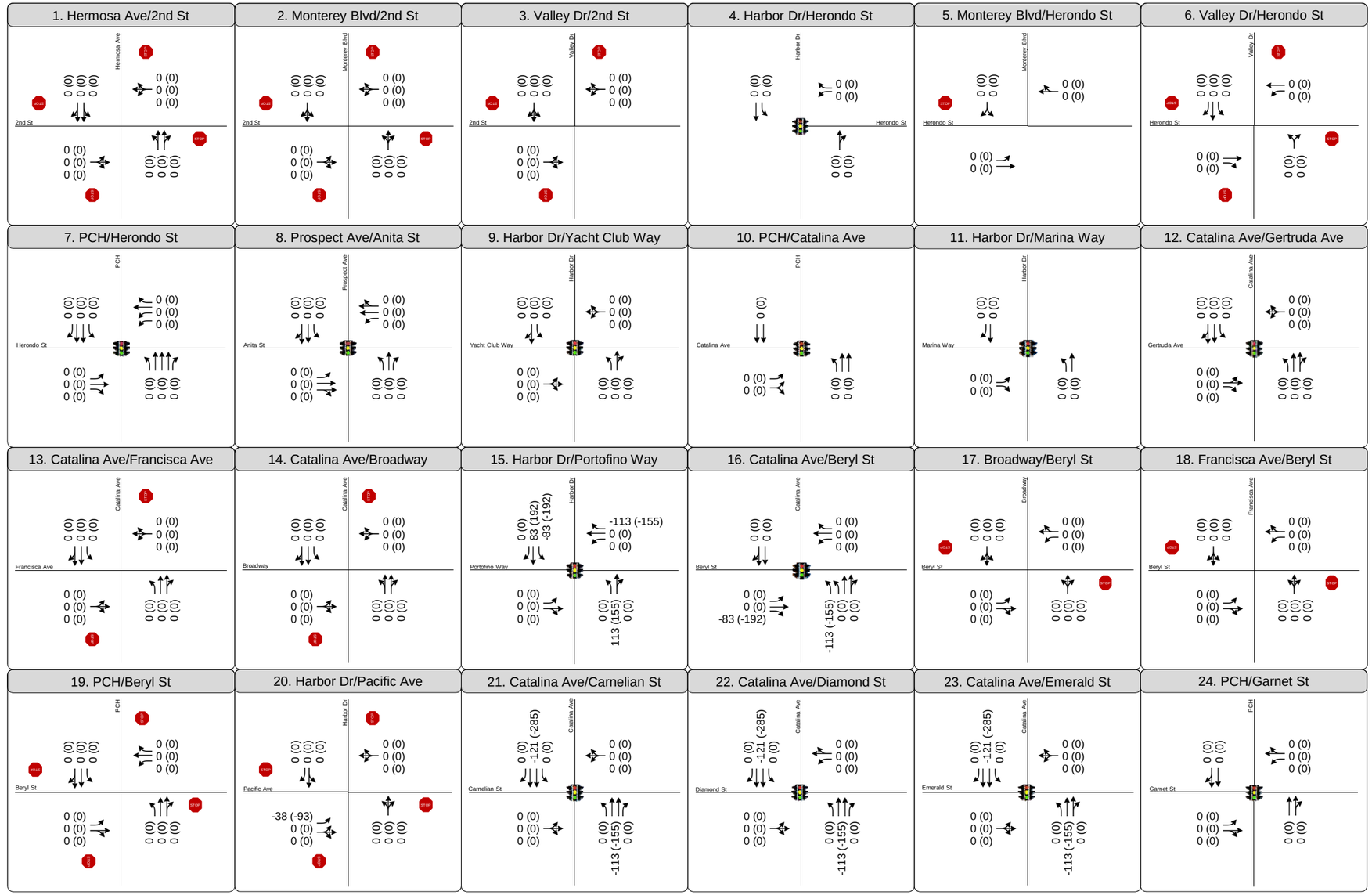


LEGEND

1	Study Intersection	AM (PM)	Peak Hour Traffic Volume
	Study Corridor	STOP	Stop Sign
	Turn Lane		

Figure 1
Peak Hour Traffic Volumes and Lane Configurations
Existing Conditions

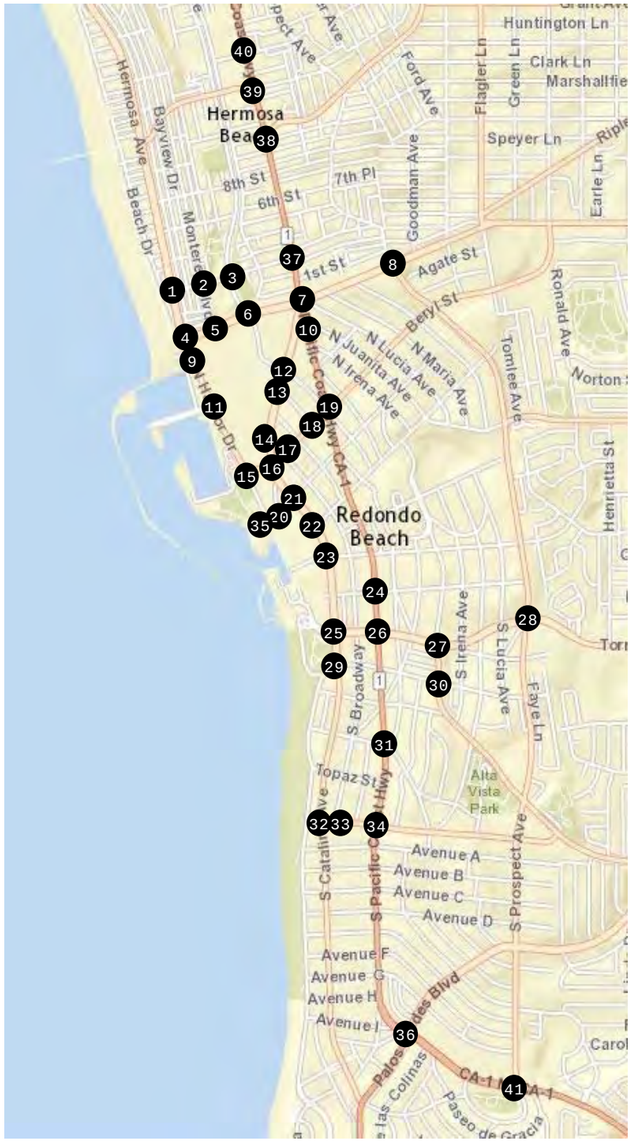


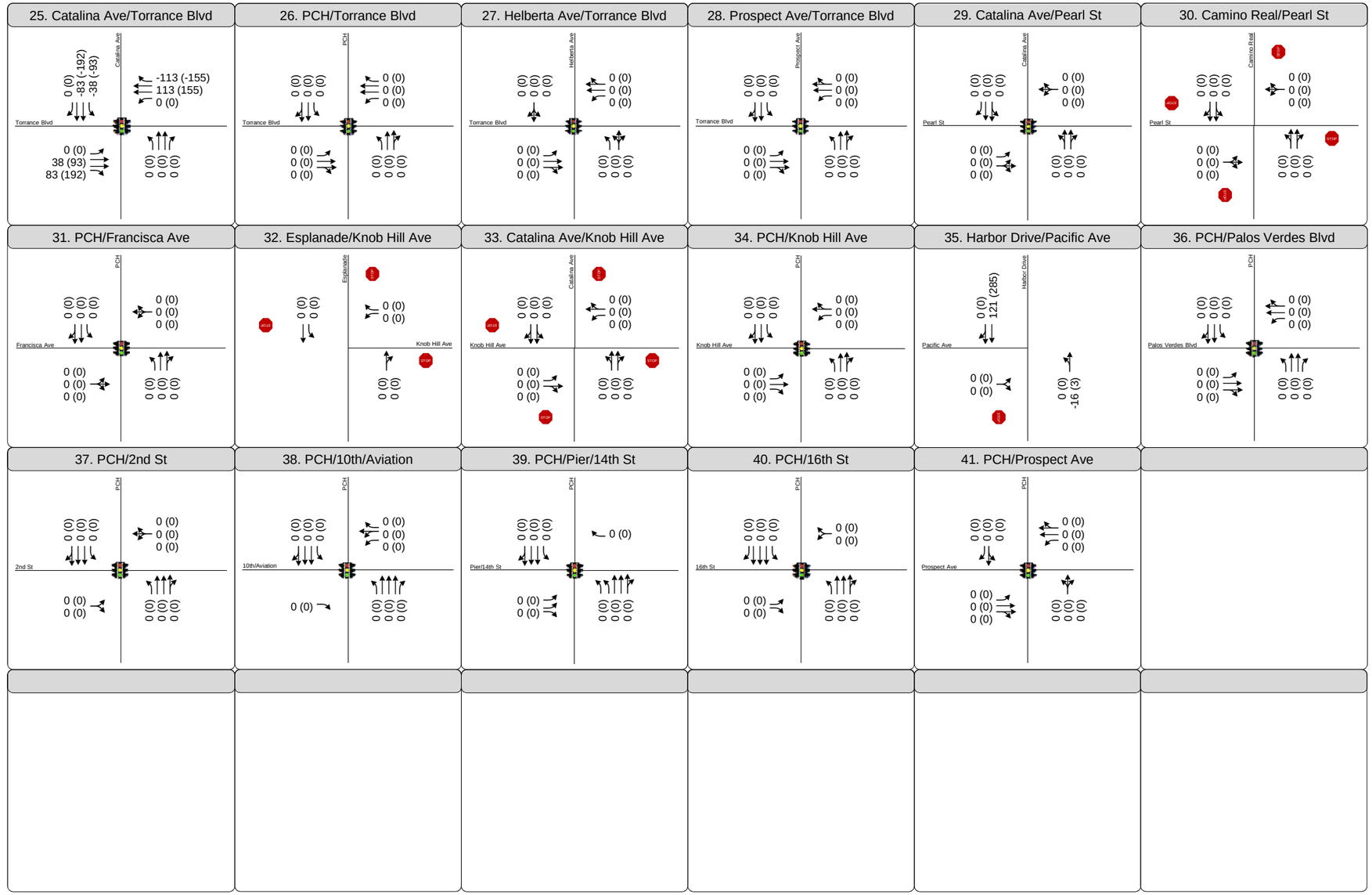


LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

Figure 2
Peak Hour Traffic Volumes and Lane Configurations
Existing Background Shift with Pacific Connection

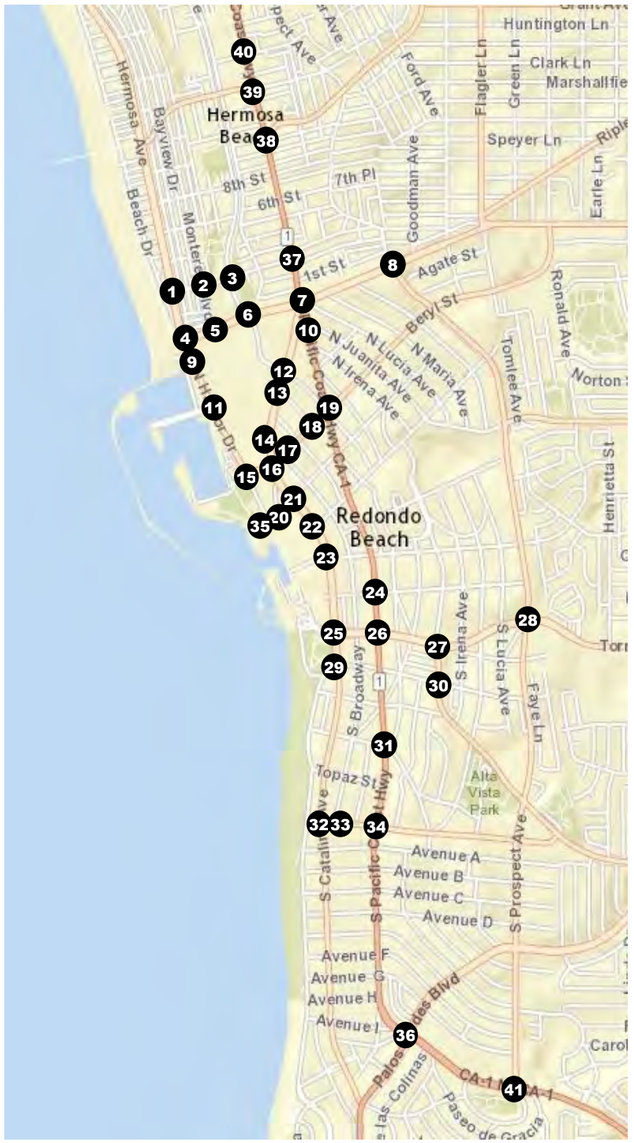


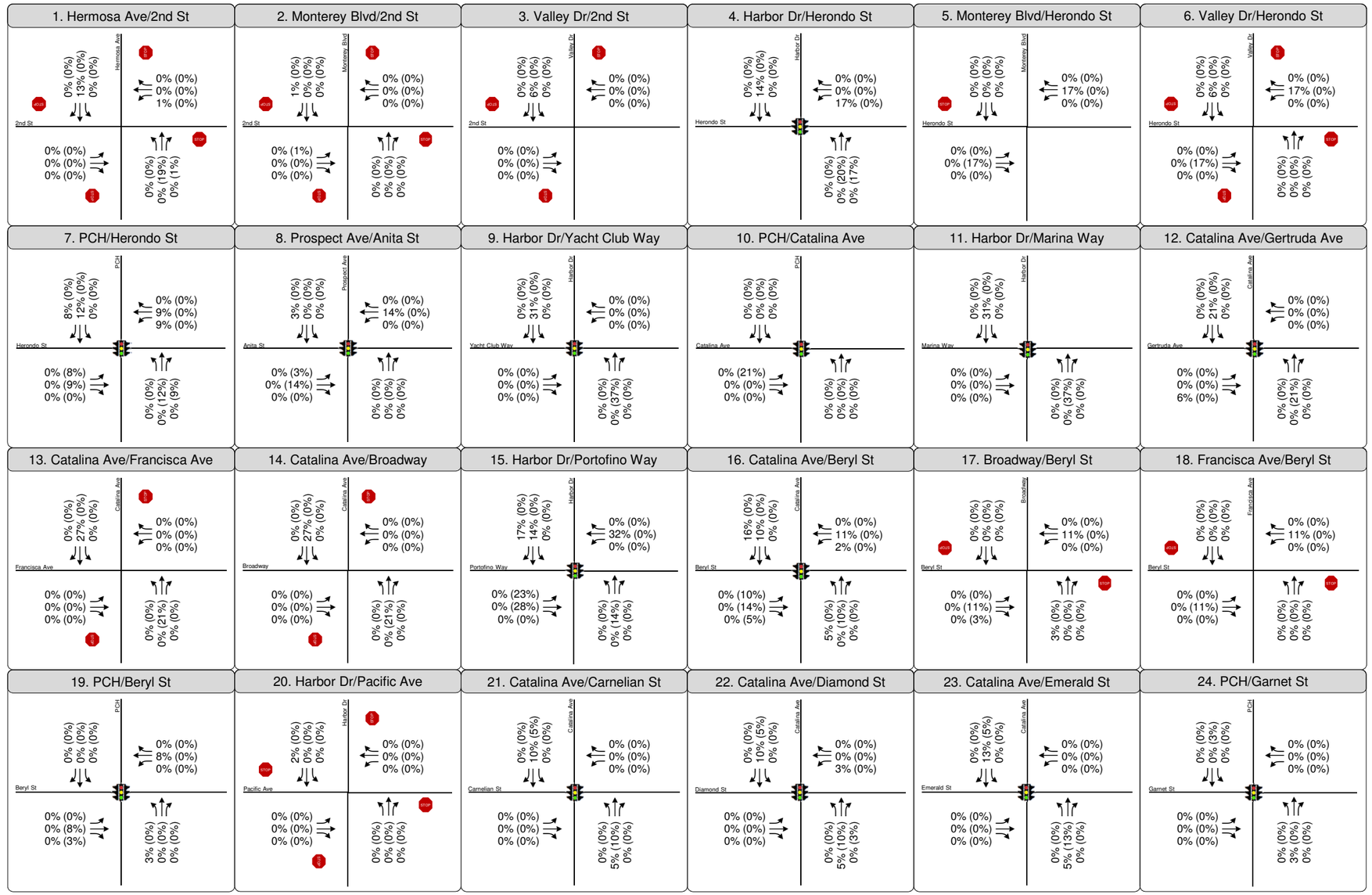


LEGEND

1	Study Intersection	AM (PM)	Peak Hour Traffic Volume
	Study Corridor	STOP	Stop Sign
	Turn Lane		

Figure 2
Peak Hour Traffic Volumes and Lane Configurations
Existing Background Shift with Pacific Connection

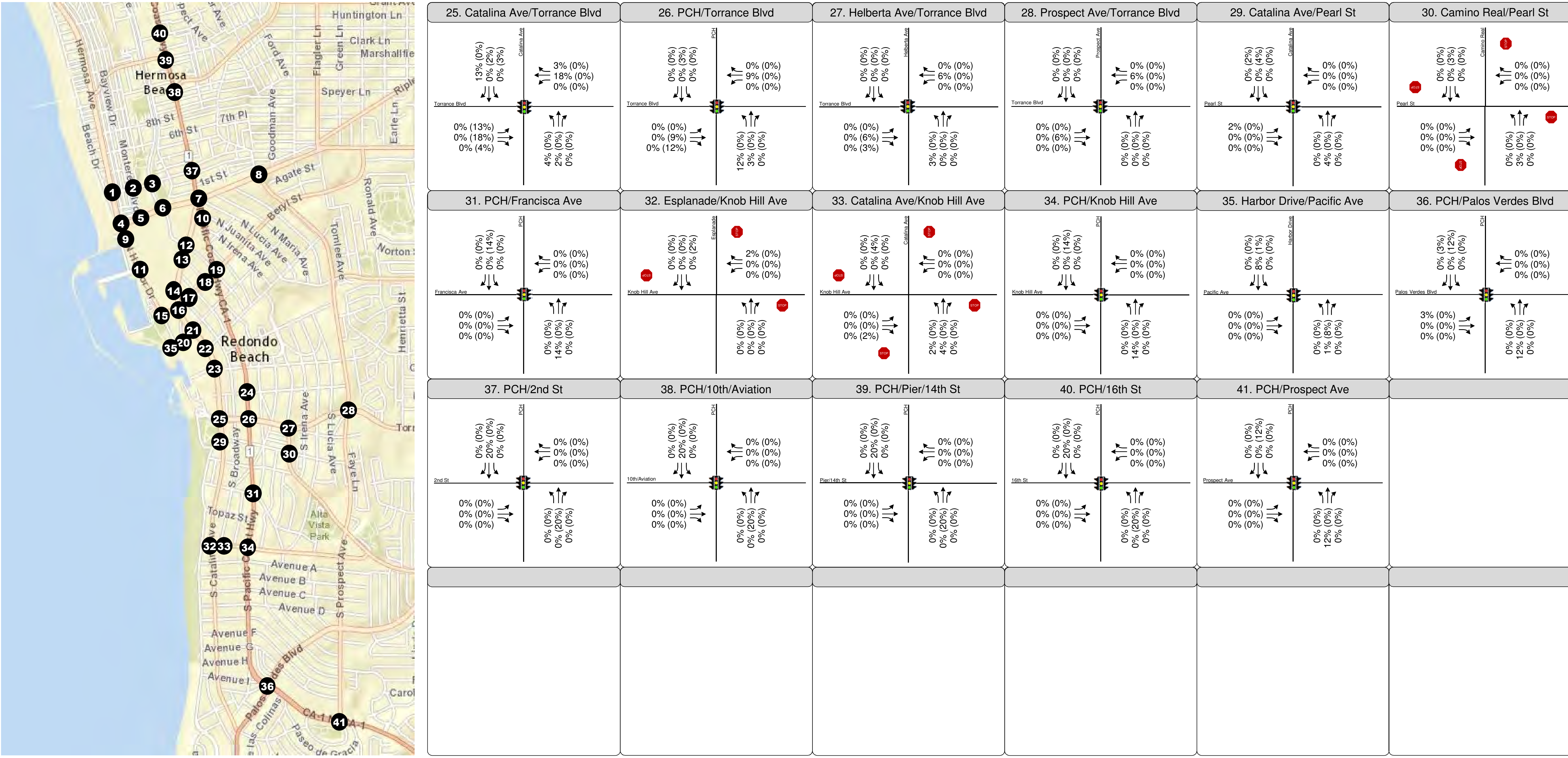




LEGEND

1	Study Intersection	AM (PM)	Peak Hour Traffic Volume
	Study Corridor		Stop Sign
	Turn Lane		

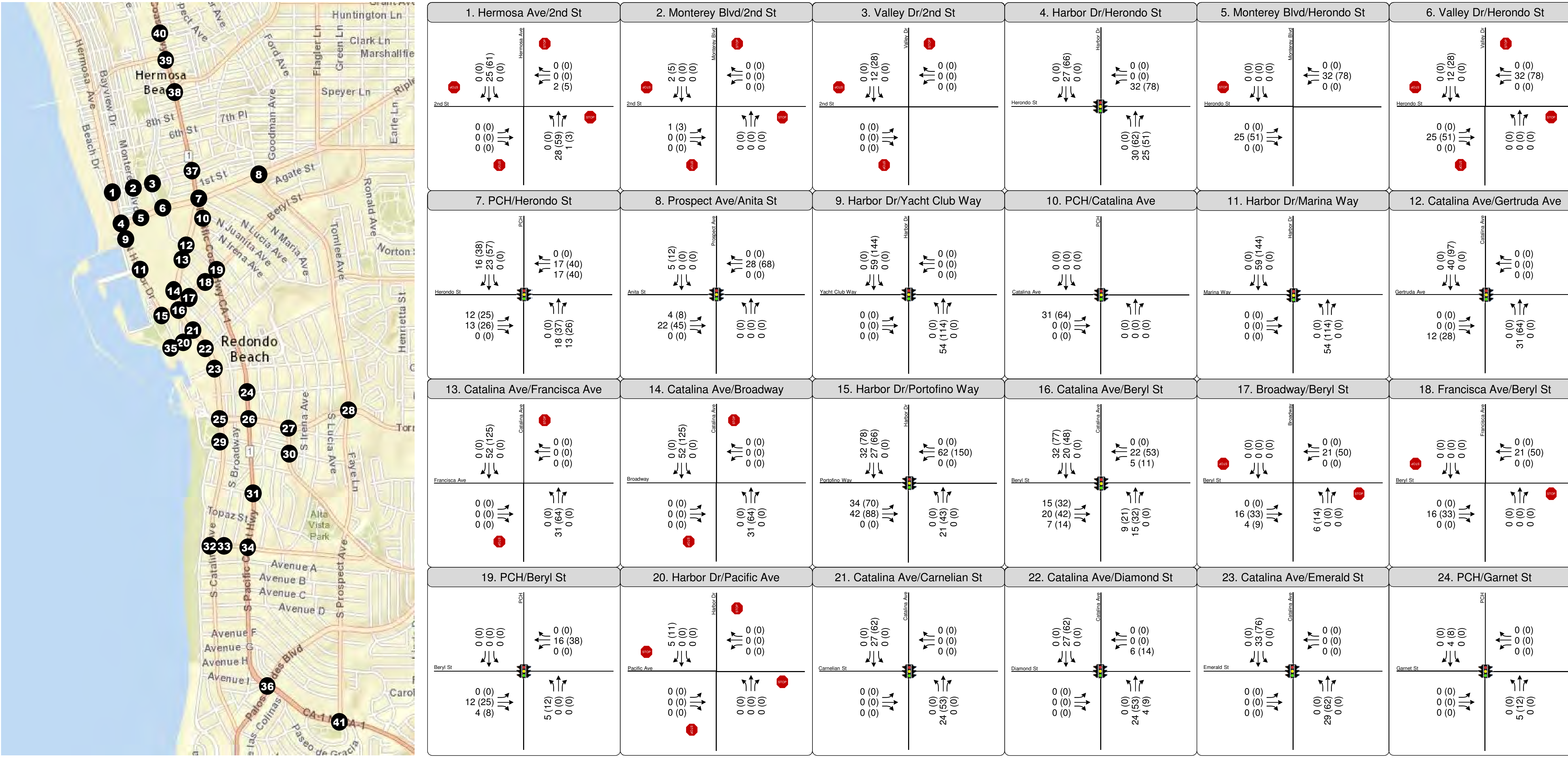
Figure 3
Percentage Project Trip Distributions
Inbound (Outbound)



LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

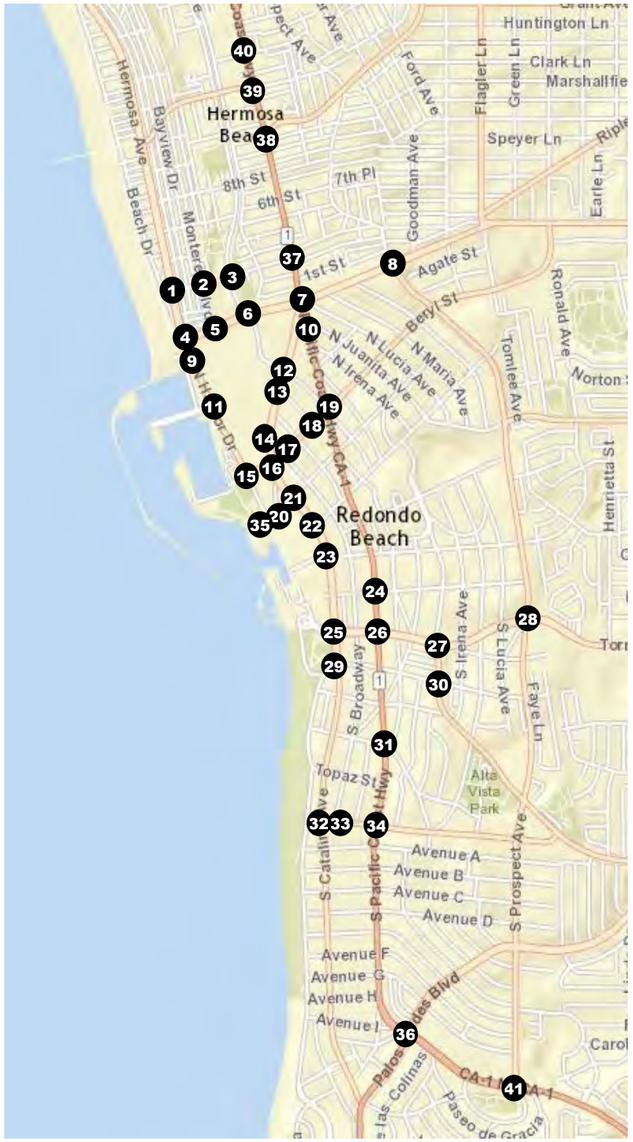
Figure 3
Percentage Project Trip Distributions
Inbound (Outbound)



LEGEND

1	Study Intersection	AM (PM)	Peak Hour Traffic Volume
	Study Corridor	STOP	Stop Sign
	Turn Lane		

Figure 4
Peak Hour Traffic Volumes and Lane Configurations
Project Only Volumes



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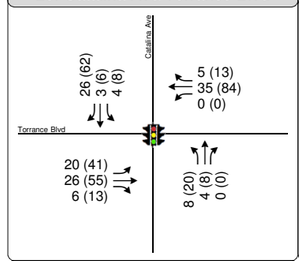

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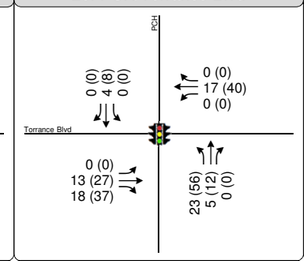

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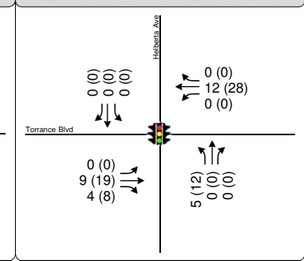

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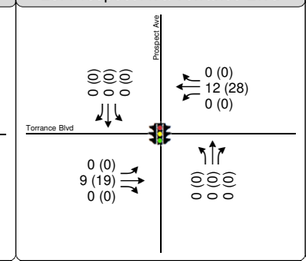

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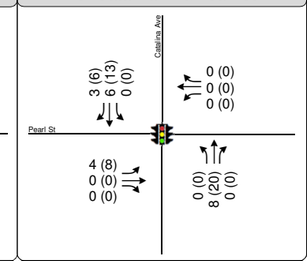

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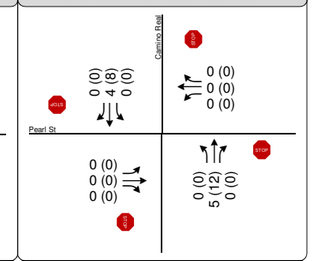

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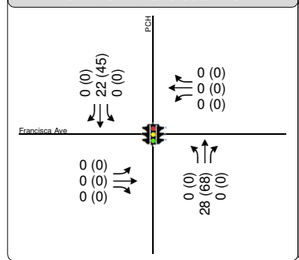
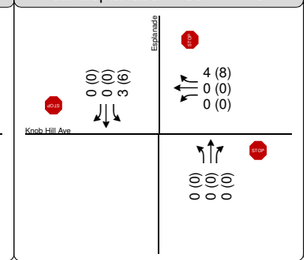


32. Esplanade/Knob Hill Ave



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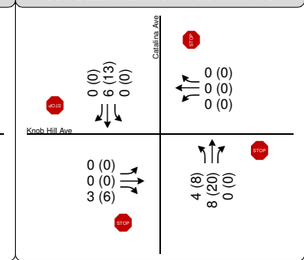

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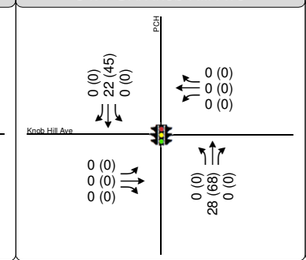

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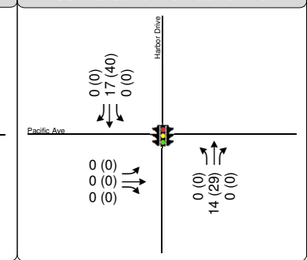

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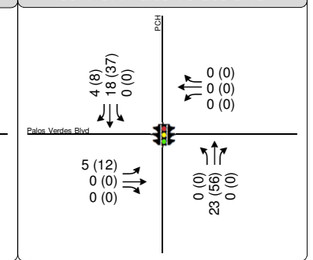

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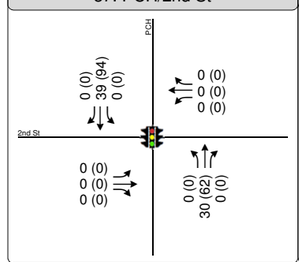
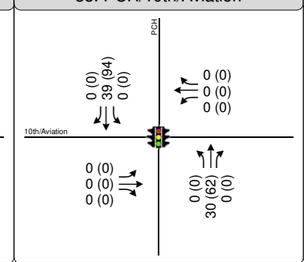


38. PCH/10th/Aviation



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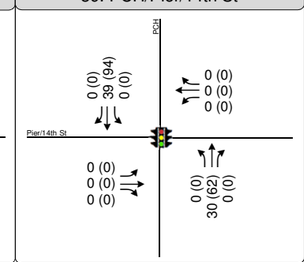

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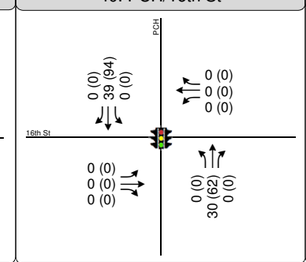

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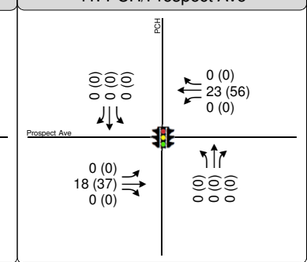
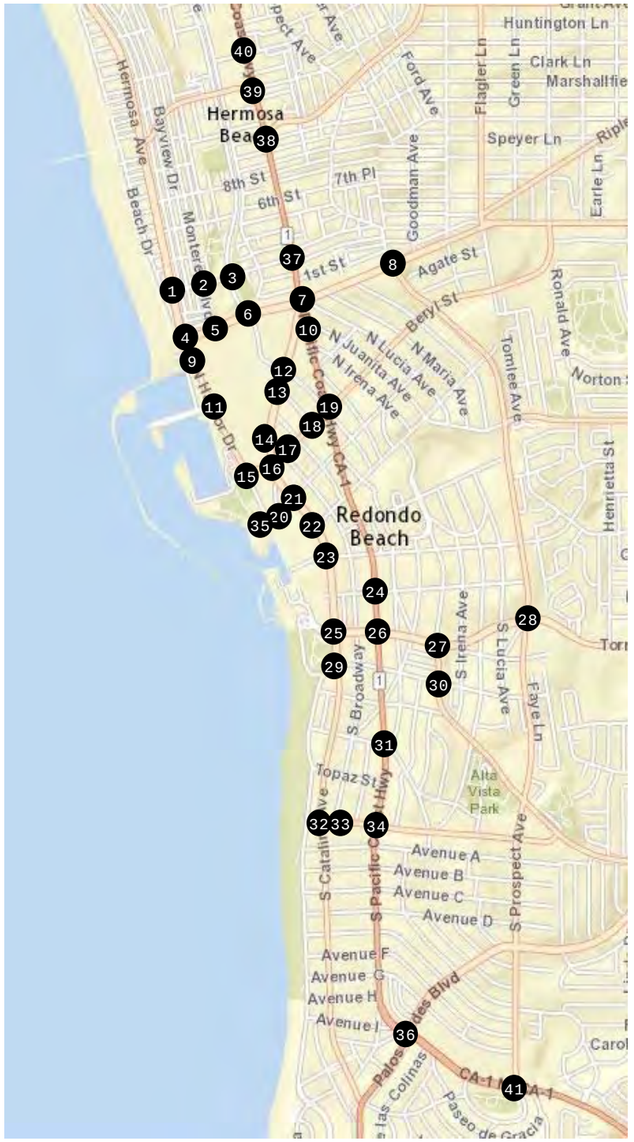
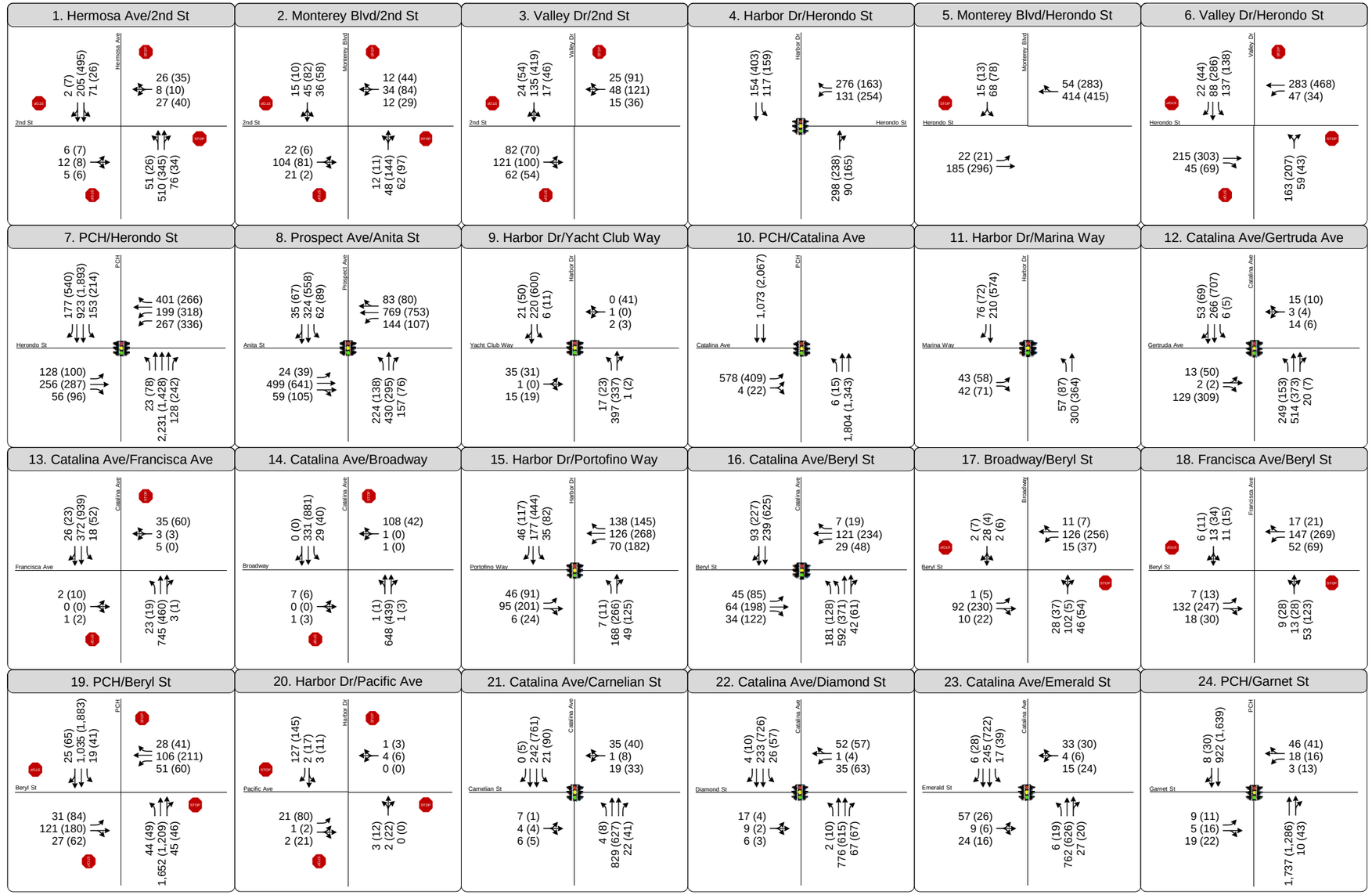


LEGEND

1	Study Intersection	AM (PM)	Peak Hour Traffic Volume
	Study Corridor	STOP	Stop Sign
	Turn Lane		

Figure 4
Peak Hour Traffic Volumes and Lane Configurations
Project Only Volumes

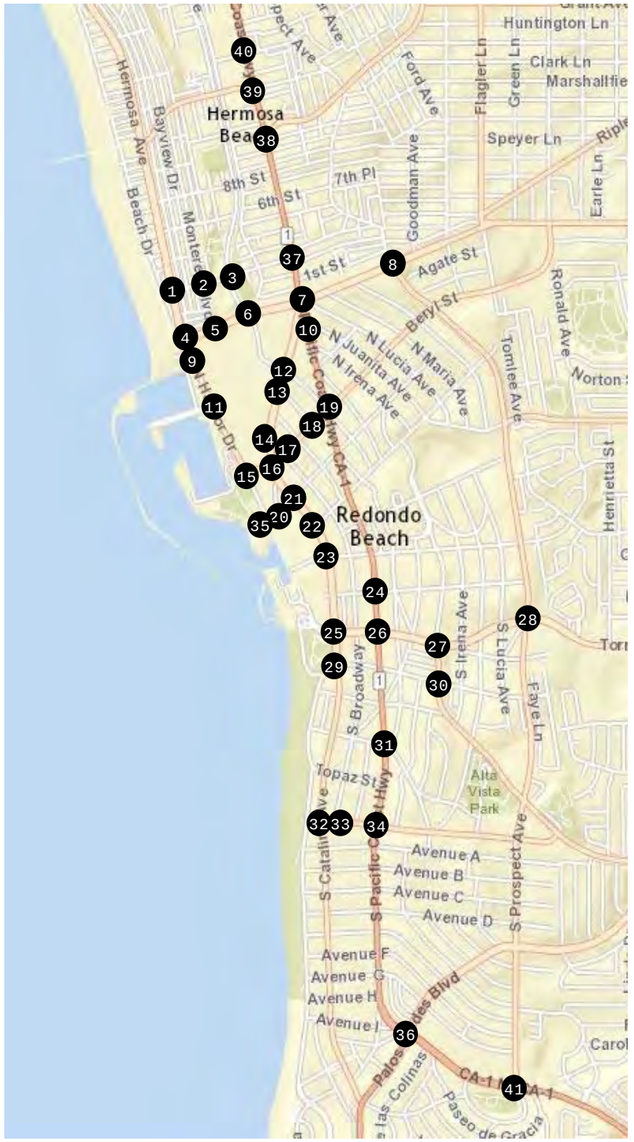


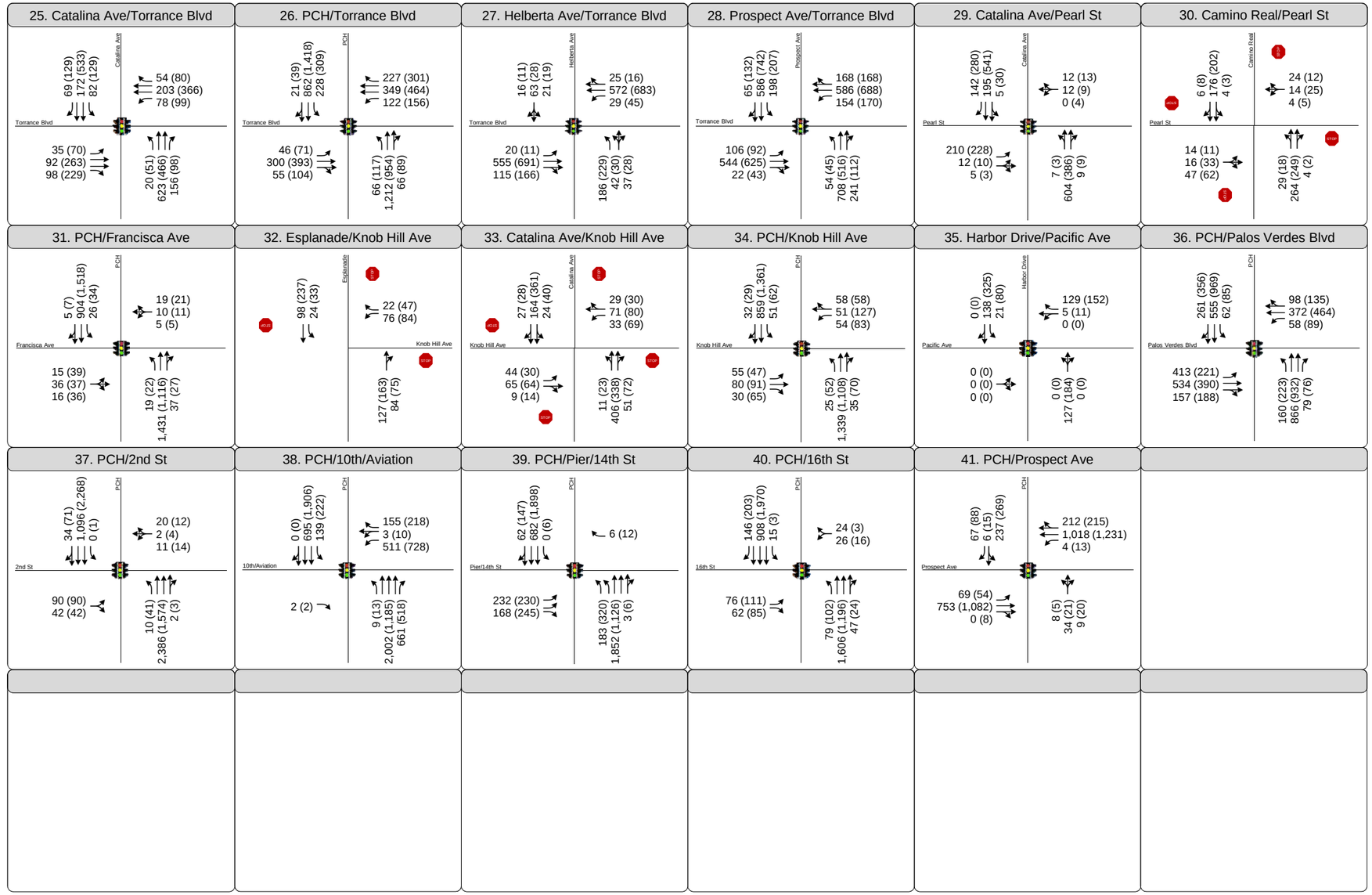


LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

Figure 5
Peak Hour Traffic Volumes and Lane Configurations
Existing Plus Project Conditions

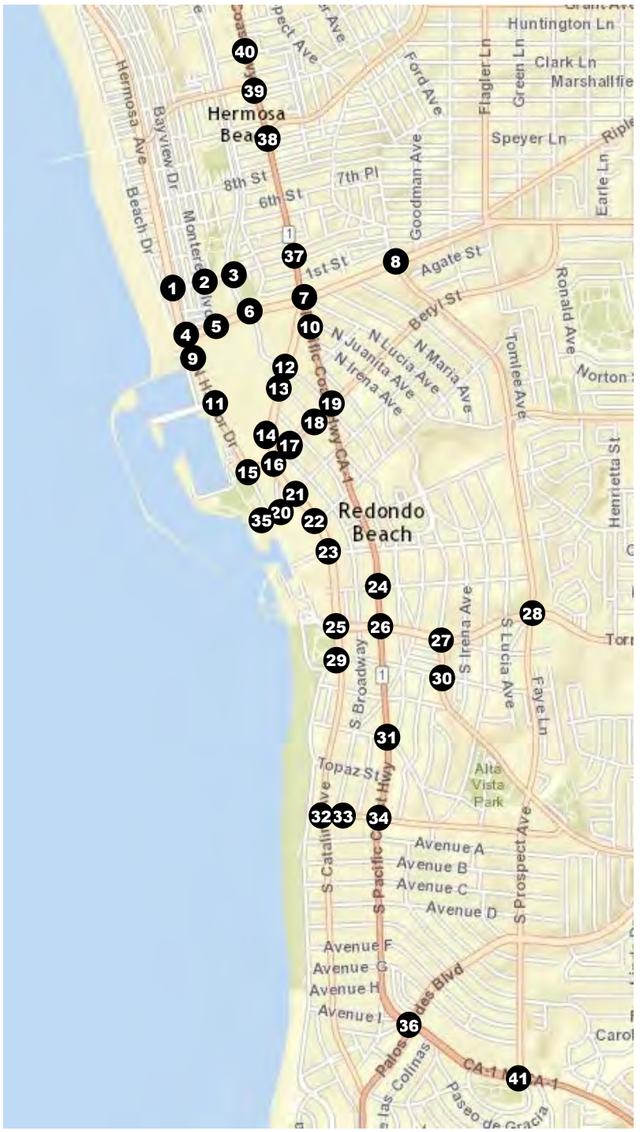


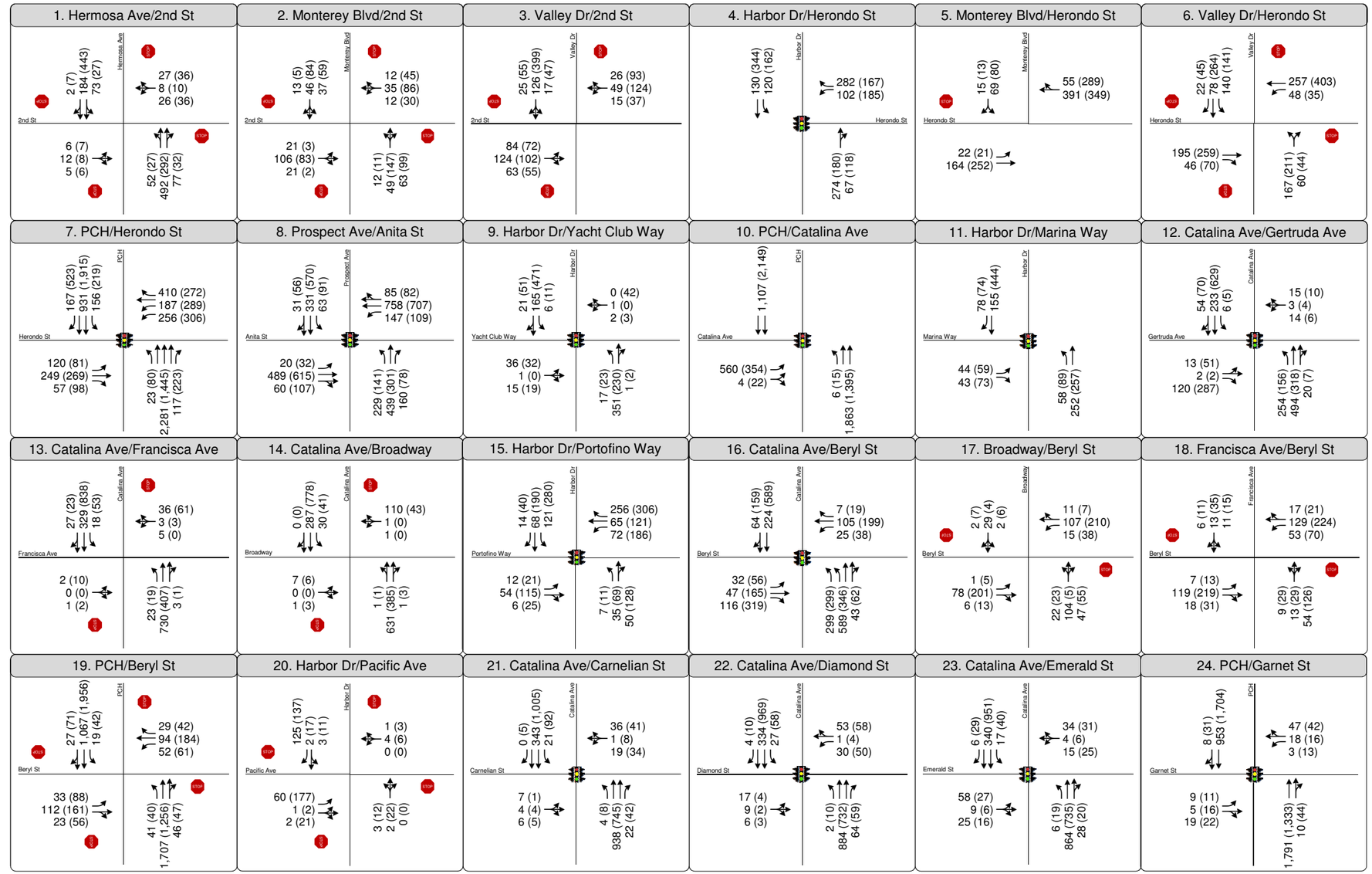


LEGEND

1	Study Intersection	AM (PM)	Peak Hour Traffic Volume
	Study Corridor	STOP	Stop Sign
	Turn Lane		

Figure 5
Peak Hour Traffic Volumes and Lane Configurations
Existing Plus Project Conditions

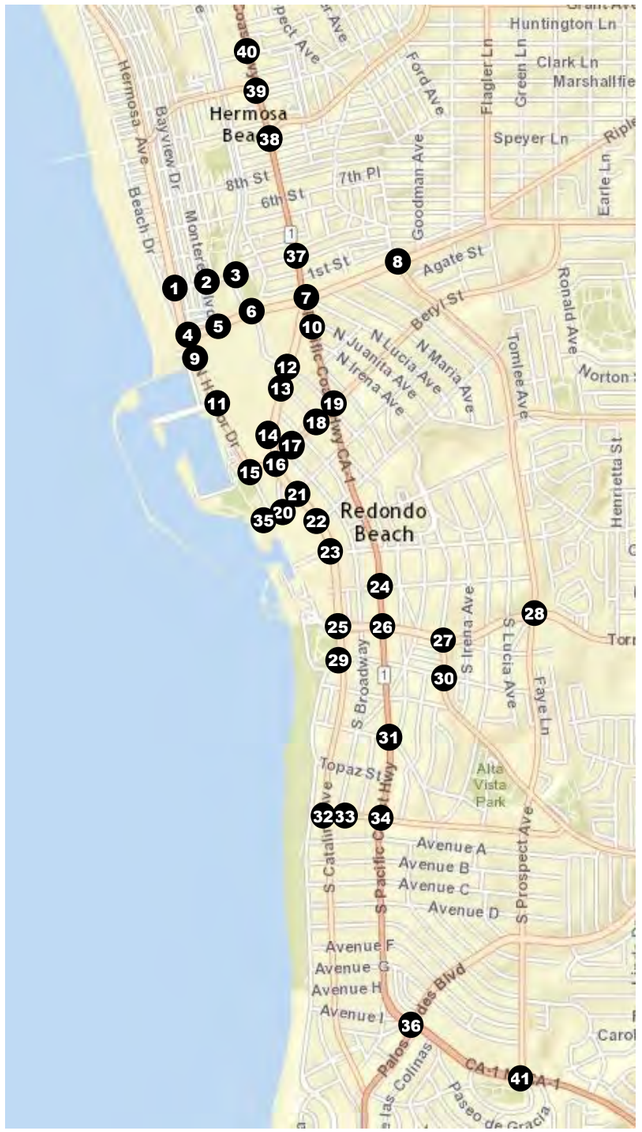


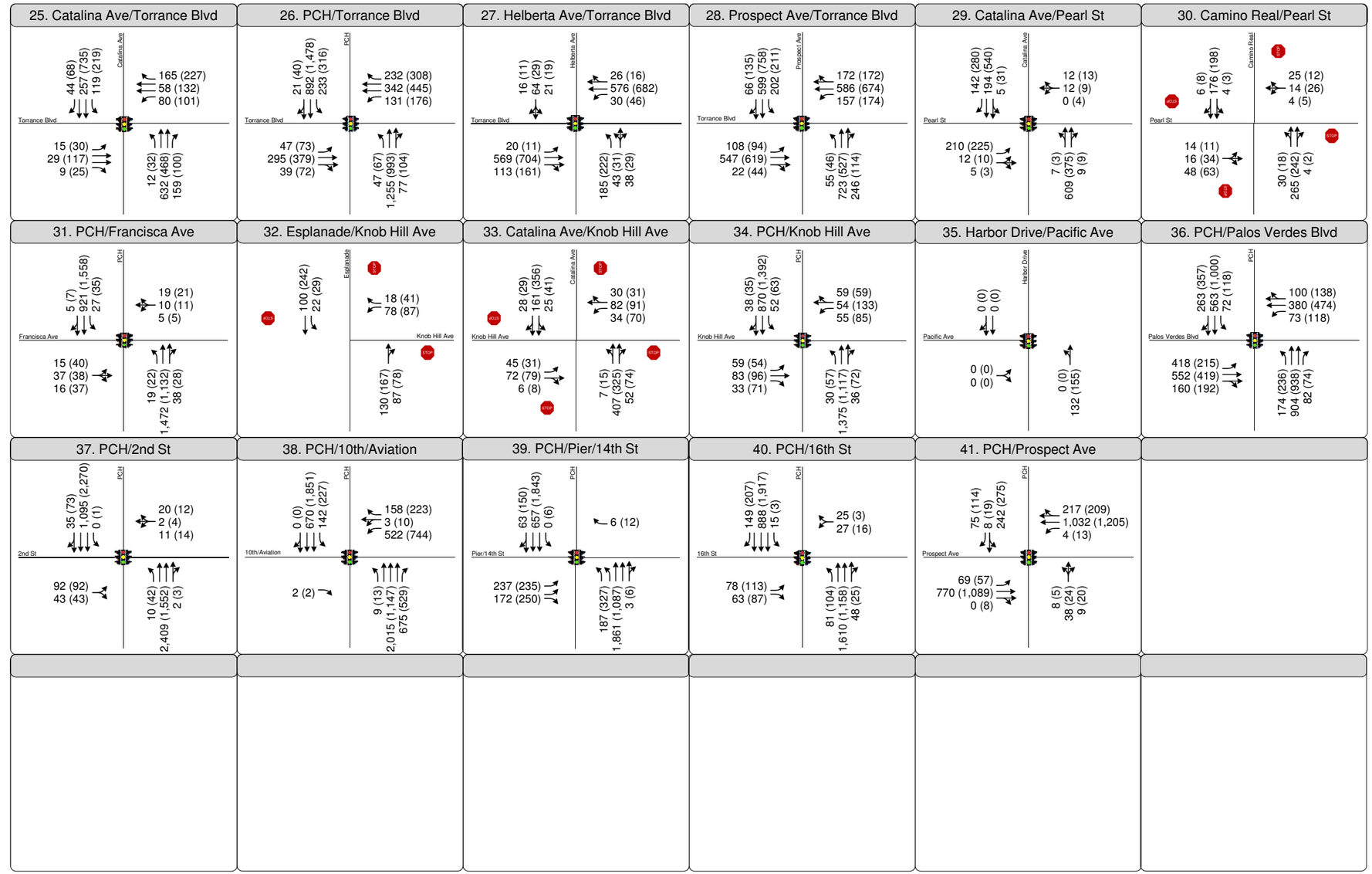


LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

Figure 6
Peak Hour Traffic Volumes and Lane Configurations
Cumulative Base

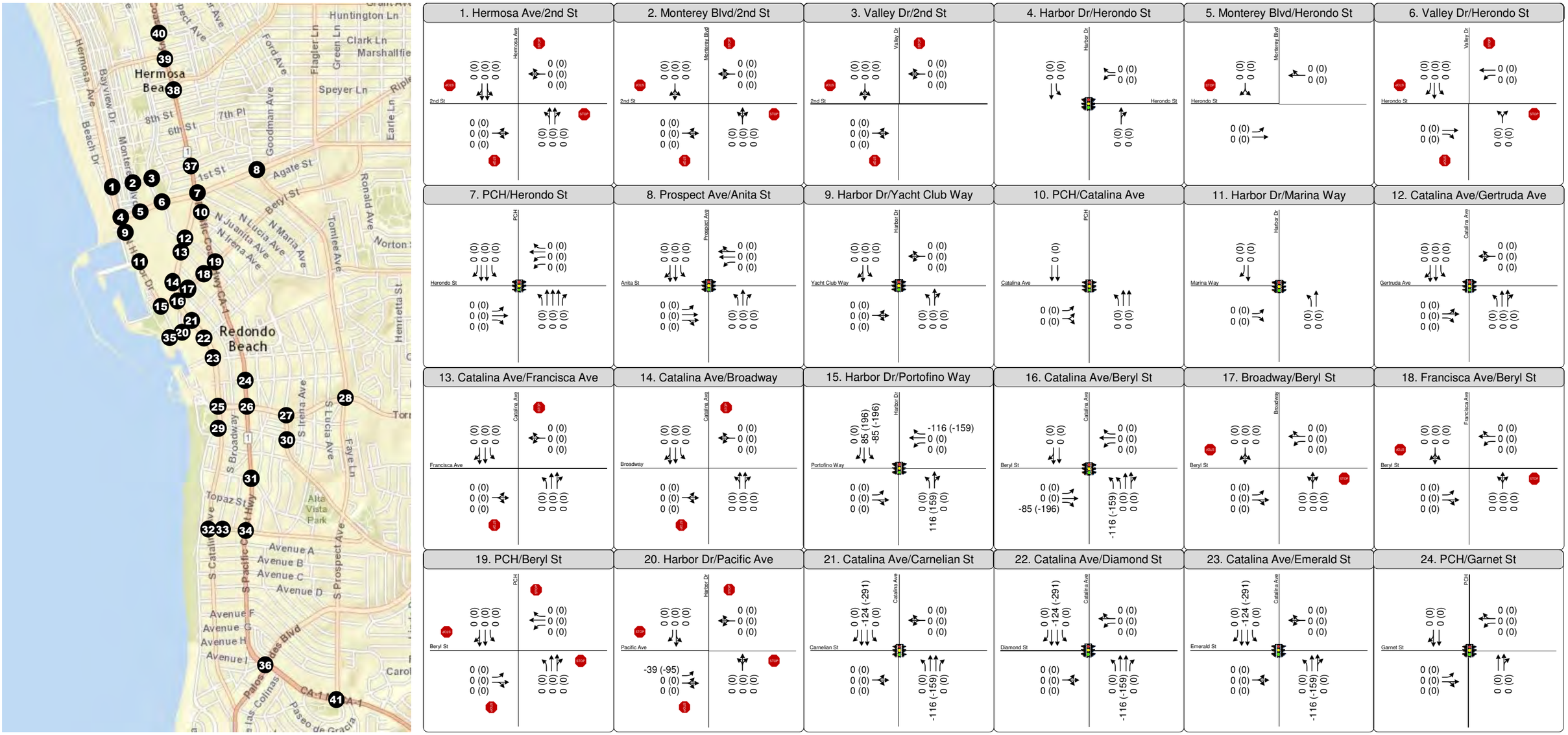




LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

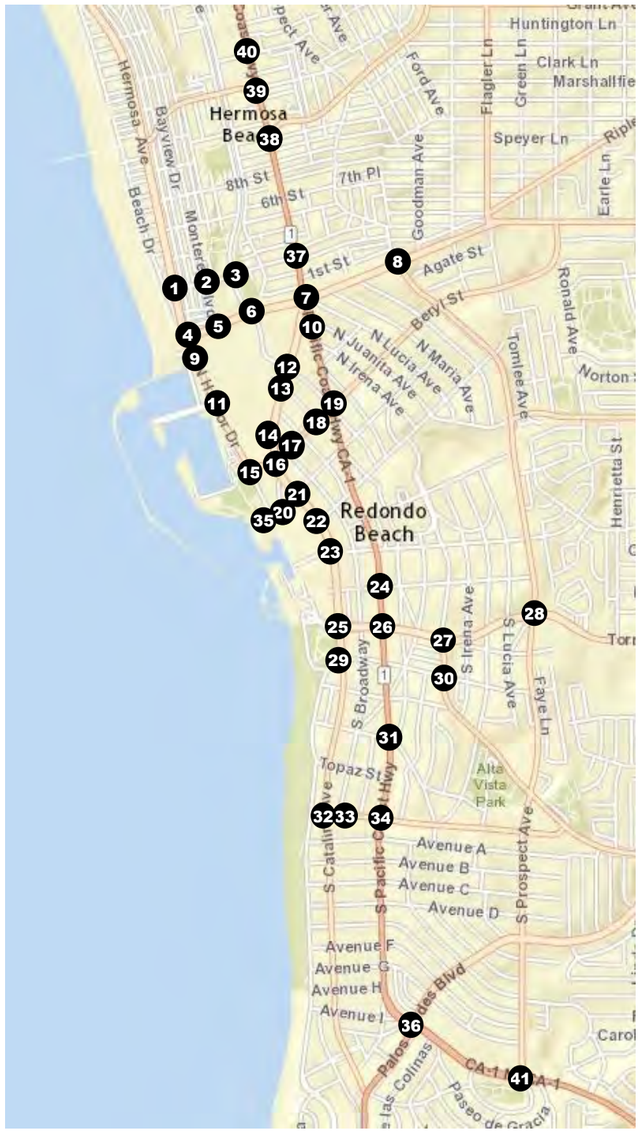
Figure 6
Peak Hour Traffic Volumes and Lane Configurations
Cumulative Base

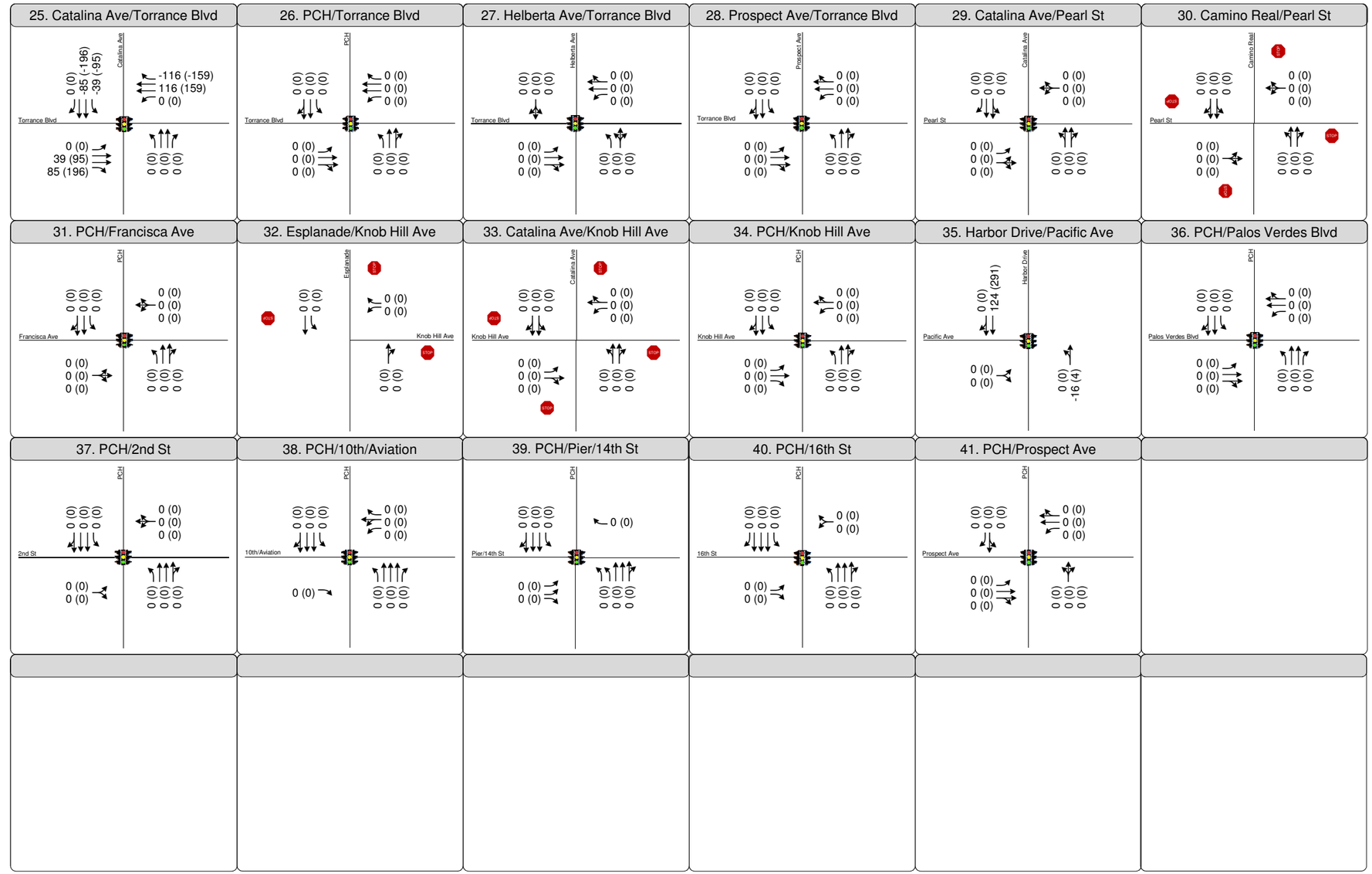


LEGEND

1	Study Intersection	AM (PM)	Peak Hour Traffic Volume
	Study Corridor	STOP	Stop Sign
	Turn Lane		

Figure 7
Peak Hour Traffic Volumes and Lane Configurations
Cumulative Background Shift with Pacific Connection

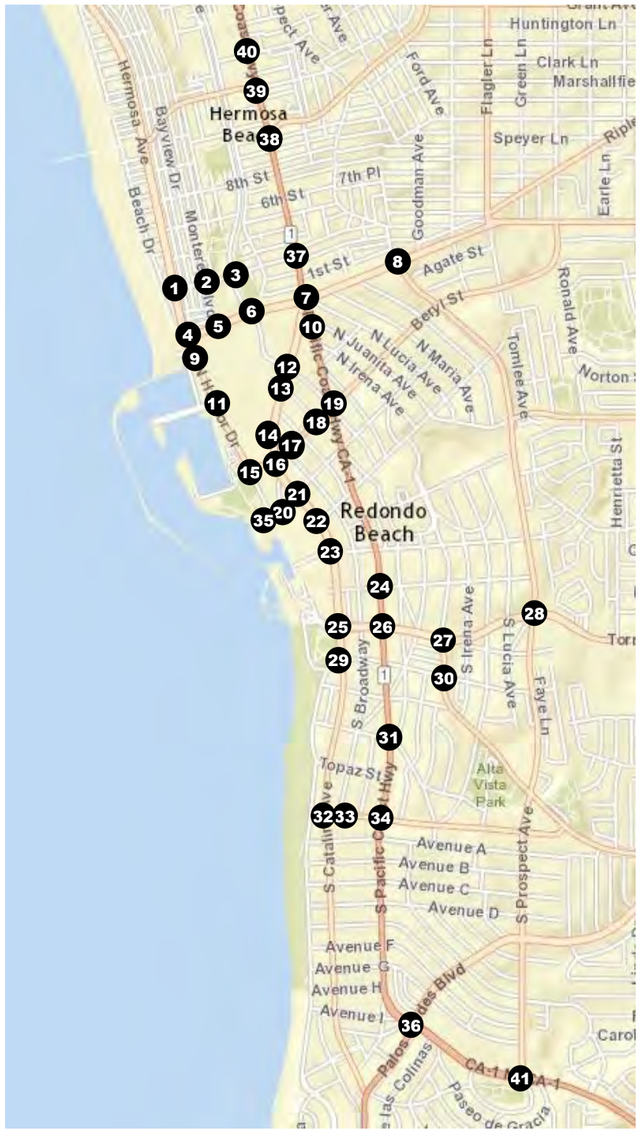


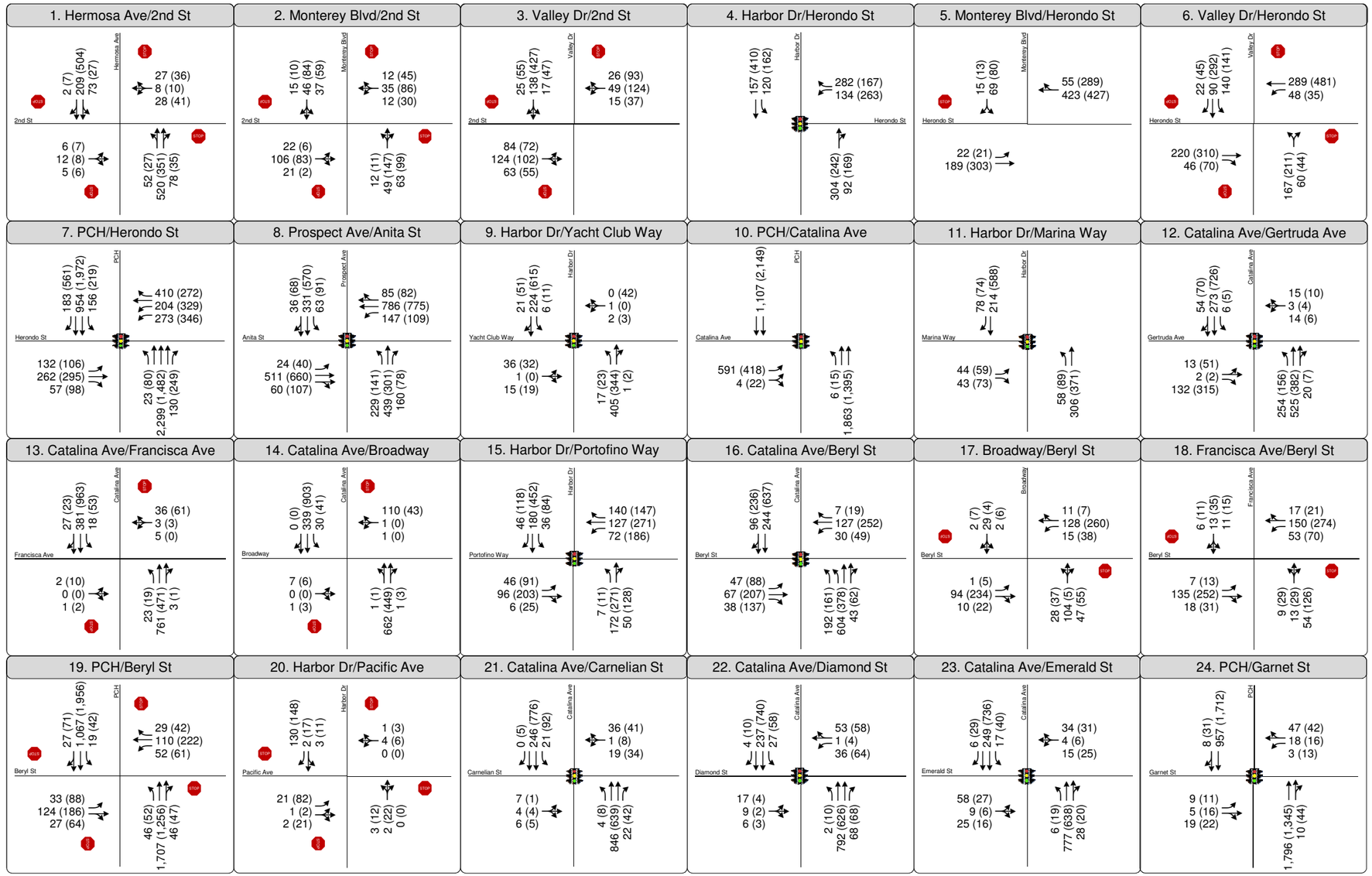


LEGEND

1	Study Intersection	AM (PM)	Peak Hour Traffic Volume
	Study Corridor		Stop Sign
	Turn Lane		

Figure 7
Peak Hour Traffic Volumes and Lane Configurations
Cumulative Background Shift with Pacific Connection

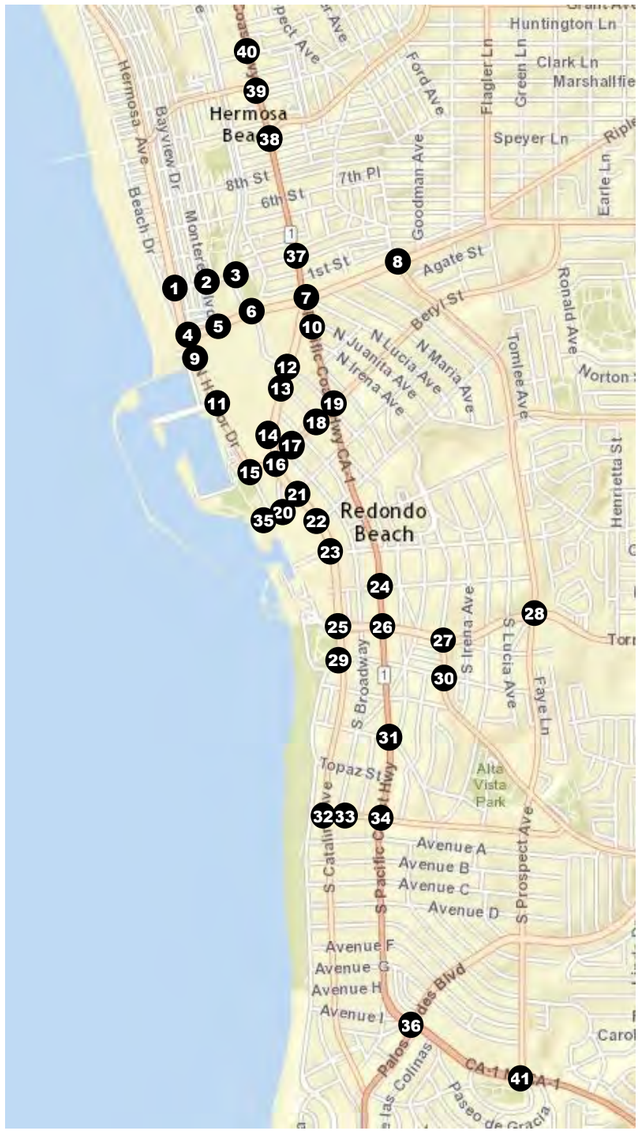


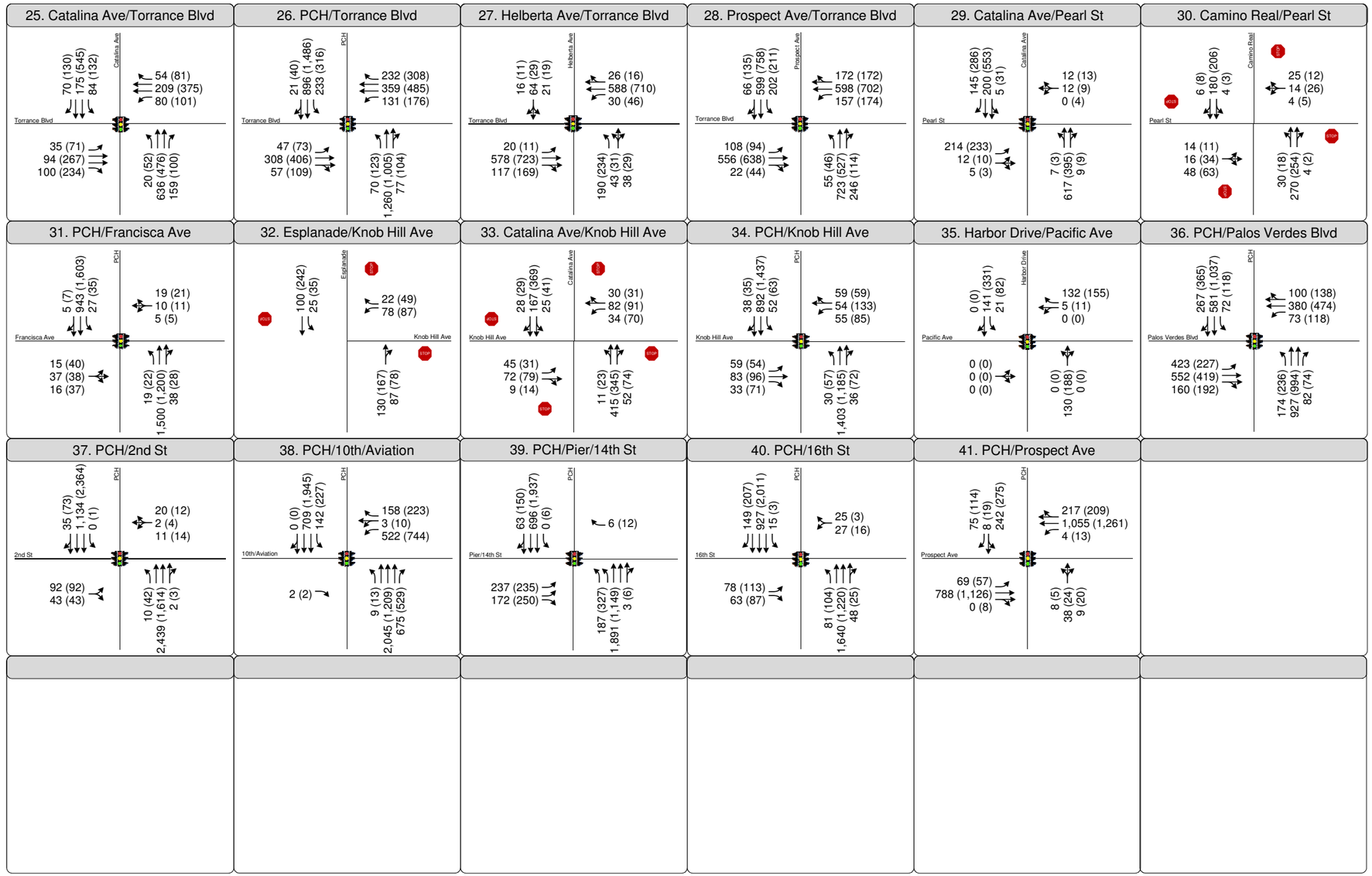


LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

Figure 8
Peak Hour Traffic Volumes and Lane Configurations
Cumulative Plus Project Conditions

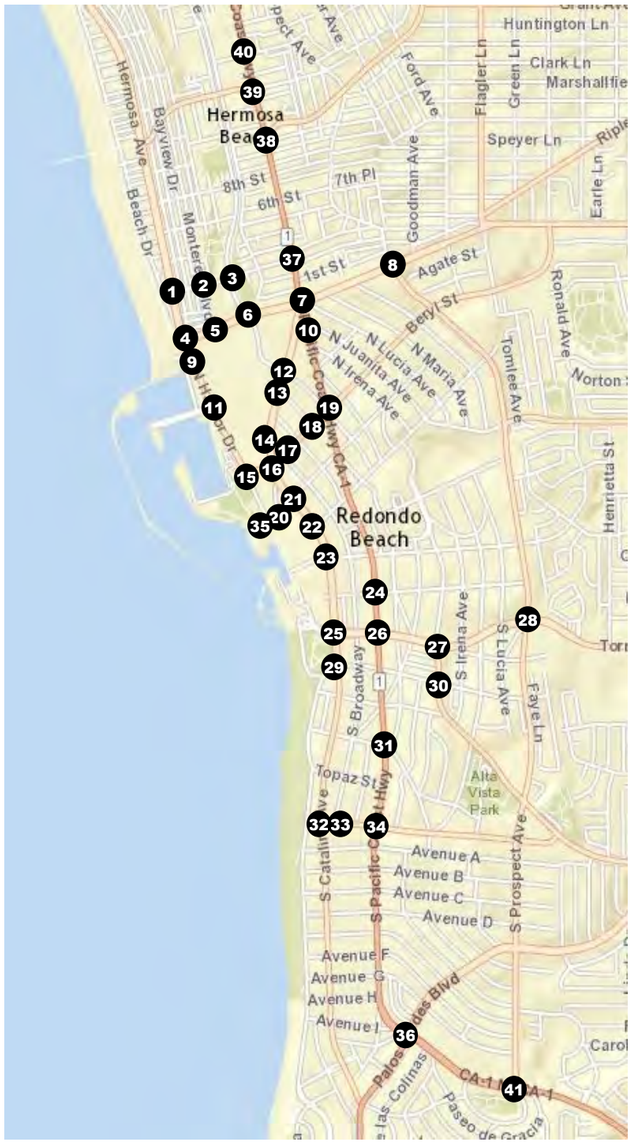


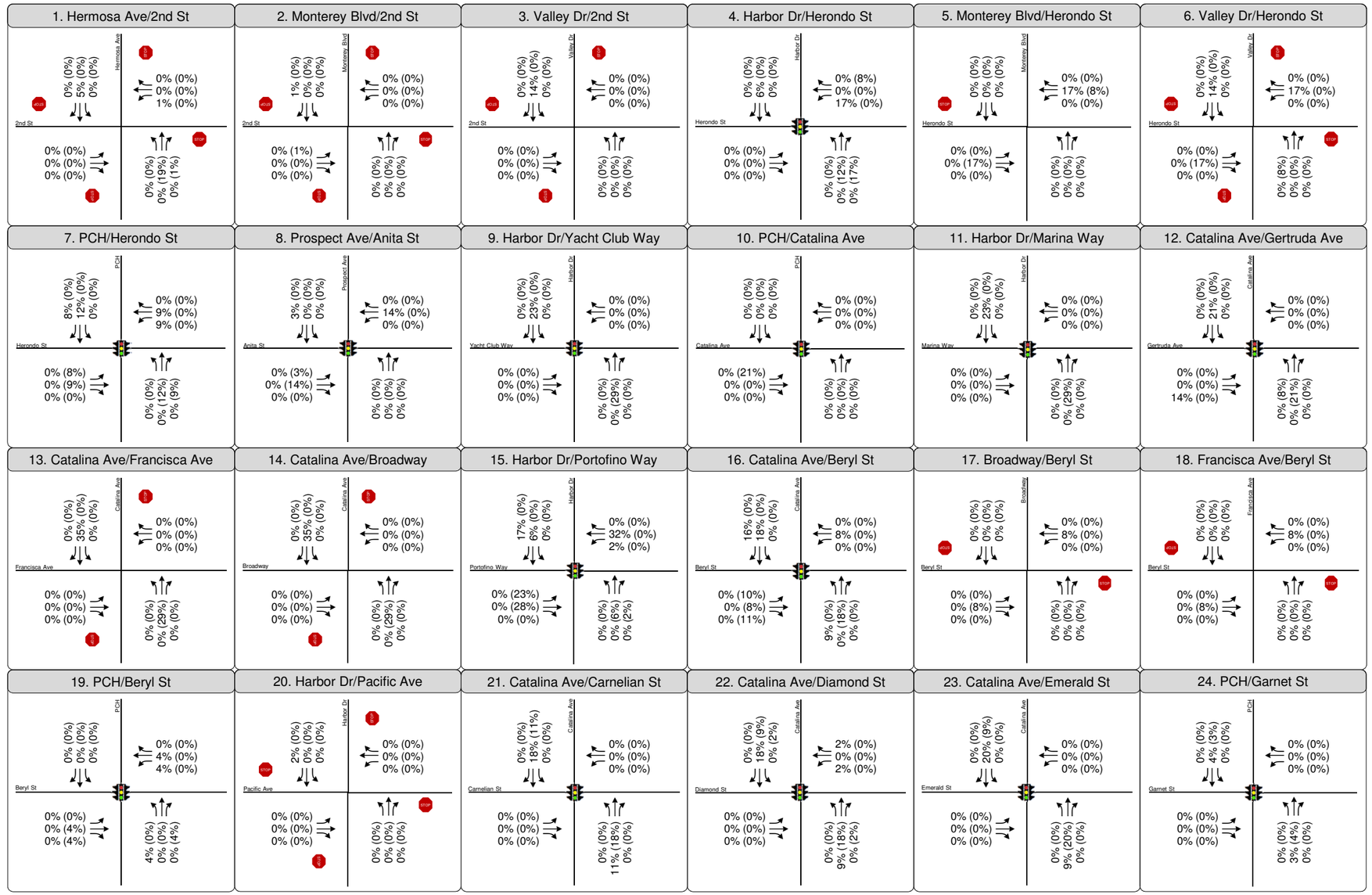


LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

Figure 8
Peak Hour Traffic Volumes and Lane Configurations
Cumulative Plus Project Conditions

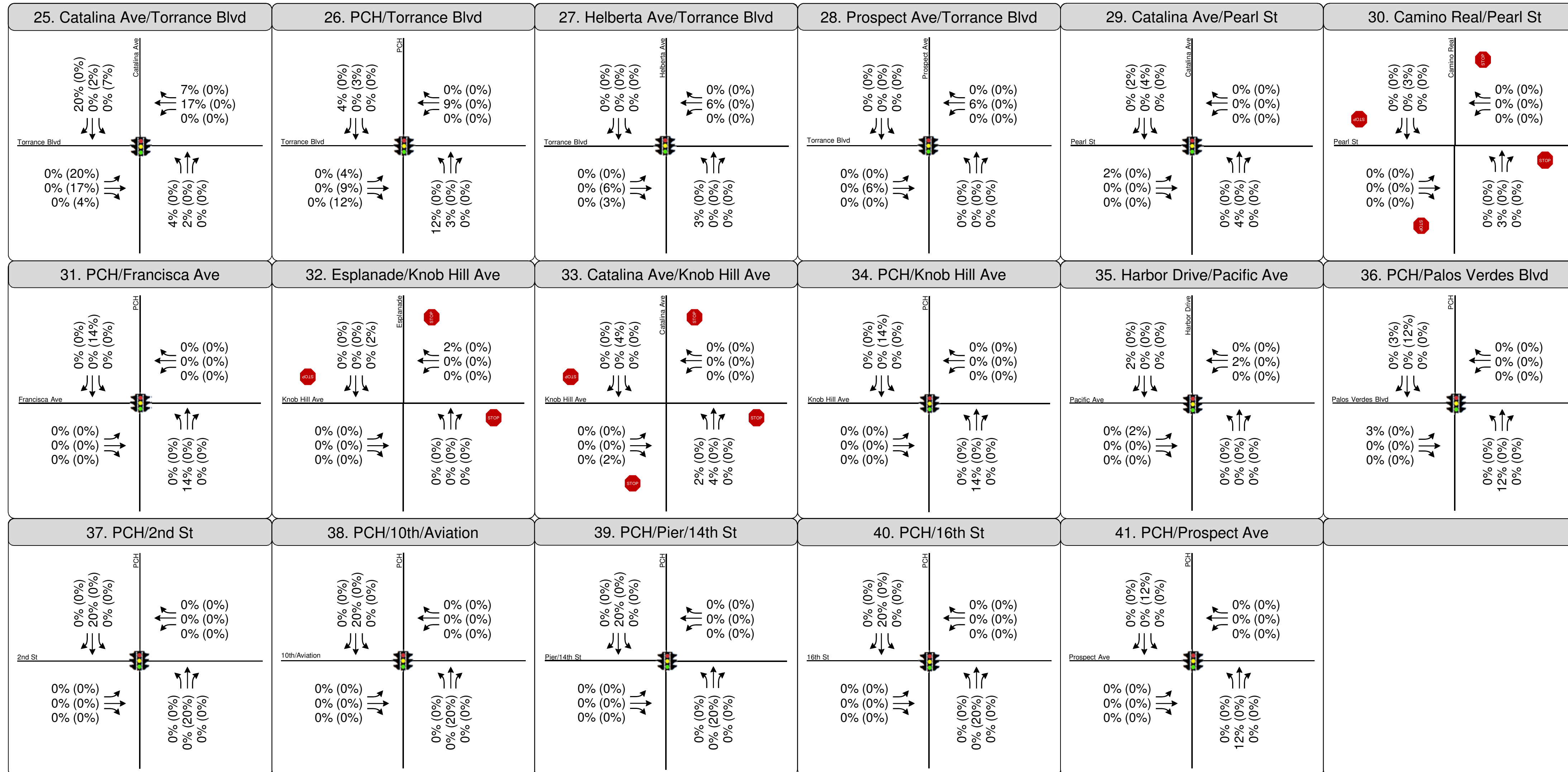




LEGEND

1	Study Intersection	AM (PM)	Peak Hour Traffic Volume
	Study Corridor	STOP	Stop Sign
	Turn Lane		

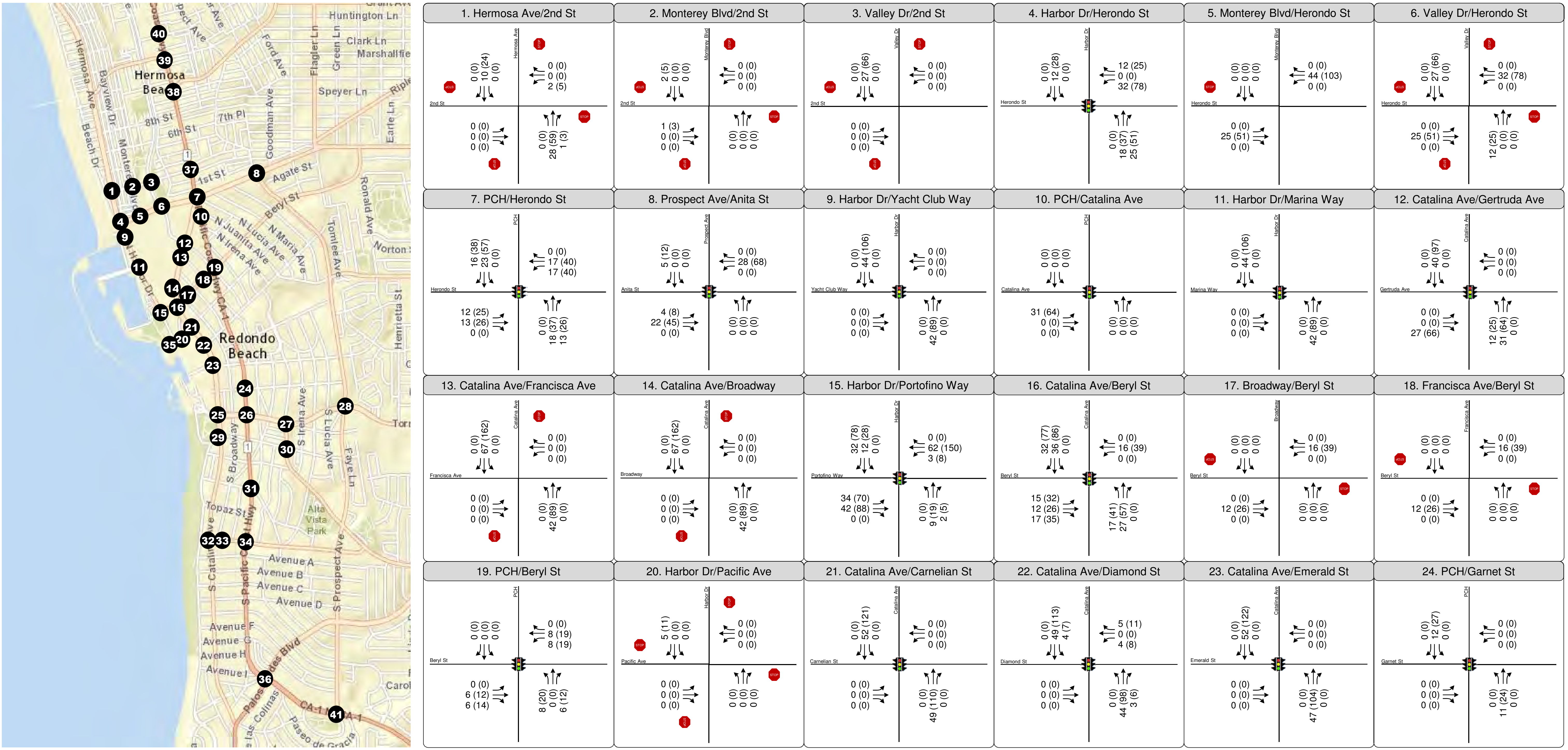
Figure 9
Percentage Project No Pacific Trip Distributions
Inbound (Outbound)



LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

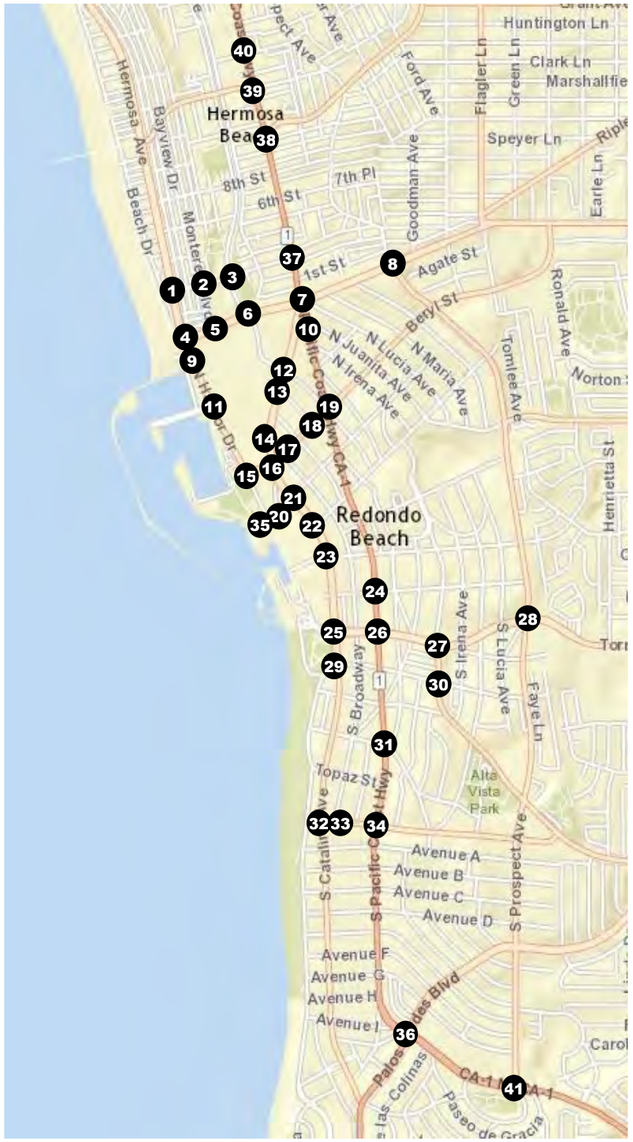
Figure 9
Percentage Project No Pacific Trip Distributions
Inbound (Outbound)

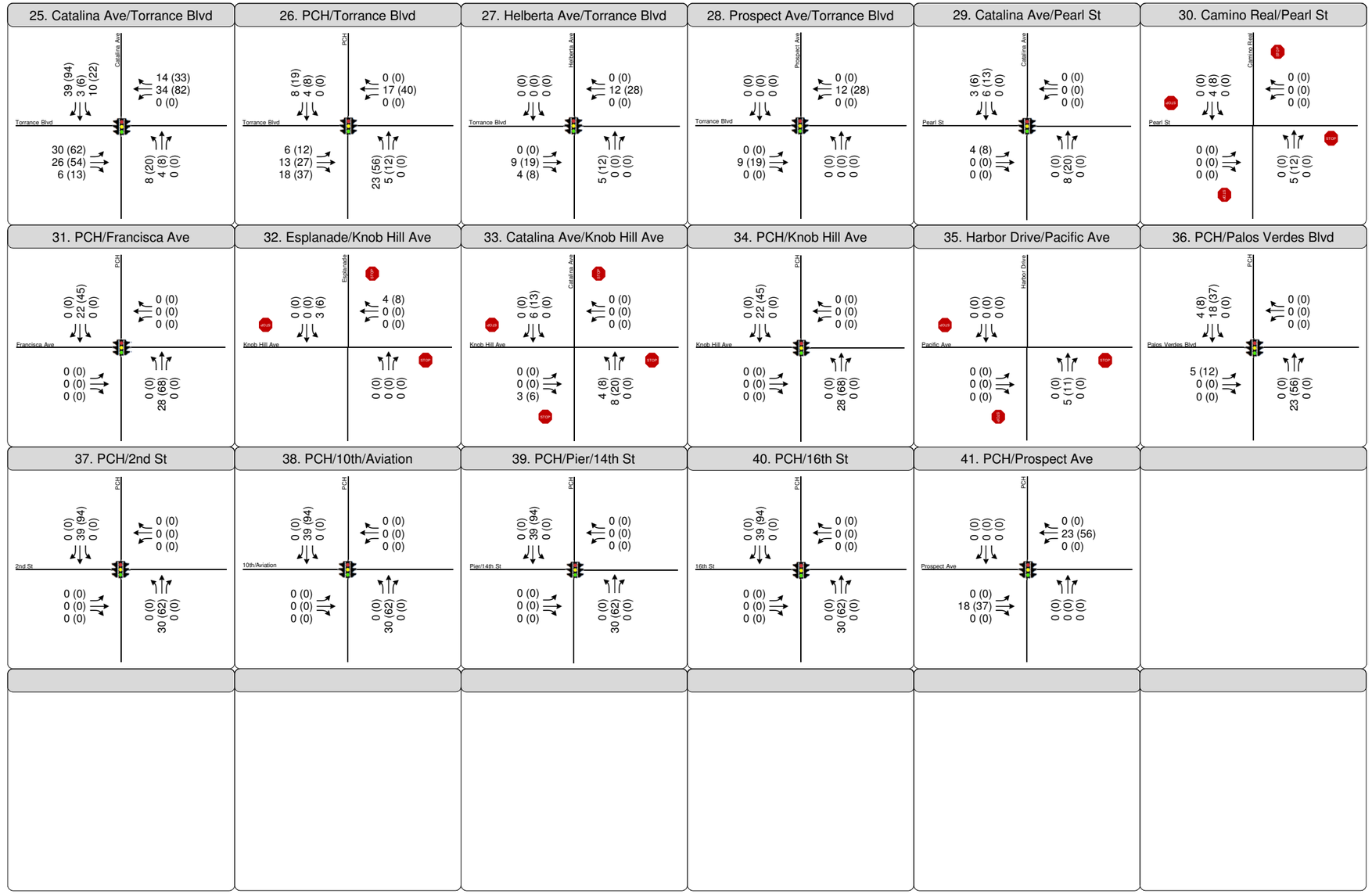


LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

Figure 10
Peak Hour Traffic Volumes and Lane Configurations
Project Only No Pacific Volumes

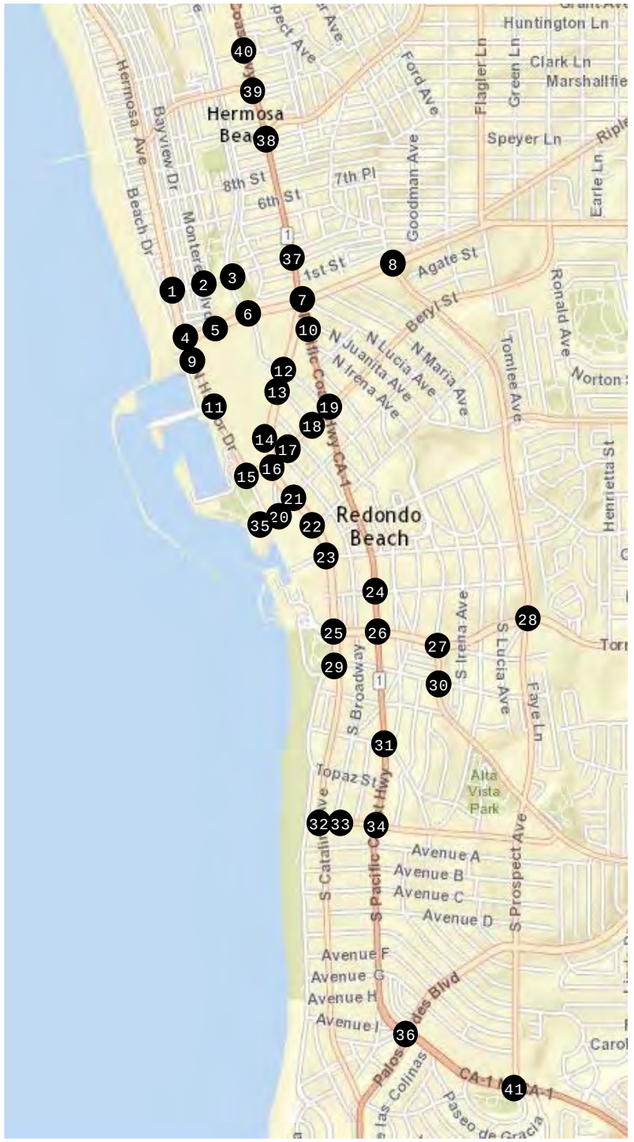


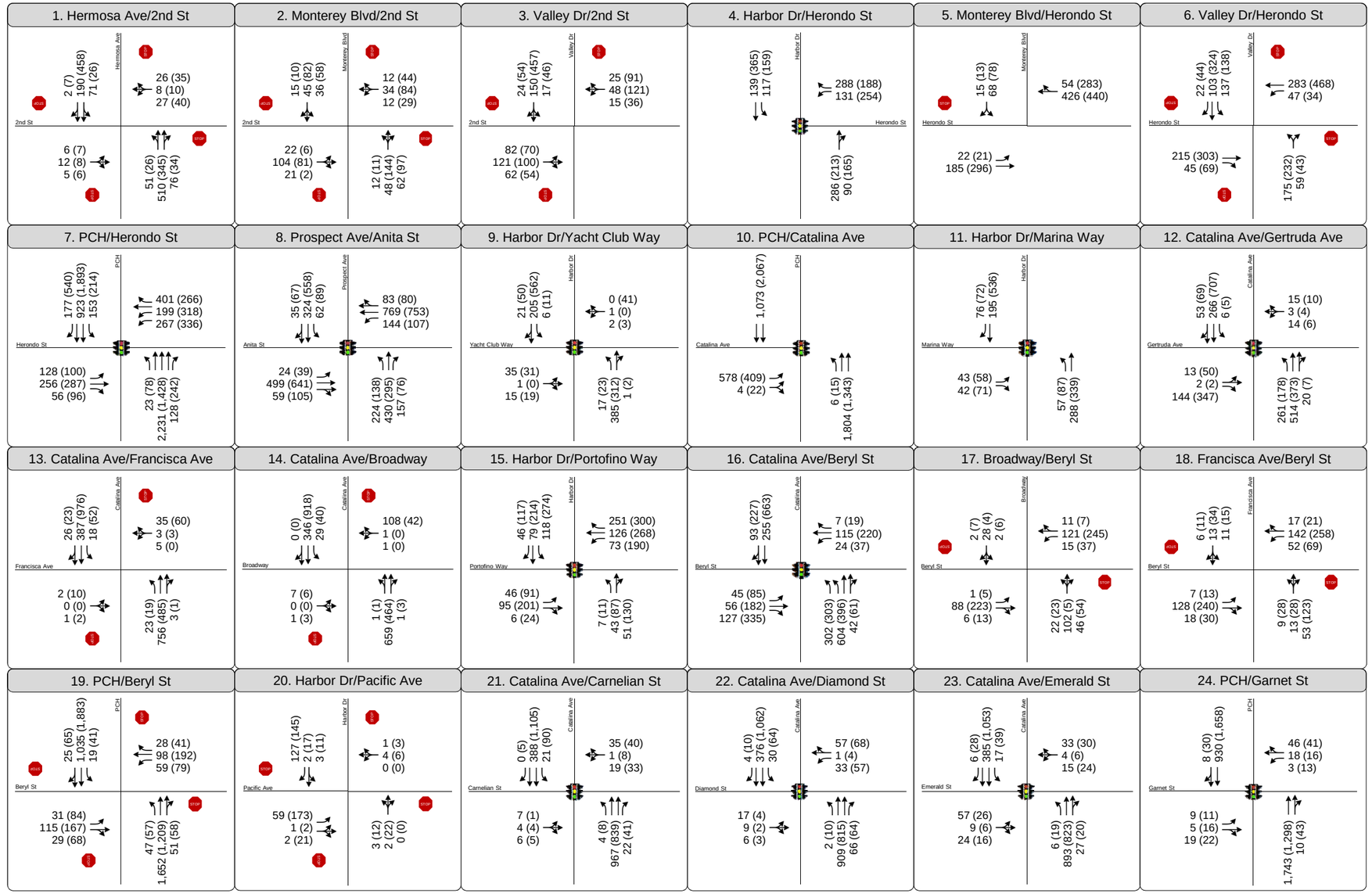


LEGEND

- 1 Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

Figure 10
Peak Hour Traffic Volumes and Lane Configurations
Project Only No Pacific Volumes

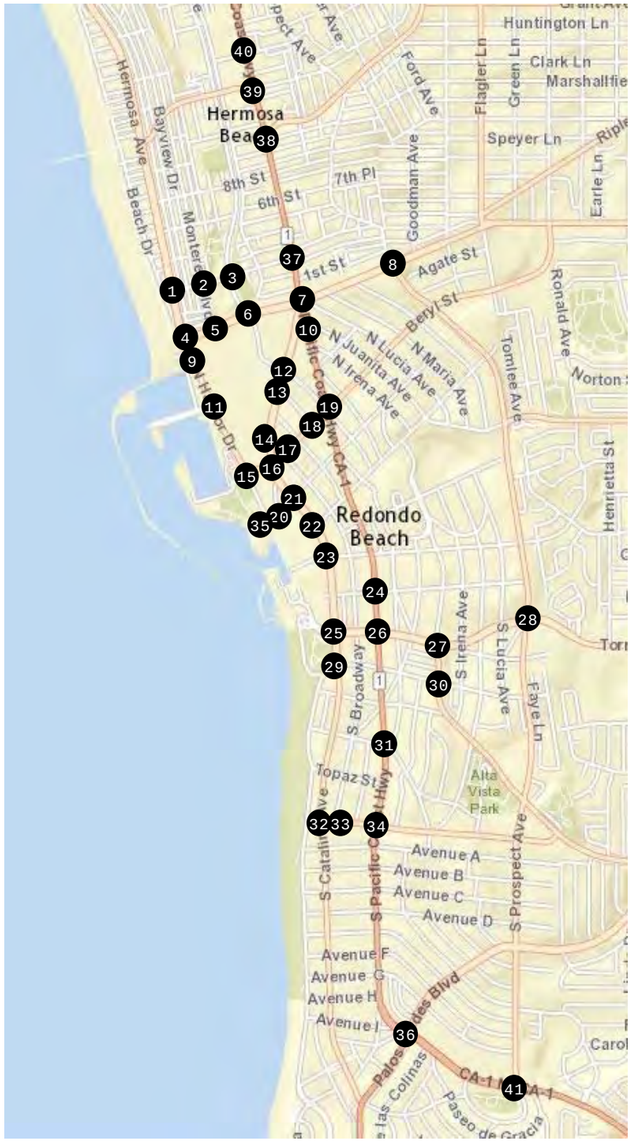


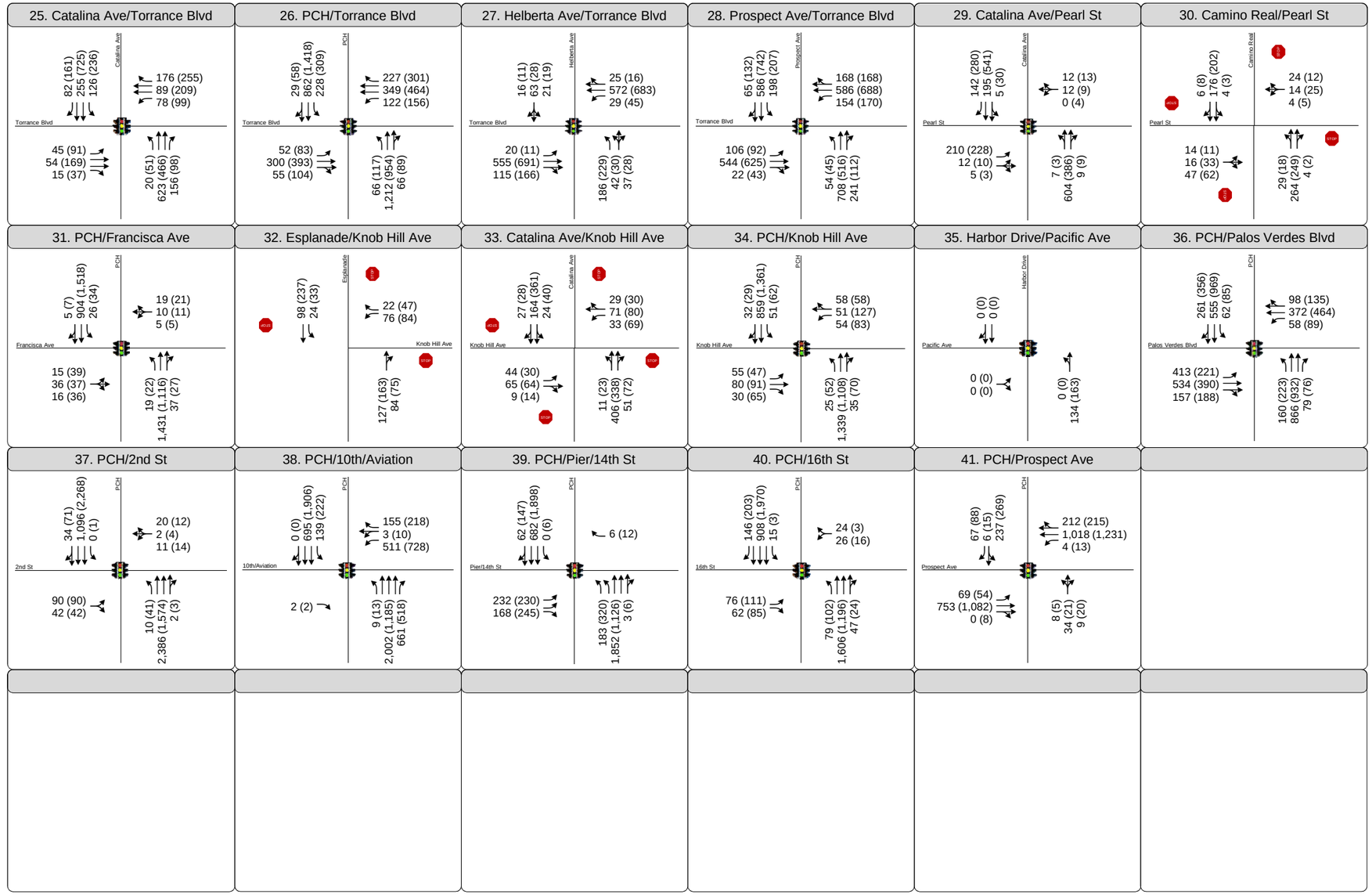


LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

Figure 11
Peak Hour Traffic Volumes and Lane Configurations
Existing Plus Project No Pacific Conditions

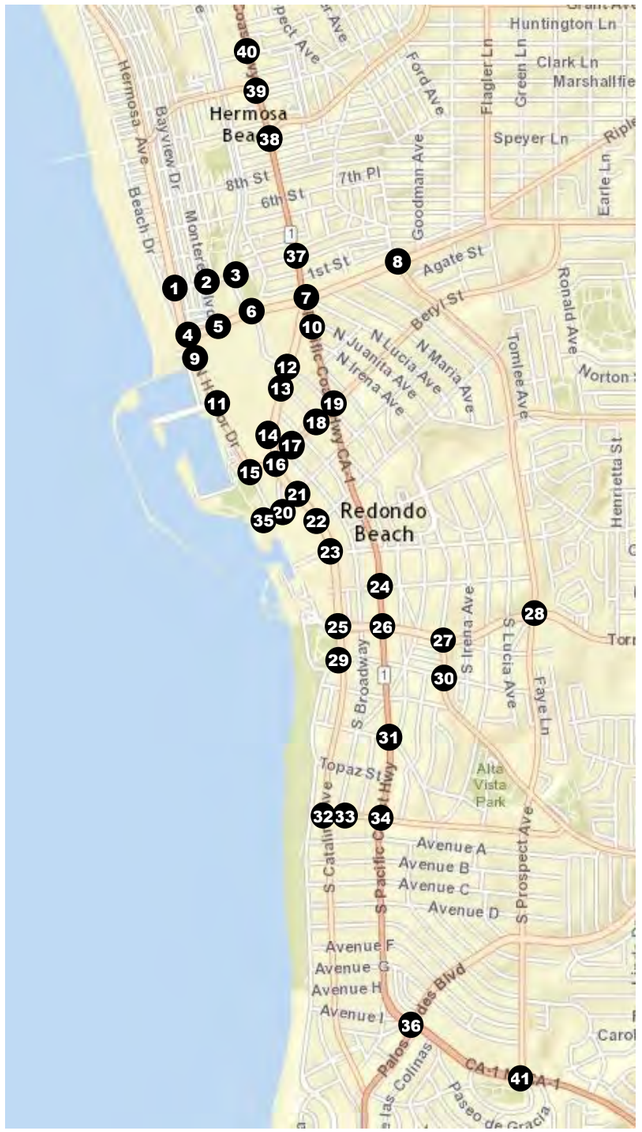


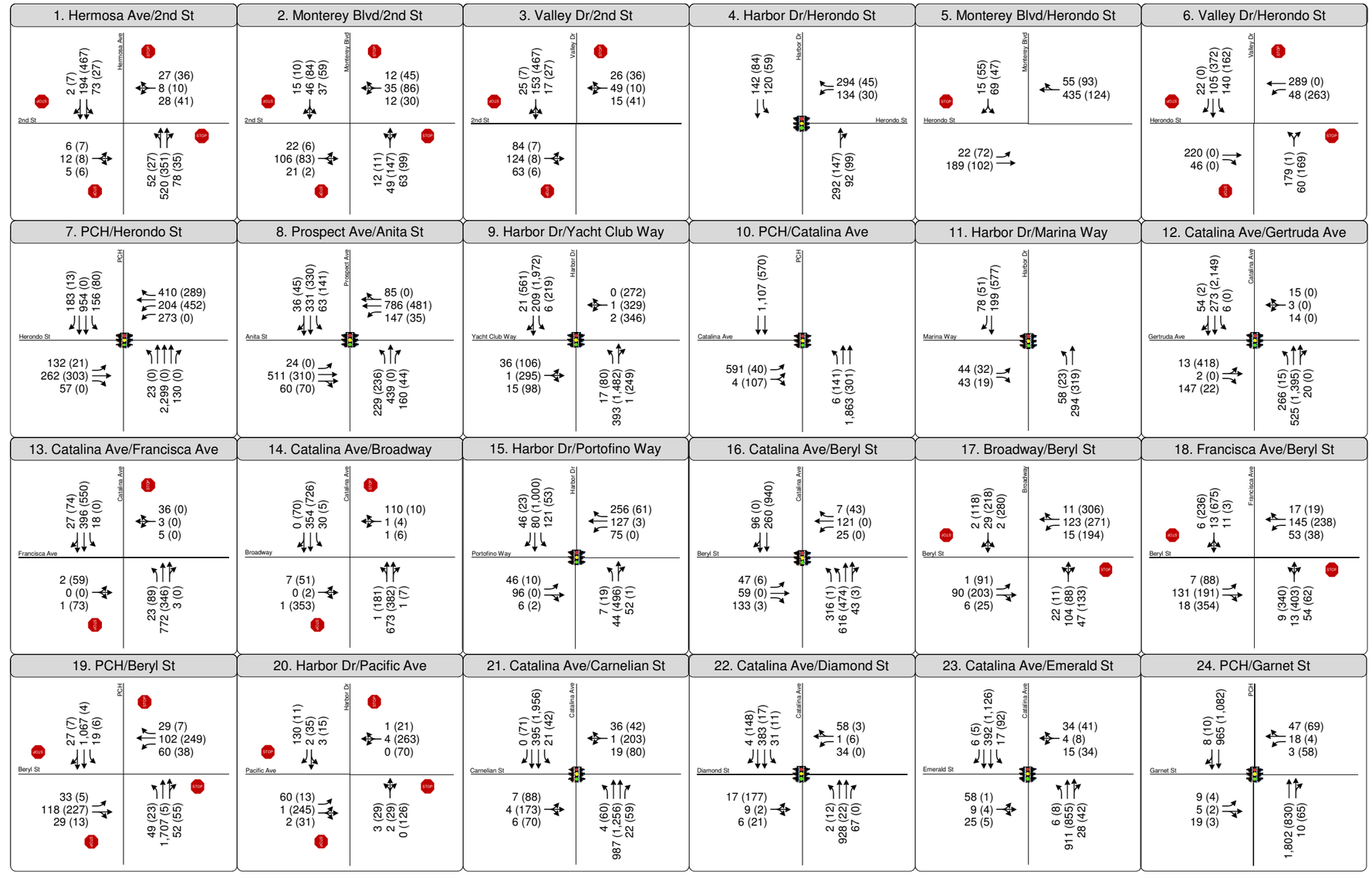


LEGEND

1	Study Intersection	AM (PM)	Peak Hour Traffic Volume
	Study Corridor	STOP	Stop Sign
	Turn Lane		

Figure 11
Peak Hour Traffic Volumes and Lane Configurations
Existing Plus Project No Pacific Conditions

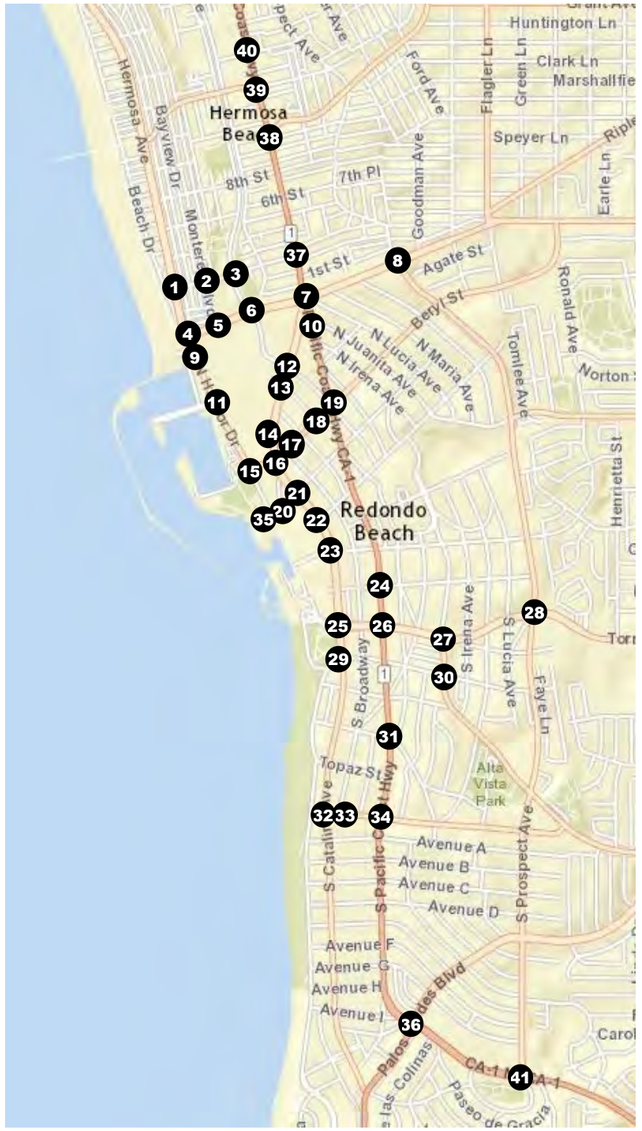


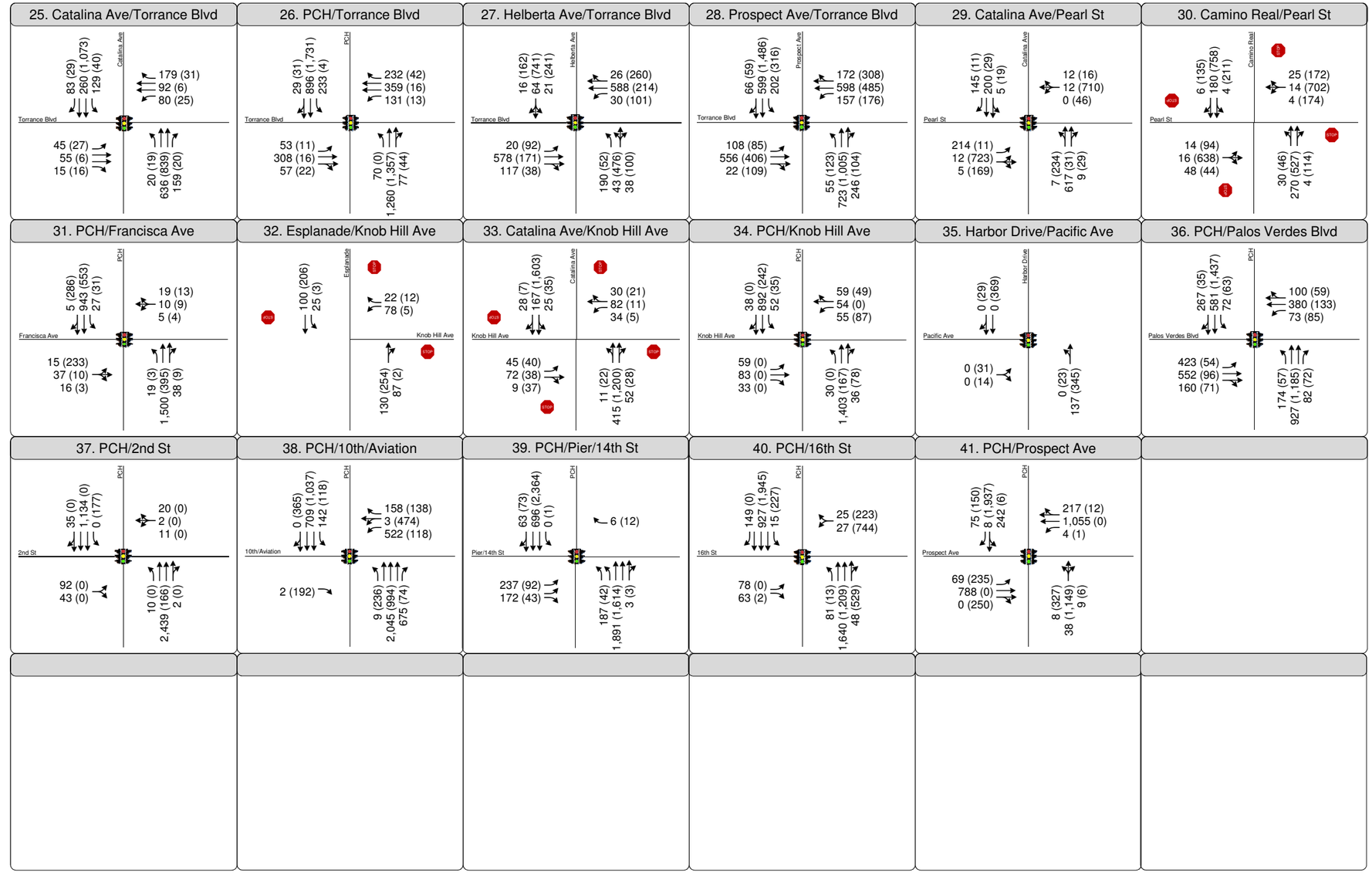


LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

Figure 12
Peak Hour Traffic Volumes and Lane Configurations
Cumulative Plus Project No Pacific Conditions

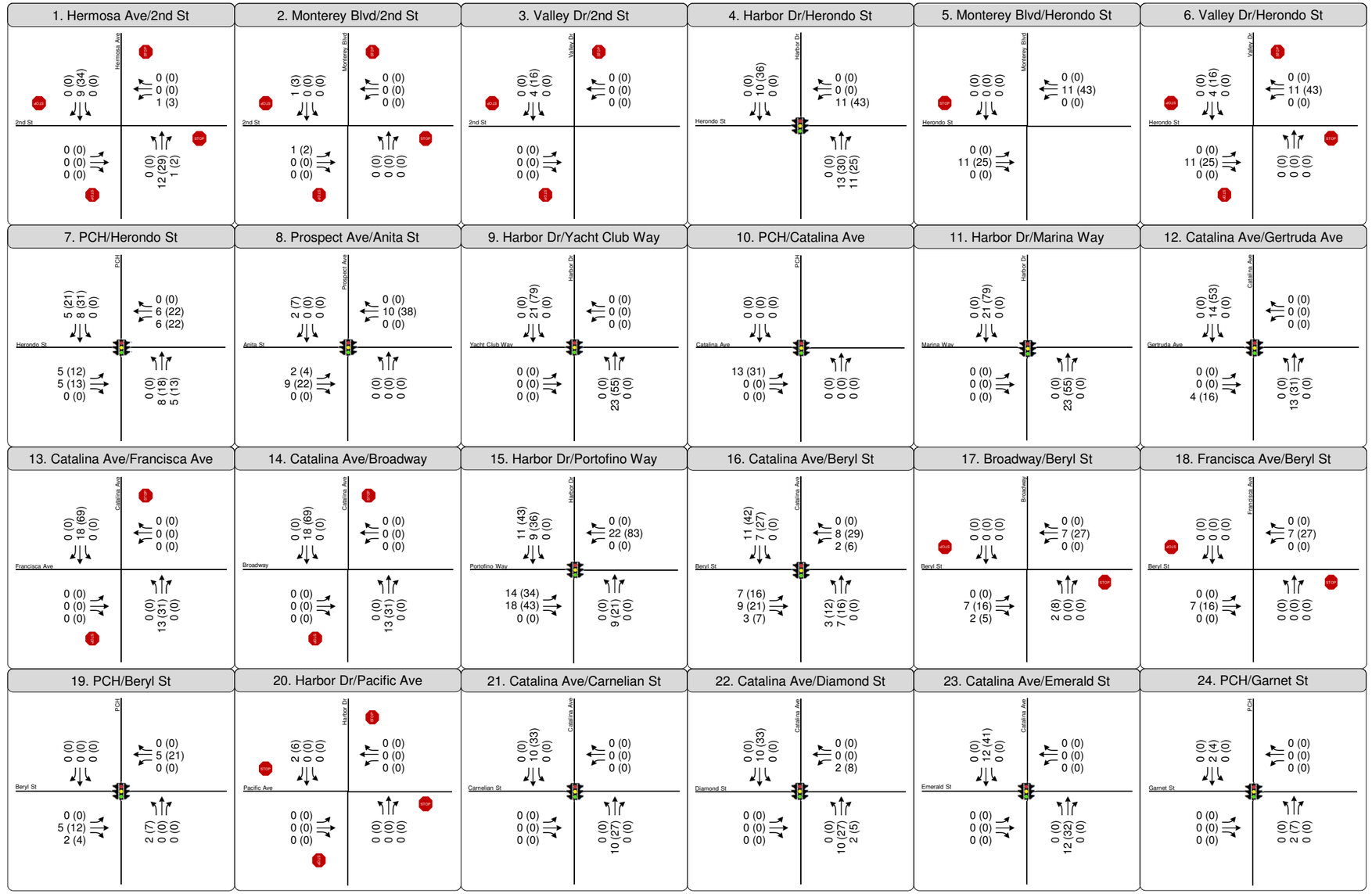




LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

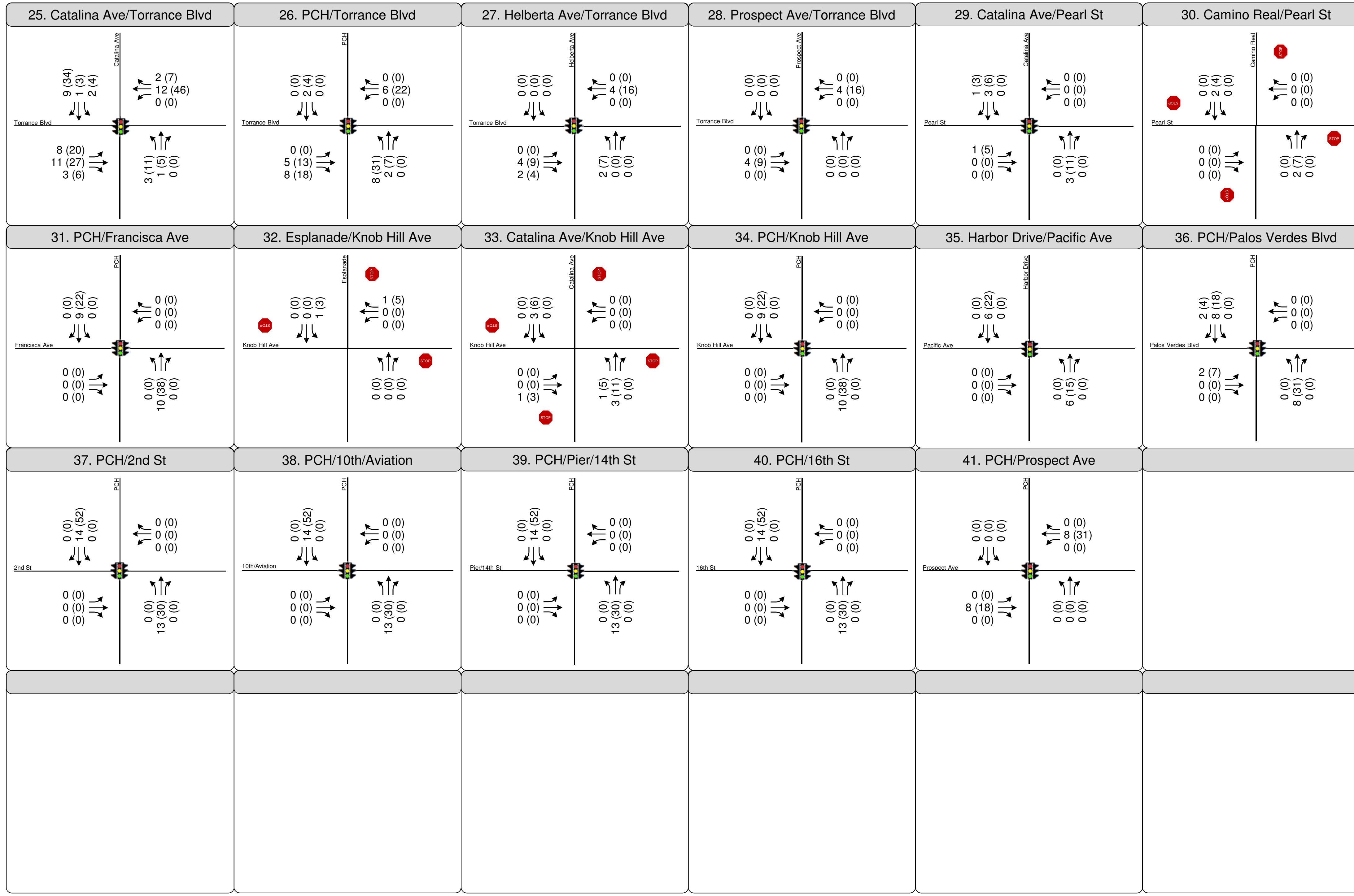
Figure 12
Peak Hour Traffic Volumes and Lane Configurations
Cumulative Plus Project No Pacific Conditions



LEGEND

1	Study Intersection	AM (PM)	Peak Hour Traffic Volume
	Study Corridor	STOP	Stop Sign
	Turn Lane		

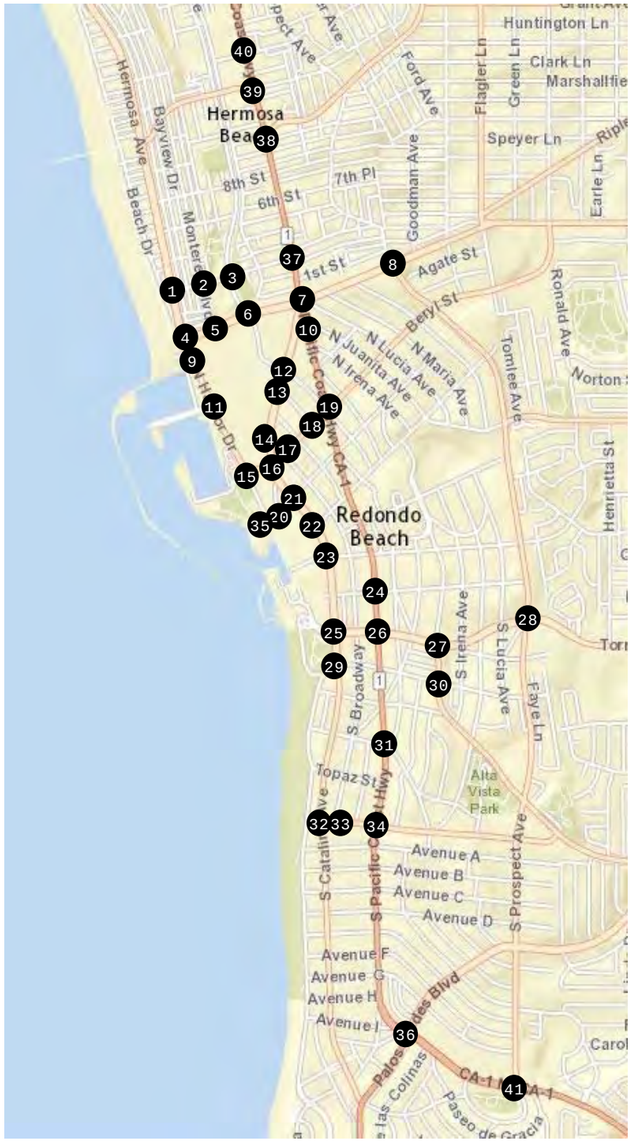
Figure 13
Peak Hour Traffic Volumes and Lane Configurations
Project Only Reduced Density Volumes

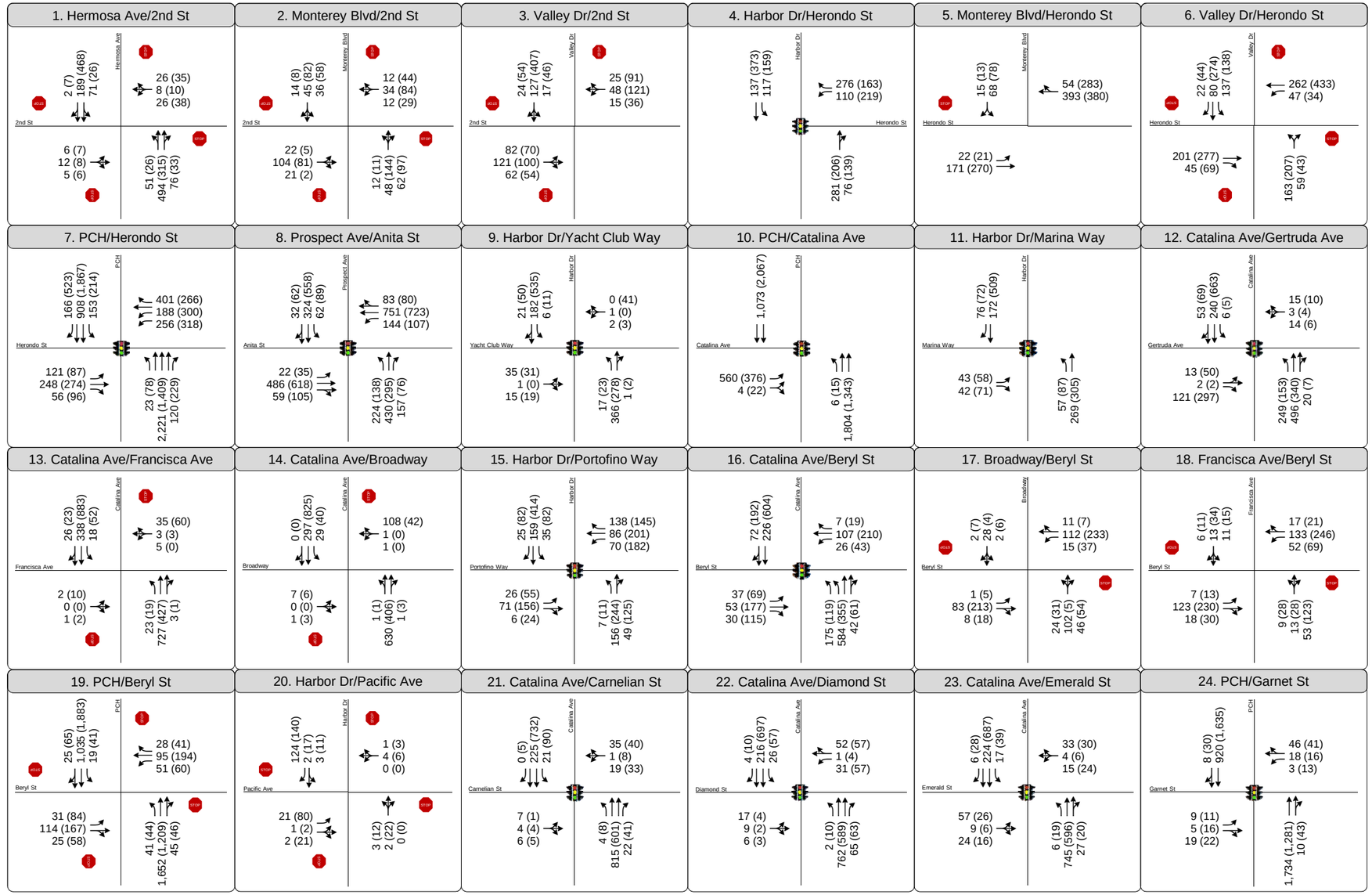


LEGEND

- ❶ Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

Figure 13
Peak Hour Traffic Volumes and Lane Configurations
Project Only Reduced Density Volumes

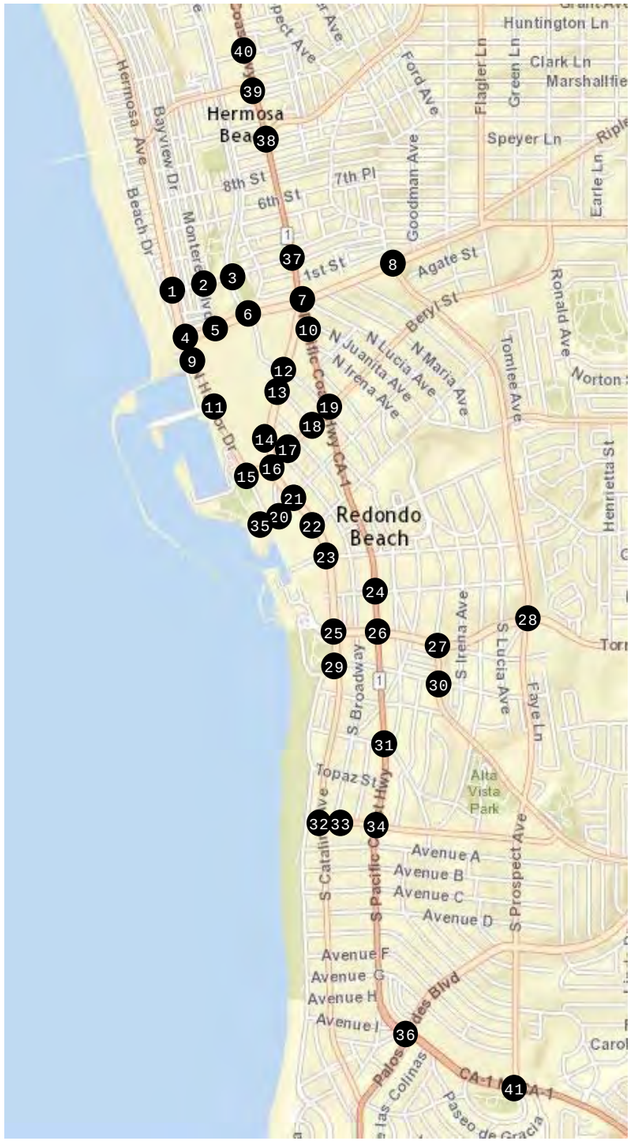


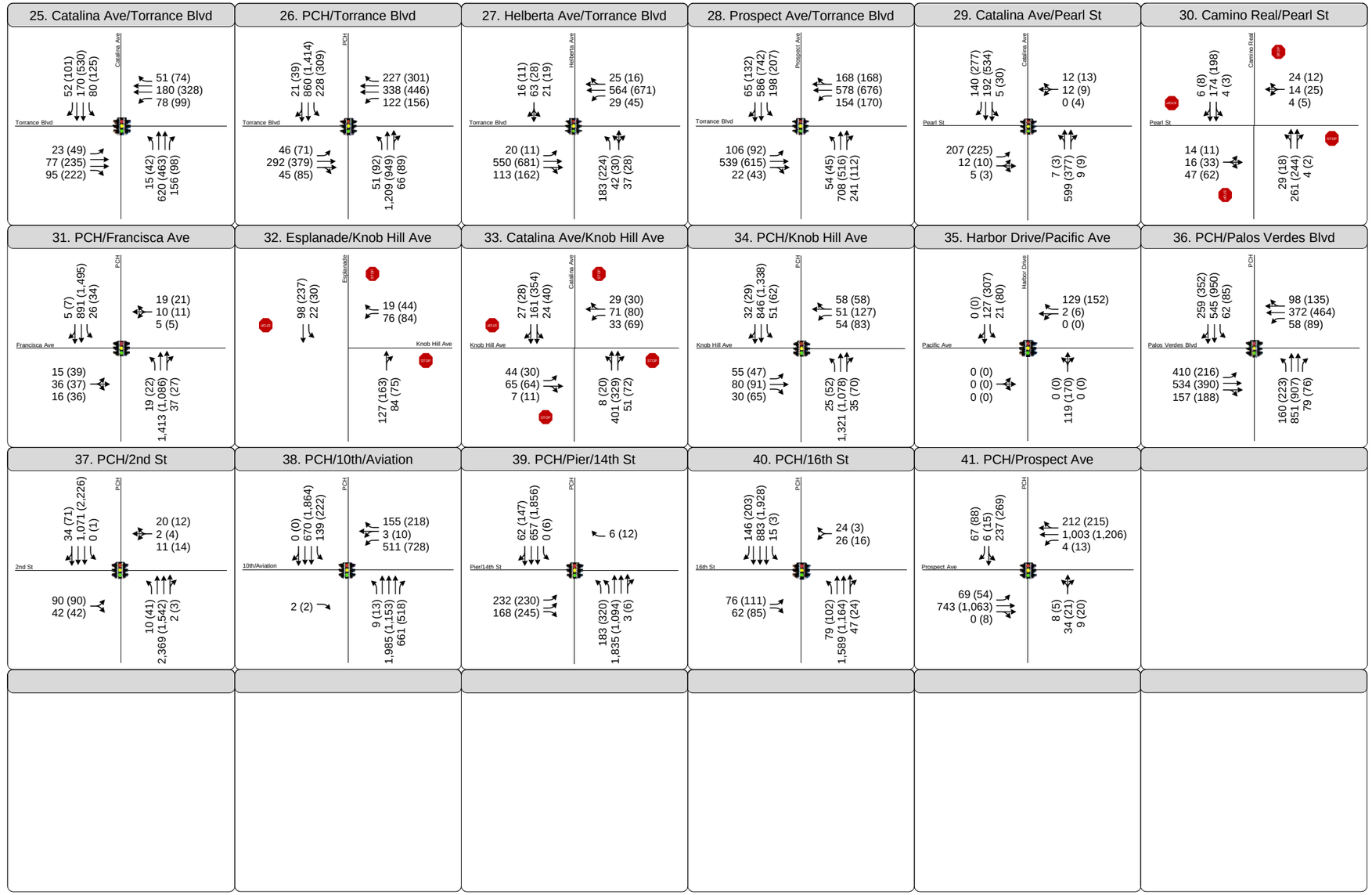


LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

Figure 14
Peak Hour Traffic Volumes and Lane Configurations
Existing Plus Project Reduced Density Conditions

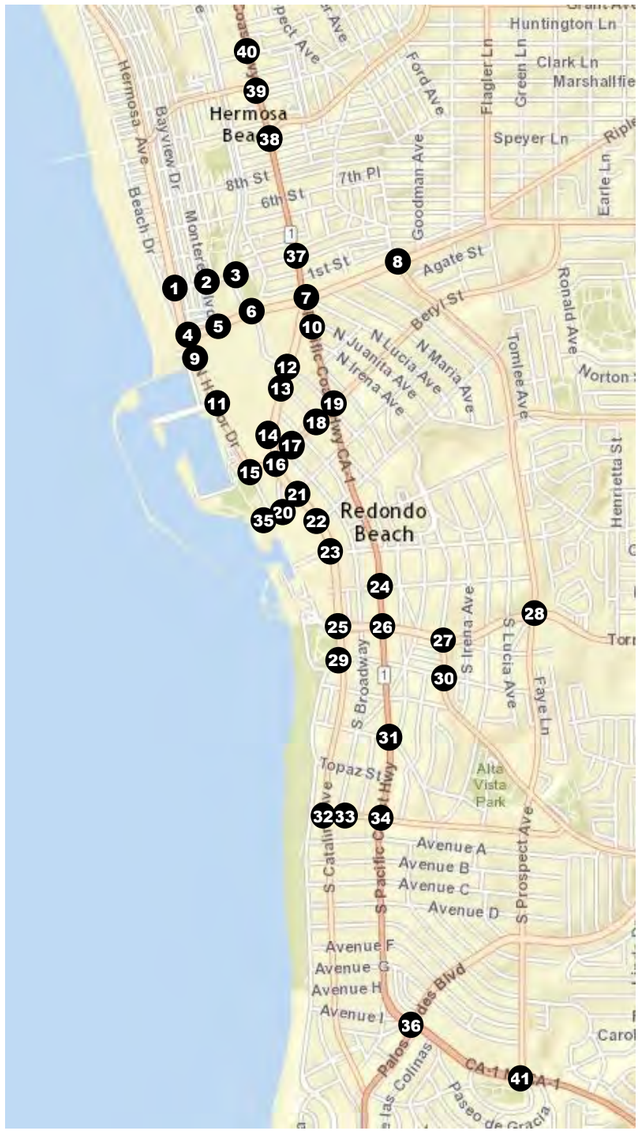


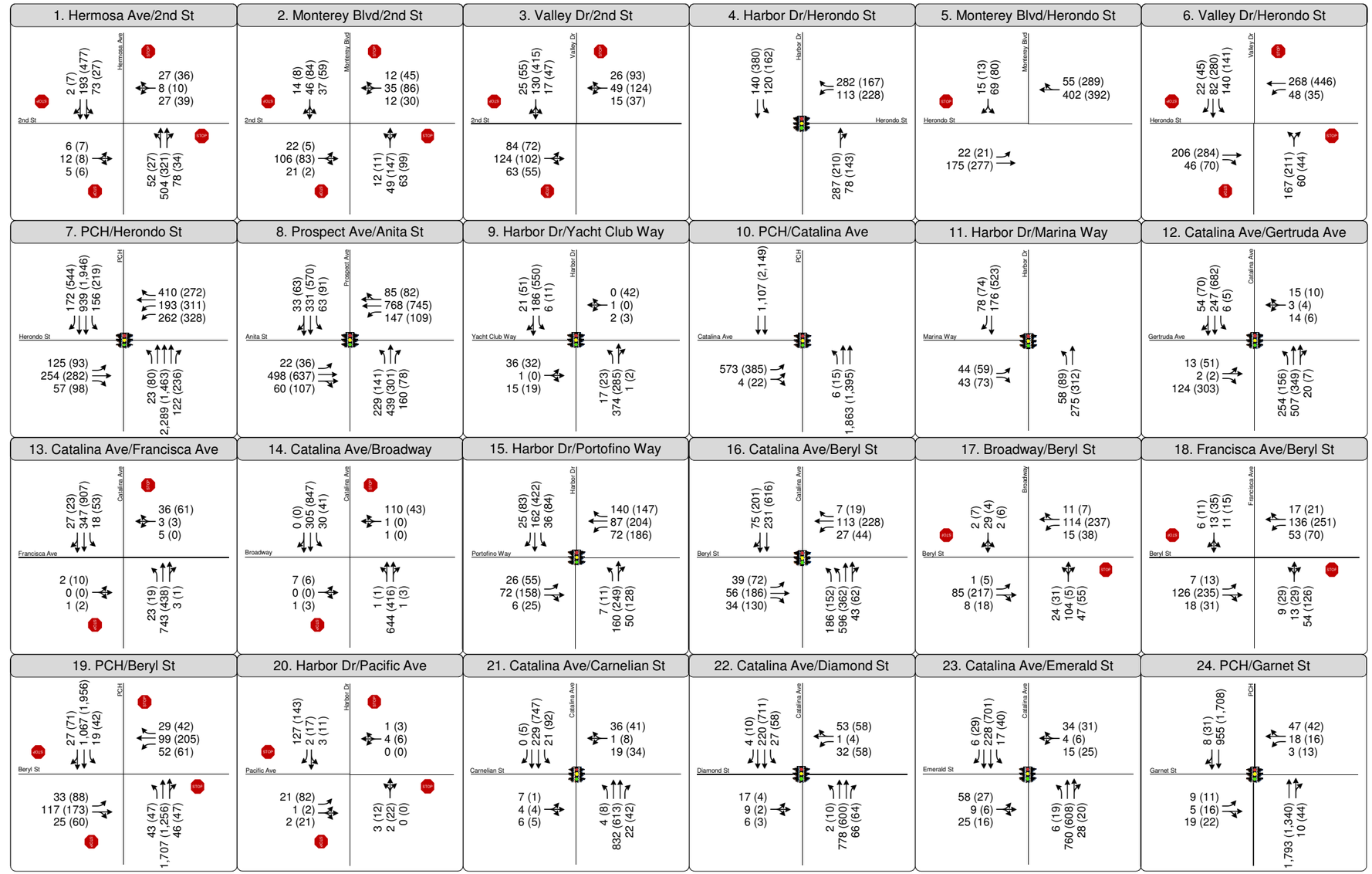


LEGEND

1	Study Intersection	AM (PM)	Peak Hour Traffic Volume
	Study Corridor	STOP	Stop Sign
	Turn Lane		

Figure 14
Peak Hour Traffic Volumes and Lane Configurations
Existing Plus Project Reduced Density Conditions

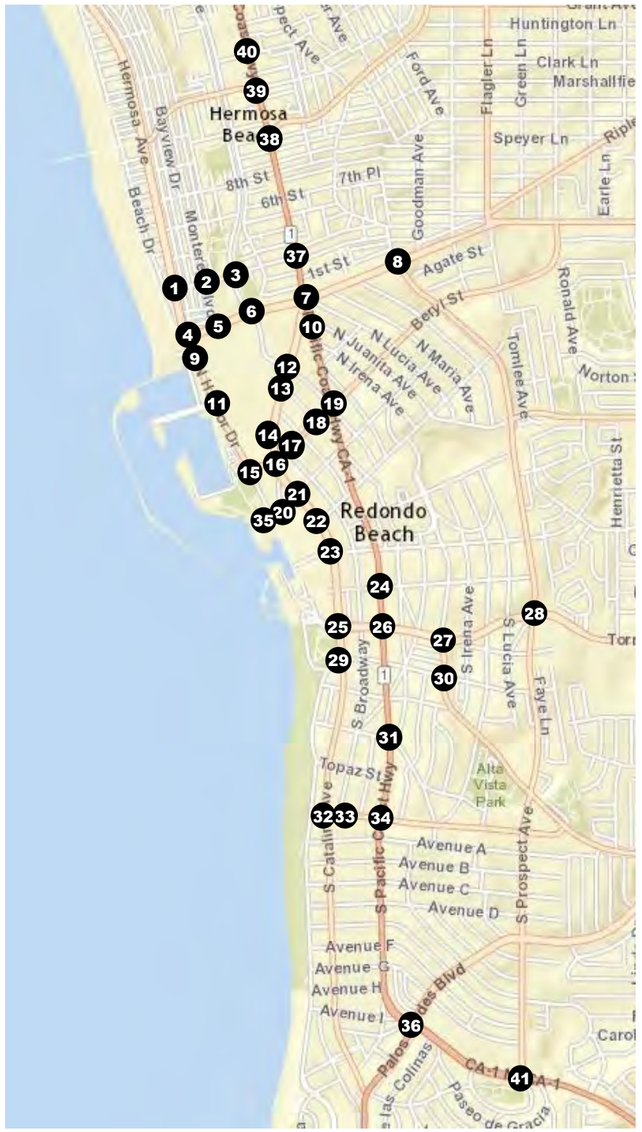




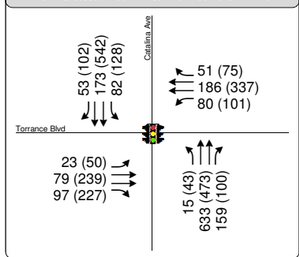
LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

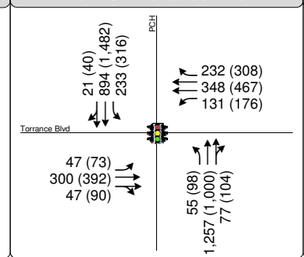
Figure 15
Peak Hour Traffic Volumes and Lane Configurations
Cumulative Plus Project Reduced Density Conditions



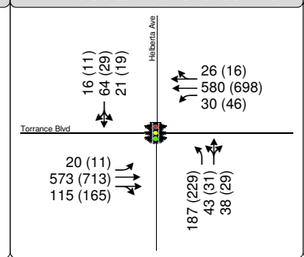
25. Catalina Ave/Torrance Blvd



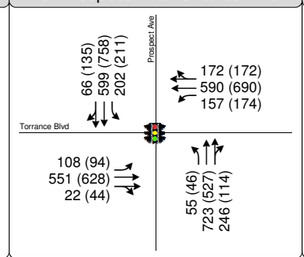
26. PCH/Torrance Blvd



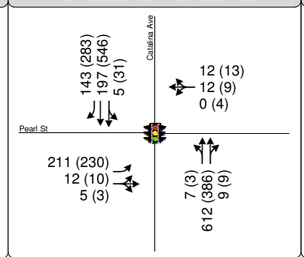
27. Helberta Ave/Torrance Blvd



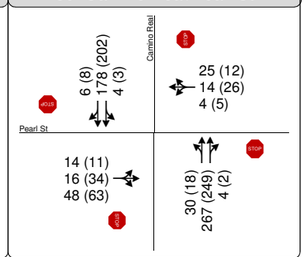
28. Prospect Ave/Torrance Blvd



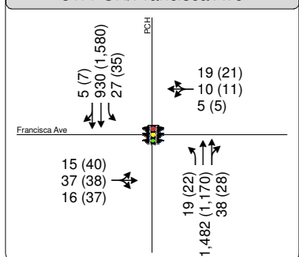
29. Catalina Ave/Pearl St



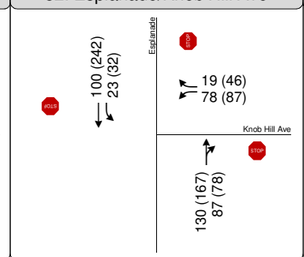
30. Camino Real/Pearl St



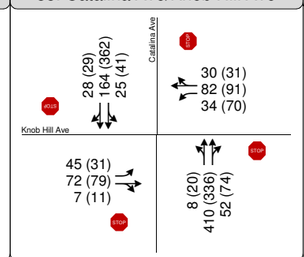
31. PCH/Francisca Ave



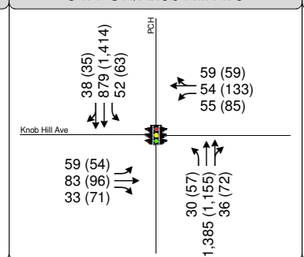
32. Esplanade/Knob Hill Ave



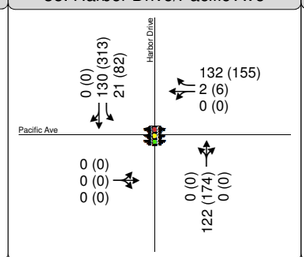
33. Catalina Ave/Knob Hill Ave



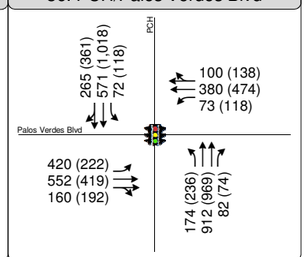
34. PCH/Knob Hill Ave



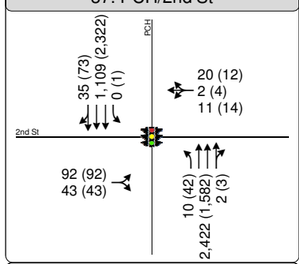
35. Harbor Drive/Pacific Ave



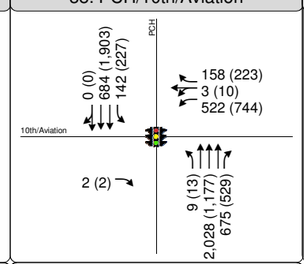
36. PCH/Palos Verdes Blvd



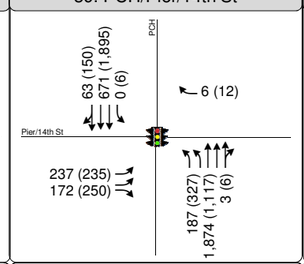
37. PCH/2nd St



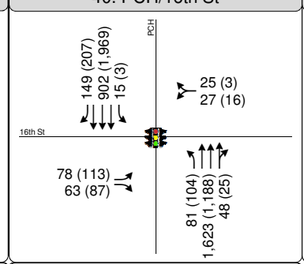
38. PCH/10th/Aviation



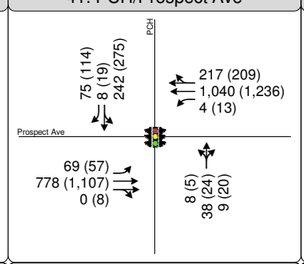
39. PCH/Pier/14th St



40. PCH/16th St



41. PCH/Prospect Ave



LEGEND

- Study Intersection
- Study Corridor
- Turn Lane
- AM (PM) Peak Hour Traffic Volume
- Stop Sign

Figure 15
Peak Hour Traffic Volumes and Lane Configurations
Cumulative Plus Project Reduced Density Conditions

APPENDIX X-3**: TRAFFIC, PEDESTRIAN & BICYCLE COUNTS**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-001

Day: Thursday

City: Hermosa Beach

Date: 3/20/2014

AM

NS/EW Streets:	Hermosa Ave			Hermosa Ave			2nd St			2nd St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	1	0	0	1	0	
7:00 AM	4	41	13	2	21	0	1	0	1	3	0	2	88
7:15 AM	4	70	9	3	19	0	2	1	1	2	0	0	111
7:30 AM	0	109	14	3	25	0	0	3	1	5	1	4	165
7:45 AM	4	136	25	7	35	0	0	2	0	4	1	4	218
8:00 AM	12	135	24	11	29	2	2	1	1	3	0	3	223
8:15 AM	4	117	15	4	46	1	1	1	1	6	0	5	201
8:30 AM	6	88	12	4	40	0	2	1	2	2	1	2	160
8:45 AM	1	85	22	4	33	0	0	2	2	7	2	2	160
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	35	781	134	38	248	3	8	11	9	32	5	22	1326
APPROACH %'s :	3.68%	82.21%	14.11%	13.15%	85.81%	1.04%	28.57%	39.29%	32.14%	54.24%	8.47%	37.29%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	20	497	78	25	135	3	3	7	3	18	2	16	807
PEAK HR FACTOR :		0.870			0.799			0.813			0.818		0.905

UTURNS

	NB	SB	EB	WB
7:00 AM	4	0	0	0
7:15 AM	1	0	0	0
7:30 AM	0	0	0	0
7:45 AM	2	2	0	0
8:00 AM	8	7	0	0
8:15 AM	2	0	0	0
8:30 AM	2	0	0	0
8:45 AM	1	0	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	20	9	0	0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-001

Day: Thursday

City: Hermosa Beach

Date: 3/20/2014

PM

NS/EW Streets:	Hermosa Ave			Hermosa Ave			2nd St			2nd St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	1	0	0	1	0	
4:00 PM	6	44	7	3	82	0	3	0	2	7	2	2	158
4:15 PM	12	63	6	4	75	0	1	1	3	7	1	13	186
4:30 PM	2	67	10	10	113	1	1	3	1	15	4	18	245
4:45 PM	8	85	8	7	108	3	2	2	2	7	1	7	240
5:00 PM	7	68	7	5	97	2	0	1	2	4	4	9	206
5:15 PM	9	66	6	4	116	1	4	2	1	9	1	1	220
5:30 PM	8	68	7	12	107	1	0	2	0	11	4	2	222
5:45 PM	7	90	9	11	88	2	1	0	2	7	1	3	221
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	59	551	60	56	786	10	12	11	13	67	18	55	1698
APPROACH %'s :	8.81%	82.24%	8.96%	6.57%	92.25%	1.17%	33.33%	30.56%	36.11%	47.86%	12.86%	39.29%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	26	286	31	26	434	7	7	8	6	35	10	35	911
PEAK HR FACTOR :		0.849			0.942			0.750			0.541		0.930

UTURNS	NB	SB	EB	WB
4:00 PM	4	1	0	1
4:15 PM	6	0	0	0
4:30 PM	2	4	0	0
4:45 PM	6	1	0	0
5:00 PM	4	1	0	0
5:15 PM	3	1	0	0
5:30 PM	5	2	0	0
5:45 PM	4	3	0	0
TOTAL VOLUMES :	34	13	0	1

CONTROL : 4-Way Stop

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-001
N/S Street: Hermosa Ave
E/W Street: 2nd St
DATE: 3/20/2014 DAY: Thursday
CITY: Hermosa Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	1	0	1	0	0	3	0
7:15 AM	3	2	2	0	1	0	1	2
7:30 AM	1	3	2	3	1	0	3	0
7:45 AM	2	4	2	2	0	1	1	1
8:00 AM	2	2	4	0	0	1	1	3
8:15 AM	1	3	1	1	0	0	0	1
8:30 AM	3	4	3	3	1	3	2	2
8:45 AM	4	2	6	3	0	0	1	3
TOTALS	**16**	**21**	**20**	**13**	**3**	**5**	**12**	**12**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	3	0	0	2	1	0	1	0	0	1	0
7:15 AM	0	2	0	0	0	0	0	2	0	0	0	1
7:30 AM	0	10	0	1	4	0	0	1	0	0	0	0
7:45 AM	0	6	0	0	3	0	0	0	0	1	0	0
8:00 AM	0	7	2	1	5	0	0	0	0	0	2	0
8:15 AM	0	2	0	0	4	0	0	0	0	0	0	0
8:30 AM	0	3	0	0	2	0	0	0	0	0	0	0
8:45 AM	0	7	0	1	1	0	0	1	0	0	1	0
TOTALS	**0**	**40**	**2**	**3**	**21**	**1**	**0**	**5**	**0**	**1**	**4**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	5	5	1	4	4	0	1	4
4:15 PM	6	2	2	4	0	2	2	2
4:30 PM	4	2	0	3	0	2	1	1
4:45 PM	5	0	5	6	0	0	0	0
5:00 PM	8	3	2	4	0	2	1	9
5:15 PM	0	2	5	5	1	0	3	10
5:30 PM	1	4	8	2	0	1	1	4
5:45 PM	3	7	6	4	3	0	4	1
TOTALS	**32**	**25**	**29**	**32**	**8**	**7**	**13**	**31**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	1	2	0	0	6	0	0	0	0	0	1	0
4:15 PM	1	5	0	0	1	0	0	2	0	0	1	0
4:30 PM	0	2	0	0	2	0	0	0	0	0	1	0
4:45 PM	4	0	0	0	4	0	0	0	0	0	1	0
5:00 PM	0	1	1	0	6	0	0	1	0	0	2	0
5:15 PM	2	6	0	0	8	0	0	3	0	1	0	0
5:30 PM	0	0	0	0	4	0	0	0	2	1	0	0
5:45 PM	1	4	0	3	9	0	0	0	0	1	1	0
TOTALS	**9**	**20**	**1**	**3**	**40**	**0**	**0**	**6**	**2**	**3**	**7**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-001 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Hermosa Ave			Hermosa Ave			2nd St			2nd St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	0	1	0	0	1	0					
7:00 AM	20	58	11	8	31	0	0	0	2	4	0	4	138	6	2	0	0
7:15 AM	16	82	4	5	37	1	1	3	0	2	2	5	158	5	1	0	0
7:30 AM	7	95	11	12	29	1	1	1	3	5	1	2	168	2	3	0	0
7:45 AM	11	120	22	9	42	0	3	4	2	7	4	5	229	3	0	0	0
8:00 AM	5	140	23	42	39	2	1	3	2	5	2	7	271	1	10	0	0
8:15 AM	16	123	18	8	50	0	0	3	0	7	1	9	235	5	2	0	0
8:30 AM	19	99	12	12	49	0	2	2	1	6	1	5	208	6	2	0	0
8:45 AM	12	98	18	15	52	1	3	3	1	5	2	4	214	3	3	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	106	815	119	111	329	5	11	19	11	41	13	41	1621	31	23	0	0
APPROACH %'s :	10.19%	78.37%	11.44%	24.94%	73.93%	1.12%	26.83%	46.34%	26.83%	43.16%	13.68%	43.16%					

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	51	482	75	71	180	2	6	12	5	25	8	26	943
PEAK HR FACTOR :		0.905			0.762			0.639			0.868		0.870

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-001 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Hermosa Ave			Hermosa Ave			2nd St			2nd St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	0	1	0	0	1	0					
4:00 PM	7	71	8	5	66	1	3	2	1	6	1	4	175	2	0	0	0
4:15 PM	10	68	3	9	87	1	0	1	1	5	0	5	190	3	1	0	0
4:30 PM	8	66	9	7	82	0	0	1	3	6	3	4	189	1	0	0	0
4:45 PM	18	72	7	4	101	2	0	1	8	4	3	8	228	5	0	0	0
5:00 PM	10	83	6	10	86	3	1	2	1	11	2	8	223	2	1	0	0
5:15 PM	8	77	4	16	86	0	2	2	2	6	1	7	211	2	3	0	0
5:30 PM	13	61	11	8	90	0	1	0	0	5	3	7	199	4	1	0	0
5:45 PM	14	73	9	4	92	0	0	4	1	4	4	2	207	4	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	88	571	57	63	690	7	7	13	17	47	17	45	1622	23	6	0	0
APPROACH %'s :	12.29%	79.75%	7.96%	8.29%	90.79%	0.92%	18.92%	35.14%	45.95%	43.12%	15.60%	41.28%					

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	49	293	28	38	363	5	4	5	11	26	9	30	861
PEAK HR FACTOR :		0.934			0.949			0.556			0.774		0.944

CONTROL : 4-Way Stop

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-001_Peds & Bikes
N/S Street: Hermosa Ave
E/W Street: 2nd St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	0	4	1	1	0	0	1
7:15 AM	2	4	0	5	1	1	2	2
7:30 AM	4	5	1	3	0	1	1	1
7:45 AM	3	2	1	4	3	4	0	1
8:00 AM	2	4	0	2	3	3	0	1
8:15 AM	1	1	1	6	0	0	3	1
8:30 AM	4	0	1	3	0	3	3	6
8:45 AM	2	4	2	0	1	0	0	0
TOTALS	**19**	**20**	**10**	**24**	**9**	**12**	**9**	**13**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	3	0	1	2	0	0	1	0	0	1	0
7:15 AM	0	10	0	1	10	0	0	0	0	0	1	0
7:30 AM	0	1	0	0	4	0	4	1	0	0	0	0
7:45 AM	0	5	0	1	6	0	1	2	0	0	0	1
8:00 AM	0	2	0	0	2	0	0	2	3	0	0	0
8:15 AM	0	6	0	2	0	0	0	2	0	0	0	0
8:30 AM	0	4	0	1	1	1	0	2	0	0	1	0
8:45 AM	1	5	0	6	1	1	0	4	0	0	0	1
TOTALS	**1**	**36**	**0**	**12**	**26**	**2**	**5**	**14**	**3**	**0**	**3**	**2**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	6	7	1	3	5	2	5	0
4:15 PM	8	3	6	3	7	3	1	2
4:30 PM	2	2	3	1	0	2	2	5
4:45 PM	2	13	9	5	4	2	2	3
5:00 PM	4	1	14	6	1	0	1	2
5:15 PM	2	2	5	3	1	2	3	2
5:30 PM	2	6	5	2	5	5	0	1
5:45 PM	4	8	9	4	3	0	1	1
TOTALS	**30**	**42**	**52**	**27**	**26**	**16**	**15**	**16**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	6	1	1	1	0	0	2	0	0	1	0
4:15 PM	0	4	0	0	3	0	2	3	0	1	0	0
4:30 PM	0	2	0	1	3	0	0	3	0	0	1	0
4:45 PM	2	8	0	2	1	0	0	7	0	0	2	0
5:00 PM	2	4	0	5	4	0	0	11	0	0	3	0
5:15 PM	1	13	0	1	3	0	2	0	1	0	2	0
5:30 PM	1	6	0	0	8	2	1	7	0	0	2	0
5:45 PM	1	11	0	4	5	1	1	4	0	0	6	0
TOTALS	**7**	**54**	**1**	**14**	**28**	**3**	**6**	**37**	**1**	**1**	**17**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-002

Day: Thursday

City: Hermosa Beach

Date: 3/20/2014

AM

NS/EW Streets:	Monterey Blvd			Monterey Blvd			2nd St			2nd St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
7:00 AM	0	14	7	2	7	0	3	15	1	2	6	2	59
7:15 AM	0	8	6	9	14	0	0	14	2	0	4	3	60
7:30 AM	0	9	8	8	14	0	0	29	1	1	8	3	81
7:45 AM	1	12	16	8	18	0	1	44	1	4	6	7	118
8:00 AM	2	13	11	11	8	3	8	28	2	1	8	9	104
8:15 AM	1	11	12	10	20	4	2	21	3	5	10	7	106
8:30 AM	1	9	15	8	10	2	1	21	0	4	5	8	84
8:45 AM	0	16	21	9	18	0	10	23	2	3	9	7	118
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	92	96	65	109	9	25	195	12	20	56	46	730
APPROACH %'s :	2.59%	47.67%	49.74%	35.52%	59.56%	4.92%	10.78%	84.05%	5.17%	16.39%	45.90%	37.70%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	4	49	59	38	56	9	21	93	7	13	32	31	412
PEAK HR FACTOR :		0.757			0.757			0.796			0.864		0.873

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-002

Day: Thursday

City: Hermosa Beach

Date: 3/20/2014

PM

NS/EW Streets:	Monterey Blvd			Monterey Blvd			2nd St			2nd St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
4:00 PM	2	34	15	13	10	0	3	15	0	9	12	3	116
4:15 PM	4	33	24	3	9	1	1	15	2	4	21	9	126
4:30 PM	1	26	21	13	38	2	2	28	0	3	32	22	188
4:45 PM	2	37	27	18	13	1	0	18	1	11	19	2	149
5:00 PM	5	36	21	11	16	1	0	18	1	8	19	11	147
5:15 PM	3	45	28	16	15	1	1	17	0	7	14	9	156
5:30 PM	3	43	30	12	12	3	1	24	3	11	18	4	164
5:45 PM	0	35	24	14	17	1	1	20	1	9	15	9	146
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	20	289	190	100	130	10	9	155	8	62	150	69	1192
APPROACH %'s :	4.01%	57.92%	38.08%	41.67%	54.17%	4.17%	5.23%	90.12%	4.65%	22.06%	53.38%	24.56%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	11	144	97	58	82	5	3	81	2	29	84	44	640
PEAK HR FACTOR :		0.829			0.684			0.717			0.689		0.851

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : 4-Way Stop

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-002
N/S Street: Monterey Blvd
E/W Street: 2nd St
DATE: 3/20/2014 DAY: Thursday
CITY: Hermosa Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	1	0	0	0	0	0	0
7:15 AM	1	2	2	1	0	0	0	0
7:30 AM	4	5	0	6	1	0	0	0
7:45 AM	1	2	3	0	0	1	0	3
8:00 AM	0	2	5	0	0	0	0	0
8:15 AM	0	4	1	0	0	0	0	1
8:30 AM	2	1	0	0	0	0	1	2
8:45 AM	4	2	0	3	1	0	0	1
TOTALS	**12**	**19**	**11**	**10**	**2**	**1**	**1**	**7**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	1	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	1	0
7:30 AM	0	2	0	0	0	0	0	1	1	0	0	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:00 AM	0	0	0	0	0	0	1	1	0	0	1	0
8:15 AM	0	1	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
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0
TOTALS	**0**	**3**	**1**	**0**	**0**	**0**	**1**	**4**	**1**	**0**	**4**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	4	2	4	4	0	0	2	1
4:15 PM	2	2	3	4	0	1	0	0
4:30 PM	6	1	2	8	1	0	0	1
4:45 PM	4	0	1	2	0	0	0	1
5:00 PM	3	2	3	1	1	1	0	1
5:15 PM	0	1	2	8	1	0	1	0
5:30 PM	1	6	4	1	0	2	1	0
5:45 PM	4	5	4	4	0	0	0	2
TOTALS	**24**	**19**	**23**	**32**	**3**	**4**	**4**	**6**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	2	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	2	0
4:45 PM	0	0	1	0	0	0	0	1	0	0	0	0
5:00 PM	0	0	0	0	1	0	0	2	0	0	2	0
5:15 PM	0	0	0	0	0	0	0	1	1	0	2	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	1	0	0	0	0	0	0	0	0	2	0
TOTALS	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**6**	**1**	**0**	**11**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-001 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Hermosa Ave			Hermosa Ave			2nd St			2nd St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	0	1	0	0	1	0					
7:00 AM	20	58	11	8	31	0	0	0	2	4	0	4	138	6	2	0	0
7:15 AM	16	82	4	5	37	1	1	3	0	2	2	5	158	5	1	0	0
7:30 AM	7	95	11	12	29	1	1	1	3	5	1	2	168	2	3	0	0
7:45 AM	11	120	22	9	42	0	3	4	2	7	4	5	229	3	0	0	0
8:00 AM	5	140	23	42	39	2	1	3	2	5	2	7	271	1	10	0	0
8:15 AM	16	123	18	8	50	0	0	3	0	7	1	9	235	5	2	0	0
8:30 AM	19	99	12	12	49	0	2	2	1	6	1	5	208	6	2	0	0
8:45 AM	12	98	18	15	52	1	3	3	1	5	2	4	214	3	3	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	106	815	119	111	329	5	11	19	11	41	13	41	1621	31	23	0	0
APPROACH %'s :	10.19%	78.37%	11.44%	24.94%	73.93%	1.12%	26.83%	46.34%	26.83%	43.16%	13.68%	43.16%					

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	51	482	75	71	180	2	6	12	5	25	8	26	943
PEAK HR FACTOR :		0.905			0.762			0.639			0.868		0.870

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-001 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Hermosa Ave			Hermosa Ave			2nd St			2nd St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	0	1	0	0	1	0					
4:00 PM	7	71	8	5	66	1	3	2	1	6	1	4	175	2	0	0	0
4:15 PM	10	68	3	9	87	1	0	1	1	5	0	5	190	3	1	0	0
4:30 PM	8	66	9	7	82	0	0	1	3	6	3	4	189	1	0	0	0
4:45 PM	18	72	7	4	101	2	0	1	8	4	3	8	228	5	0	0	0
5:00 PM	10	83	6	10	86	3	1	2	1	11	2	8	223	2	1	0	0
5:15 PM	8	77	4	16	86	0	2	2	2	6	1	7	211	2	3	0	0
5:30 PM	13	61	11	8	90	0	1	0	0	5	3	7	199	4	1	0	0
5:45 PM	14	73	9	4	92	0	0	4	1	4	4	2	207	4	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	88	571	57	63	690	7	7	13	17	47	17	45	1622	23	6	0	0
APPROACH %'s :	12.29%	79.75%	7.96%	8.29%	90.79%	0.92%	18.92%	35.14%	45.95%	43.12%	15.60%	41.28%					

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	49	293	28	38	363	5	4	5	11	26	9	30	861
PEAK HR FACTOR :		0.934			0.949			0.556			0.774		0.944

CONTROL : 4-Way Stop

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-001_Peds & Bikes
N/S Street: Hermosa Ave
E/W Street: 2nd St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	0	4	1	1	0	0	1
7:15 AM	2	4	0	5	1	1	2	2
7:30 AM	4	5	1	3	0	1	1	1
7:45 AM	3	2	1	4	3	4	0	1
8:00 AM	2	4	0	2	3	3	0	1
8:15 AM	1	1	1	6	0	0	3	1
8:30 AM	4	0	1	3	0	3	3	6
8:45 AM	2	4	2	0	1	0	0	0
TOTALS	**19**	**20**	**10**	**24**	**9**	**12**	**9**	**13**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	3	0	1	2	0	0	1	0	0	1	0
7:15 AM	0	10	0	1	10	0	0	0	0	0	1	0
7:30 AM	0	1	0	0	4	0	4	1	0	0	0	0
7:45 AM	0	5	0	1	6	0	1	2	0	0	0	1
8:00 AM	0	2	0	0	2	0	0	2	3	0	0	0
8:15 AM	0	6	0	2	0	0	0	2	0	0	0	0
8:30 AM	0	4	0	1	1	1	0	2	0	0	1	0
8:45 AM	1	5	0	6	1	1	0	4	0	0	0	1
TOTALS	**1**	**36**	**0**	**12**	**26**	**2**	**5**	**14**	**3**	**0**	**3**	**2**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	6	7	1	3	5	2	5	0
4:15 PM	8	3	6	3	7	3	1	2
4:30 PM	2	2	3	1	0	2	2	5
4:45 PM	2	13	9	5	4	2	2	3
5:00 PM	4	1	14	6	1	0	1	2
5:15 PM	2	2	5	3	1	2	3	2
5:30 PM	2	6	5	2	5	5	0	1
5:45 PM	4	8	9	4	3	0	1	1
TOTALS	**30**	**42**	**52**	**27**	**26**	**16**	**15**	**16**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	6	1	1	1	0	0	2	0	0	1	0
4:15 PM	0	4	0	0	3	0	2	3	0	1	0	0
4:30 PM	0	2	0	1	3	0	0	3	0	0	1	0
4:45 PM	2	8	0	2	1	0	0	7	0	0	2	0
5:00 PM	2	4	0	5	4	0	0	11	0	0	3	0
5:15 PM	1	13	0	1	3	0	2	0	1	0	2	0
5:30 PM	1	6	0	0	8	2	1	7	0	0	2	0
5:45 PM	1	11	0	4	5	1	1	4	0	0	6	0
TOTALS	**7**	**54**	**1**	**14**	**28**	**3**	**6**	**37**	**1**	**1**	**17**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-003

Day: Thursday

City: Hermosa Beach

Date: 3/20/2014

AM

NS/EW Streets:	Valley Dr			Valley Dr			2nd St			2nd St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	0	1	0	0	1	0	
7:00 AM	0	0	0	2	10	1	9	13	11	2	9	7	64
7:15 AM	0	0	0	1	23	0	8	11	14	2	6	5	70
7:30 AM	0	0	0	2	30	1	18	22	20	3	12	5	113
7:45 AM	0	0	0	1	18	4	24	43	19	5	11	4	129
8:00 AM	0	0	0	6	35	4	23	25	19	4	9	8	133
8:15 AM	0	0	0	9	32	9	16	27	12	5	16	9	135
8:30 AM	0	0	0	1	38	7	19	26	12	1	12	4	120
8:45 AM	0	0	0	0	28	4	19	27	12	2	13	6	111
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	22	214	30	136	194	119	24	88	48	875
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	8.27%	80.45%	11.28%	30.29%	43.21%	26.50%	15.00%	55.00%	30.00%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	17	123	24	82	121	62	15	48	25	517
PEAK HR FACTOR :	0.000			0.820			0.770			0.733			0.957

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : 3-Way Stop SB/EB/WB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-003

Day: Thursday

City: Hermosa Beach

Date: 3/20/2014

PM

NS/EW Streets:	Valley Dr			Valley Dr			2nd St			2nd St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	0	1	0	0	1	0	
4:00 PM	0	0	0	6	63	7	10	17	19	7	21	6	156
4:15 PM	0	0	0	16	115	8	19	22	6	10	29	41	266
4:30 PM	0	0	0	18	107	8	15	24	21	6	49	35	283
4:45 PM	0	0	0	6	81	24	21	32	13	7	14	6	204
5:00 PM	0	0	0	6	88	14	15	22	14	13	29	9	210
5:15 PM	0	0	0	6	82	18	21	24	19	9	19	5	203
5:30 PM	0	0	0	7	78	16	23	21	21	11	25	11	213
5:45 PM	0	0	0	9	78	18	13	25	14	8	27	7	199
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	74	692	113	137	187	127	71	213	120	1734
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	8.42%	78.73%	12.86%	30.38%	41.46%	28.16%	17.57%	52.72%	29.70%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	46	391	54	70	100	54	36	121	91	963
PEAK HR FACTOR :	0.000			0.883			0.848			0.689			0.851

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : 3-Way Stop SB/EB/WB

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-003
N/S Street: Valley Dr
E/W Street: 2nd St
DATE: 3/20/2014 DAY: Thursday
CITY: Hermosa Beach

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	1	1	5	4	0	2
7:15 AM	0	1	2	2	5	1	0	0
7:30 AM	2	5	1	4	7	6	1	0
7:45 AM	1	3	4	0	3	4	1	2
8:00 AM	0	2	7	0	8	6	4	1
8:15 AM	0	4	2	2	18	2	0	0
8:30 AM	1	1	2	2	2	2	3	2
8:45 AM	2	1	0	7	3	2	5	0
TOTALS	**6**	**17**	**19**	**18**	**51**	**27**	**14**	**7**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	1	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	1	0
7:30 AM	0	1	0	2	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:00 AM	0	1	0	0	1	0	0	0	0	0	1	0
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	1	0	0	0	2	0	0	0	0	0	0	0
TOTALS	**1**	**2**	**0**	**2**	**4**	**0**	**1**	**2**	**0**	**0**	**2**	**0**

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	3	1	3	7	2	0	1	2
4:15 PM	3	2	7	5	9	2	1	1
4:30 PM	7	3	3	4	3	7	3	2
4:45 PM	1	3	2	2	6	7	2	1
5:00 PM	4	1	6	2	4	6	1	1
5:15 PM	2	1	1	4	4	3	2	3
5:30 PM	1	9	1	0	2	7	2	0
5:45 PM	0	4	8	2	10	3	0	0
TOTALS	**21**	**24**	**31**	**26**	**40**	**35**	**12**	**10**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	1	0	0	0	0	2	1	0
4:15 PM	0	1	0	0	0	0	0	1	0	0	1	0
4:30 PM	1	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0
5:00 PM	0	0	0	0	0	1	2	0	1	0	2	0
5:15 PM	0	0	0	0	3	0	0	0	1	0	1	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	1	0	0	0	0	0	0	0	0	1	0
TOTALS	**1**	**2**	**0**	**0**	**4**	**1**	**2**	**2**	**2**	**2**	**8**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-003 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Valley Dr			Valley Dr			2nd St			2nd St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	0	0	0	1	0	0	1	0	0	1	0					
7:00 AM	0	0	0	1	11	1	10	26	8	3	12	4	76				
7:15 AM	0	0	0	2	13	0	8	24	13	1	8	6	75				
7:30 AM	0	0	0	0	27	2	11	28	14	1	8	2	93				
7:45 AM	0	0	0	1	23	5	19	27	15	3	18	5	116				
8:00 AM	0	0	0	1	29	3	20	31	18	2	8	3	115				
8:15 AM	0	0	0	0	29	2	14	28	19	2	17	1	112				
8:30 AM	0	0	0	4	34	2	12	24	11	4	13	6	110				
8:45 AM	0	0	0	3	32	1	14	39	18	4	10	5	126				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	0	12	198	16	108	227	116	20	94	32	823	0	0	0	0
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	5.31%	87.61%	7.08%	23.95%	50.33%	25.72%	13.70%	64.38%	21.92%					
PEAK HR START TIME :	800 AM												TOTAL				
PEAK HR VOL :	0	0	0	8	124	8	60	122	66	12	48	15	463				
PEAK HR FACTOR :		0.000			0.875			0.873			0.815		0.919				

CONTROL : 3-Way Stop SB/EB/WB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-003 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Valley Dr			Valley Dr			2nd St			2nd St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	0	0	0	1	0	0	1	0	0	1	0					
4:00 PM	0	0	0	7	52	5	11	21	10	3	20	1	130				
4:15 PM	0	0	0	4	58	7	9	19	7	3	16	3	126				
4:30 PM	0	0	0	5	62	9	14	26	11	7	23	6	163				
4:45 PM	0	0	0	7	59	5	10	29	7	4	31	9	161				
5:00 PM	0	0	0	2	71	8	11	21	21	2	20	5	161				
5:15 PM	0	0	0	5	78	16	9	31	26	7	24	3	199				
5:30 PM	0	0	0	2	88	12	7	28	13	7	25	3	185				
5:45 PM	0	0	0	7	70	10	8	23	23	10	19	6	176				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	0	39	538	72	79	198	118	43	178	36	1301	0	0	0	0
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	6.01%	82.90%	11.09%	20.00%	50.13%	29.87%	16.73%	69.26%	14.01%					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	0	0	0	16	307	46	35	103	83	26	88	17	721				
PEAK HR FACTOR :		0.000			0.904			0.837			0.936		0.906				

CONTROL : 3-Way Stop SB/EB/WB

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-003_Peds & Bikes
N/S Street: Valley Dr
E/W Street: 2nd St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	5	1	3	3	6	5	4	1
7:15 AM	3	4	2	2	10	9	1	2
7:30 AM	0	0	4	2	0	1	1	1
7:45 AM	0	1	1	1	4	4	3	1
8:00 AM	2	2	3	2	15	15	1	4
8:15 AM	2	0	0	3	5	5	1	1
8:30 AM	1	6	0	0	8	7	1	0
8:45 AM	1	2	4	1	3	6	2	2
TOTALS	**14**	**16**	**17**	**14**	**51**	**52**	**14**	**12**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	2	0	0	1	0	0	0	1
7:15 AM	0	0	0	0	0	0	1	0	0	0	0	0
7:30 AM	0	0	0	0	0	1	0	0	0	0	0	0
7:45 AM	1	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	1	1	0	0	1	1	0	0	0	0	1	0
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0	1	0	1	1
8:45 AM	0	0	0	0	2	0	0	1	0	0	2	0
TOTALS	**2**	**3**	**0**	**0**	**5**	**2**	**1**	**2**	**1**	**0**	**4**	**2**

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	3	2	3	1	0	2	1
4:15 PM	2	2	2	4	14	1	1	3
4:30 PM	3	3	2	0	3	1	1	2
4:45 PM	1	5	5	4	2	0	1	1
5:00 PM	7	2	4	2	4	2	3	5
5:15 PM	2	4	3	0	4	3	0	0
5:30 PM	6	2	5	0	7	4	0	3
5:45 PM	5	6	4	4	8	6	1	5
TOTALS	**26**	**27**	**27**	**17**	**43**	**17**	**9**	**20**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	1	0	0	0	1	0	1	0
4:15 PM	0	0	0	0	4	0	0	0	0	0	5	0
4:30 PM	0	0	0	0	1	0	0	0	0	1	0	0
4:45 PM	0	0	0	0	1	0	1	2	0	0	3	0
5:00 PM	0	1	0	0	0	1	1	5	0	0	6	0
5:15 PM	0	0	0	0	1	0	0	2	0	1	2	0
5:30 PM	0	4	0	0	1	1	0	4	1	0	6	0
5:45 PM	0	0	0	0	0	0	0	4	2	0	4	0
TOTALS	**0**	**5**	**0**	**0**	**9**	**2**	**2**	**17**	**4**	**2**	**27**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-004

Day: Thursday

City: Hermosa Beach

Date: 3/20/2014

AM

NS/EW Streets:	Harbor Dr/Hermosa Ave			Harbor Dr/Hermosa Ave			Herondo St			Herondo St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	1	1	0	0	0	0	2	0	1					
7:00 AM	0	30	20	12	16	0	0	0	0	18	1	25	122	0	0	0	1
7:15 AM	0	36	18	9	11	0	0	0	0	22	0	42	138	0	0	0	1
7:30 AM	0	81	19	13	19	0	0	0	0	8	0	49	189	0	0	0	1
7:45 AM	0	83	13	22	21	0	1	0	0	22	0	84	246	0	1	0	0
8:00 AM	0	94	13	20	22	0	0	0	0	15	0	81	245	0	4	0	0
8:15 AM	0	76	26	22	36	0	0	0	0	20	0	60	240	0	0	0	0
8:30 AM	0	51	13	22	24	0	0	0	0	22	0	61	193	0	0	0	2
8:45 AM	0	64	16	20	26	0	0	0	0	18	0	47	191	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	515	138	140	175	0	1	0	0	145	1	449	1564	0	5	0	5
APPROACH %'s :	0.00%	78.87%	21.13%	44.44%	55.56%	0.00%	100.00%	0.00%	0.00%	24.37%	0.17%	75.46%					

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	304	65	86	103	0	1	0	0	79	0	286	924
PEAK HR FACTOR :		0.862			0.815			0.250			0.861		0.939

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-004

Day: Thursday

City: Hermosa Beach

Date: 3/20/2014

PM

NS/EW Streets:	Harbor Dr/Hermosa Ave			Harbor Dr/Hermosa Ave			Herondo St			Herondo St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	1	1	0	0	0	0	2	0	1					
4:00 PM	0	32	30	39	63	0	0	0	0	26	1	24	215	0	0	0	0
4:15 PM	0	34	21	21	65	0	0	0	0	30	0	42	213	0	1	0	0
4:30 PM	0	34	40	24	106	0	0	0	0	26	0	45	275	0	0	0	1
4:45 PM	1	57	28	40	89	0	0	0	0	42	0	44	301	1	0	0	1
5:00 PM	0	40	29	29	76	0	0	0	0	48	0	38	260	0	2	0	0
5:15 PM	0	41	29	41	86	0	0	0	0	44	0	39	280	0	1	0	0
5:30 PM	0	38	28	49	86	0	0	0	0	42	0	42	285	0	1	0	1
5:45 PM	0	48	20	33	68	0	0	0	0	48	0	55	272	0	1	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	1	324	225	276	639	0	0	0	0	306	1	329	2101	1	6	0	3
APPROACH %'s :	0.18%	58.91%	40.91%	30.16%	69.84%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	48.11%	0.16%	51.73%					
PEAK HR START TIME :	445 PM												TOTAL				
PEAK HR VOL :	1	176	114	159	337	0	0	0	0	176	0	163	1126				
PEAK HR FACTOR :		0.846			0.919			0.000			0.985		0.935				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-004
N/S Street: Harbor Dr/Hermosa Ave
E/W Street: Herondo St
DATE: 3/20/2014 DAY: Thursday
CITY: Hermosa Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	2	0	3	0	1	4	2
7:15 AM	0	0	3	0	1	0	3	0
7:30 AM	0	3	1	1	0	0	2	1
7:45 AM	1	0	0	0	1	1	2	2
8:00 AM	0	0	2	1	0	1	4	2
8:15 AM	1	2	0	3	0	2	0	0
8:30 AM	2	1	0	0	0	0	1	1
8:45 AM	2	0	3	1	2	1	1	0
TOTALS	**7**	**8**	**9**	**9**	**4**	**6**	**17**	**8**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	5	4	0	0	2	0	0	0	1	1	2	0
7:15 AM	7	3	0	0	0	0	2	0	12	0	1	0
7:30 AM	6	10	1	0	5	0	0	0	6	0	1	1
7:45 AM	4	6	0	0	4	0	0	0	4	0	0	0
8:00 AM	10	6	1	0	5	0	0	0	8	0	0	1
8:15 AM	7	2	1	2	3	0	0	3	17	0	1	0
8:30 AM	5	4	0	0	2	0	0	0	11	0	1	1
8:45 AM	21	7	1	0	4	0	0	0	5	1	4	0
TOTALS	**65**	**42**	**4**	**2**	**25**	**0**	**2**	**3**	**64**	**2**	**10**	**3**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	0	1	6	0	1	1	5
4:15 PM	2	3	8	3	1	0	3	2
4:30 PM	8	2	0	3	0	1	2	0
4:45 PM	0	1	3	2	0	1	5	1
5:00 PM	3	2	3	4	2	5	2	2
5:15 PM	1	3	6	4	1	2	1	2
5:30 PM	3	2	9	5	2	1	2	4
5:45 PM	4	4	0	3	3	1	4	2
TOTALS	**22**	**17**	**30**	**30**	**9**	**12**	**20**	**18**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	15	1	0	1	6	0	0	0	10	1	0	2
4:15 PM	17	7	0	0	2	0	0	0	14	2	3	0
4:30 PM	7	4	1	1	1	0	0	1	25	1	1	0
4:45 PM	5	4	0	0	3	0	0	4	16	0	1	0
5:00 PM	10	4	0	0	6	0	0	1	13	1	4	0
5:15 PM	12	8	0	1	13	0	0	1	14	4	1	0
5:30 PM	9	1	0	0	6	0	0	0	16	0	0	1
5:45 PM	7	7	0	0	12	0	0	6	12	4	4	0
TOTALS	**82**	**36**	**1**	**3**	**49**	**0**	**0**	**13**	**120**	**13**	**14**	**3**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-004 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Harbor Dr/Hermosa Ave			Harbor Dr/Hermosa Ave			Herondo St			Herondo St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	1	1	0	0	0	0	2	0	1					
7:00 AM	0	42	20	16	18	0	0	0	0	14	0	35	145				
7:15 AM	0	50	22	20	24	0	0	0	0	17	0	38	171				
7:30 AM	0	73	22	17	20	0	0	0	0	20	0	47	199				
7:45 AM	0	78	18	23	26	0	0	0	0	18	0	74	237				
8:00 AM	0	89	13	30	20	0	1	0	0	20	0	78	251				
8:15 AM	0	64	21	33	39	0	0	0	0	25	0	68	250				
8:30 AM	0	51	10	31	31	0	0	0	0	27	0	63	213				
8:45 AM	0	64	21	23	37	0	0	0	0	27	0	67	239				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	511	147	193	215	0	1	0	0	168	0	470	1705	0	0	0	0
APPROACH %'s :	0.00%	77.66%	22.34%	47.30%	52.70%	0.00%	100.00%	0.00%	0.00%	26.33%	0.00%	73.67%					
PEAK HR START TIME :	800 AM												TOTAL				
PEAK HR VOL :	0	268	65	117	127	0	1	0	0	99	0	276	953				
PEAK HR FACTOR :		0.816			0.847			0.250			0.957		0.949				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-004 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Harbor Dr/Hermosa Ave			Harbor Dr/Hermosa Ave			Herondo St			Herondo St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	1	0	0	0	0	2	0	1	
4:00 PM	0	54	38	23	48	0	0	0	0	28	0	29	220
4:15 PM	0	52	29	26	67	0	1	0	0	20	0	28	223
4:30 PM	0	42	29	32	63	0	0	0	0	35	0	33	234
4:45 PM	0	59	17	39	72	0	0	0	0	35	0	33	255
5:00 PM	0	59	23	21	63	0	0	0	0	33	0	36	235
5:15 PM	0	52	33	27	73	0	0	0	0	33	0	32	250
5:30 PM	0	46	18	29	65	0	0	0	0	58	0	36	252
5:45 PM	0	52	24	26	73	0	0	0	0	42	0	42	259
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	416	211	223	524	0	1	0	0	284	0	269	1928
APPROACH %'s :	0.00%	66.35%	33.65%	29.85%	70.15%	0.00%	100.00%	0.00%	0.00%	51.36%	0.00%	48.64%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	209	98	103	274	0	0	0	0	166	0	146	996
PEAK HR FACTOR :		0.903			0.943			0.000			0.830		0.961

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-004_Peds & Bikes
N/S Street: Harbor Dr/Hermosa Ave
E/W Street: Herondo St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	1	19	24	2	2	1	1
7:15 AM	1	1	6	0	0	1	0	0
7:30 AM	2	1	0	1	0	0	1	1
7:45 AM	0	1	3	1	2	0	0	0
8:00 AM	1	0	2	4	3	1	1	0
8:15 AM	4	0	1	3	2	1	1	0
8:30 AM	0	3	0	3	1	2	2	
8:45 AM	1	0	5	5	1	1	0	2
TOTALS	**11**	**7**	**36**	**41**	**11**	**8**	**6**	**4**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	2	1	0	2	0	0	2	0	0	0	0
7:15 AM	0	10	0	0	9	0	0	0	0	0	5	0
7:30 AM	0	7	0	0	2	0	0	0	0	0	2	0
7:45 AM	0	5	0	0	4	0	0	0	0	1	1	0
8:00 AM	4	1	1	1	0	0	0	2	0	0	0	0
8:15 AM	0	2	0	0	3	0	0	0	0	0	1	0
8:30 AM	0	1	0	0	2	0	0	2	0	0	1	0
8:45 AM	1	3	0	0	5	0	0	0	0	0	1	0
TOTALS	**5**	**31**	**2**	**1**	**27**	**0**	**0**	**6**	**0**	**1**	**11**	**0**

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	2	4	1	5	0	0	4
4:15 PM	0	1	1	4	0	0	0	1
4:30 PM	0	2	0	3	0	0	0	2
4:45 PM	0	1	0	1	0	6	0	0
5:00 PM	3	2	3	1	1	6	0	0
5:15 PM	4	1	2	6	5	6	3	0
5:30 PM	3	2	2	0	1	3	0	0
5:45 PM	2	3	1	5	2	1	0	0
TOTALS	**12**	**14**	**13**	**21**	**14**	**22**	**3**	**7**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	3	2	0	0	1	0	2	5	0	0	3	0
4:15 PM	2	2	1	0	3	0	0	3	0	0	6	1
4:30 PM	3	3	0	0	1	0	0	4	0	0	1	0
4:45 PM	5	3	0	0	1	2	0	0	0	1	1	0
5:00 PM	0	9	3	0	3	0	0	3	0	0	1	0
5:15 PM	6	6	0	1	0	0	0	1	0	0	5	0
5:30 PM	8	10	1	0	0	1	0	1	0	0	3	0
5:45 PM	3	3	2	1	3	1	0	2	0	2	0	0
TOTALS	**30**	**38**	**7**	**2**	**12**	**4**	**2**	**19**	**0**	**3**	**20**	**1**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-005 **Day:** Thursday

City: Hermosa Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Monterey Blvd			Monterey Blvd			Herondo St			Herondo St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	0	0	0	1	0	1	2	0	0	2	0					
7:00 AM	0	0	0	12	0	2	1	30	0	4	47	11	107	0	0	1	4
7:15 AM	0	0	0	26	0	1	0	27	0	0	57	5	116	0	0	0	0
7:30 AM	0	0	0	24	0	0	1	31	0	3	63	6	128	0	0	0	3
7:45 AM	0	0	0	27	0	2	2	34	0	3	94	6	168	0	0	1	3
8:00 AM	0	0	0	17	0	0	0	29	0	2	92	11	151	0	0	0	2
8:15 AM	0	0	0	29	0	1	2	43	0	0	80	8	163	0	0	0	0
8:30 AM	0	0	0	17	0	0	1	39	0	1	77	11	146	0	0	1	1
8:45 AM	0	0	0	30	0	1	1	35	0	2	65	21	155	0	0	1	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	0	182	0	7	8	268	0	15	575	79	1134	0	0	4	15
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	96.30%	0.00%	3.70%	2.90%	97.10%	0.00%	2.24%	85.95%	11.81%					

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	90	0	3	5	145	0	6	343	36	628
PEAK HR FACTOR :		0.000			0.775			0.833			0.917		0.935

CONTROL : 1-Way Stop SB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-005 **Day:** Thursday

City: Hermosa Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Monterey Blvd			Monterey Blvd			Herondo St			Herondo St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	0	0	0	1	0	1	2	0	0	2	0					
4:00 PM	0	0	0	16	0	1	4	65	0	0	59	60	205	0	0	0	0
4:15 PM	0	0	0	16	0	3	4	37	0	2	61	51	174	0	0	0	2
4:30 PM	0	0	0	35	0	7	3	63	0	3	66	51	228	0	0	0	3
4:45 PM	0	0	0	20	0	5	2	67	0	1	87	62	244	0	0	0	1
5:00 PM	0	0	0	23	0	2	5	50	0	1	82	67	230	0	0	0	1
5:15 PM	0	0	0	18	0	2	10	59	0	1	84	74	248	0	0	0	1
5:30 PM	0	0	0	17	0	4	4	69	0	1	80	80	255	0	0	0	1
5:45 PM	0	0	0	24	0	2	4	44	0	1	98	56	229	0	0	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	0	169	0	26	36	454	0	10	617	501	1813	0	0	0	10
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	86.67%	0.00%	13.33%	7.35%	92.65%	0.00%	0.89%	54.70%	44.41%					

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	0	0	78	0	13	21	245	0	4	333	283	977
PEAK HR FACTOR :		0.000			0.910			0.911			0.963		0.958

CONTROL : 1-Way Stop SB

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-005
N/S Street: Monterey Blvd
E/W Street: Herondo St
DATE: 3/20/2014 DAY: Thursday
CITY: Hermosa Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	2	0	0	0	0	0	0
7:15 AM	3	1	0	0	0	0	0	0
7:30 AM	3	5	0	0	0	0	0	0
7:45 AM	0	3	0	0	0	0	0	0
8:00 AM	0	3	0	0	0	0	0	0
8:15 AM	0	2	0	0	1	0	0	0
8:30 AM	1	1	0	0	1	0	0	0
8:45 AM	3	2	0	0	0	0	0	0
TOTALS	**11**	**19**	**0**	**0**	**2**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	4	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	1	0	0	2	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	1	0	0	1	0
8:15 AM	0	0	0	0	0	0	1	6	0	0	2	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	3	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	5	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**9**	**0**	**0**	**18**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	0	0	0	0	0	0	0
4:15 PM	2	5	0	0	0	0	0	0
4:30 PM	3	2	0	0	0	0	0	0
4:45 PM	2	4	0	0	0	0	0	0
5:00 PM	3	6	0	0	1	0	0	0
5:15 PM	3	5	0	0	0	0	0	0
5:30 PM	5	7	0	0	0	2	0	0
5:45 PM	6	5	0	0	0	0	0	0
TOTALS	**25**	**34**	**0**	**0**	**1**	**2**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	2	0	0	3	0
4:15 PM	0	0	0	2	0	0	0	0	0	0	3	1
4:30 PM	0	0	0	0	0	0	0	2	0	0	2	0
4:45 PM	0	0	0	0	0	0	0	6	0	0	1	0
5:00 PM	0	0	0	0	0	1	1	0	0	0	2	0
5:15 PM	0	0	0	0	0	0	0	2	0	0	3	0
5:30 PM	0	0	0	0	0	0	0	2	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	6	0	0	3	1
TOTALS	**0**	**0**	**0**	**2**	**0**	**1**	**1**	**20**	**0**	**0**	**17**	**2**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-005 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Monterey Blvd			Monterey Blvd			Herondo St			Herondo St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	0	0	0	1	0	1	2	0	0	2	0					
7:00 AM	0	0	0	10	0	1	0	36	0	9	48	11	115	0	0	0	3
7:15 AM	0	0	0	23	0	1	3	39	0	3	55	4	128	0	0	1	1
7:30 AM	0	0	0	27	0	2	1	38	0	12	64	7	151	0	0	0	4
7:45 AM	0	0	0	19	0	2	1	41	0	0	90	10	163	0	0	0	0
8:00 AM	0	0	0	18	0	2	2	40	0	3	96	14	175	0	0	0	4
8:15 AM	0	0	0	23	0	5	13	41	0	6	88	6	182	0	0	4	2
8:30 AM	0	0	0	18	0	6	6	36	0	3	85	11	165	0	0	2	1
8:45 AM	0	0	0	9	0	2	1	43	0	9	92	23	179	0	0	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	0	147	0	21	27	314	0	45	618	86	1258	0	0	7	18
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	87.50%	0.00%	12.50%	7.92%	92.08%	0.00%	6.01%	82.51%	11.48%					

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	0	0	68	0	15	22	160	0	21	361	54	701
PEAK HR FACTOR :		0.000			0.741			0.843			0.879		0.963

CONTROL : 1-Way Stop SB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-005 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Monterey Blvd			Monterey Blvd			Herondo St			Herondo St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	0	0	0	1	0	1	2	0	0	2	0					
4:00 PM	0	0	0	16	0	2	8	53	0	3	55	55	192	0	0	1	1
4:15 PM	0	0	0	25	0	3	6	49	0	9	45	44	181	0	0	1	3
4:30 PM	0	0	0	23	0	5	8	53	0	18	63	54	224	0	0	0	6
4:45 PM	0	0	0	15	0	2	4	51	0	15	67	44	198	0	0	0	5
5:00 PM	0	0	0	20	0	6	4	41	0	0	62	57	190	0	0	1	0
5:15 PM	0	0	0	30	0	0	7	53	0	0	66	53	209	0	0	1	0
5:30 PM	0	0	0	19	0	6	2	44	0	15	88	61	235	0	0	0	5
5:45 PM	0	0	0	19	0	5	4	46	0	9	78	65	226	0	0	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	0	167	0	29	43	390	0	69	524	433	1655	0	0	4	23
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	85.20%	0.00%	14.80%	9.93%	90.07%	0.00%	6.73%	51.07%	42.20%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	88	0	17	17	184	0	24	294	236	860
PEAK HR FACTOR :		0.000			0.875			0.838			0.845		0.915

CONTROL : 1-Way Stop SB

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-005_Peds & Bikes
N/S Street: Monterey Blvd
E/W Street: Herondo St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	3	5	0	0	0	0	0	0
7:15 AM	1	1	0	0	0	0	0	0
7:30 AM	4	2	0	0	0	0	0	0
7:45 AM	3	1	0	0	0	0	1	0
8:00 AM	4	7	0	0	0	0	0	0
8:15 AM	0	2	0	0	0	0	0	0
8:30 AM	2	5	0	0	0	0	1	0
8:45 AM	1	3	0	0	0	0	0	0
TOTALS	**18**	**26**	**0**	**0**	**0**	**0**	**2**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	2	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	2	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	0
8:00 AM	0	0	0	0	0	0	1	1	0	0	1	3
8:15 AM	0	0	0	0	0	0	1	0	0	0	4	0
8:30 AM	0	0	0	0	0	0	0	2	0	0	2	0
8:45 AM	0	0	0	1	0	0	1	1	0	0	3	0
TOTALS	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**6**	**0**	**0**	**16**	**6**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	0	0	0	0	0	1	0
4:15 PM	0	1	0	0	0	0	0	0
4:30 PM	0	5	0	0	0	0	0	0
4:45 PM	4	5	0	0	0	0	0	0
5:00 PM	2	2	0	0	1	0	0	0
5:15 PM	4	8	0	0	1	2	0	0
5:30 PM	3	8	0	0	0	0	0	0
5:45 PM	4	5	0	0	0	0	0	0
TOTALS	**18**	**34**	**0**	**0**	**2**	**2**	**1**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	1	0	0	0	5	0	0	2	1
4:15 PM	0	0	0	0	0	0	1	3	0	0	6	0
4:30 PM	0	0	0	0	0	0	0	4	0	0	4	0
4:45 PM	0	0	0	0	0	0	1	0	0	0	6	2
5:00 PM	0	0	0	0	0	0	1	2	0	1	4	0
5:15 PM	0	0	0	0	0	0	0	4	0	0	6	0
5:30 PM	0	0	0	0	0	0	0	2	0	0	7	1
5:45 PM	0	0	0	1	0	0	0	4	0	0	6	0
TOTALS	**0**	**0**	**0**	**2**	**0**	**0**	**3**	**24**	**0**	**1**	**41**	**4**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-006 **Day:** Thursday

City: Hermosa Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Valley Dr/Francisca Ave			Valley Dr/Francisca Ave			Herondo St			Herondo St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	1	1	1	0	2	0	1	2	0					
7:00 AM	27	0	3	21	6	1	0	41	3	9	32	0	143	0	0	0	5
7:15 AM	29	0	6	33	12	1	0	44	11	3	36	0	175	0	0	0	1
7:30 AM	32	0	15	43	24	1	0	49	6	5	34	0	209	0	0	0	0
7:45 AM	53	0	29	29	20	1	0	53	13	4	55	0	257	0	0	0	1
8:00 AM	46	0	30	40	19	3	0	41	8	7	59	0	253	0	0	0	2
8:15 AM	29	0	16	36	21	2	0	57	12	5	59	0	237	0	0	0	3
8:30 AM	32	0	9	30	21	2	0	51	7	4	52	0	208	0	0	0	1
8:45 AM	30	0	7	35	13	3	0	50	19	2	48	0	207	0	0	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	278	0	115	267	136	14	0	386	79	39	375	0	1689	0	0	0	14
APPROACH %'s :	70.74%	0.00%	29.26%	64.03%	32.61%	3.36%	0.00%	83.01%	16.99%	9.42%	90.58%	0.00%					

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	160	0	90	148	84	7	0	200	39	21	207	0	956
PEAK HR FACTOR :		0.762			0.879			0.866			0.864		0.930

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-006 **Day:** Thursday

City: Hermosa Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Valley Dr/Francisca Ave			Valley Dr/Francisca Ave			Herondo St			Herondo St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	1	1	1	0	2	0	1	2	0					
4:00 PM	34	0	9	30	46	12	0	68	15	3	77	0	294	0	0	0	1
4:15 PM	23	0	8	53	67	12	0	45	10	3	79	0	300	0	0	0	1
4:30 PM	33	0	14	54	70	7	0	77	26	6	84	0	371	0	0	0	3
4:45 PM	39	0	6	33	63	15	0	71	18	5	105	0	355	0	0	0	2
5:00 PM	48	0	15	31	58	13	0	57	16	8	92	0	338	0	0	0	3
5:15 PM	59	0	10	36	67	10	0	59	18	16	96	0	371	0	0	0	8
5:30 PM	61	0	12	38	70	6	0	65	17	5	97	0	371	0	0	0	1
5:45 PM	39	0	8	44	54	7	0	59	13	7	117	0	348	0	0	0	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	336	0	82	319	495	82	0	501	133	53	747	0	2748	0	0	0	24
APPROACH %'s :	80.38%	0.00%	19.62%	35.60%	55.25%	9.15%	0.00%	79.02%	20.98%	6.63%	93.38%	0.00%					

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	207	0	43	138	258	44	0	252	69	34	390	0	1435
PEAK HR FACTOR :		0.856			0.965			0.902			0.946		0.967

CONTROL : 4-Way Stop

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-006
N/S Street: Valley Dr/Francisca Ave
E/W Street: Herondo St
DATE: 3/20/2014 DAY: Thursday
CITY: Hermosa Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	1	0	1	0	1	3	3
7:15 AM	0	0	2	0	1	0	3	2
7:30 AM	0	0	0	1	0	1	1	0
7:45 AM	0	0	0	1	0	1	2	4
8:00 AM	0	0	1	1	1	1	2	2
8:15 AM	1	15	2	0	1	0	1	1
8:30 AM	0	0	0	1	0	1	0	0
8:45 AM	0	0	0	3	1	2	3	2
TOTALS	**1**	**16**	**5**	**8**	**4**	**7**	**15**	**14**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	4	0	0	0	0	0	0	0
7:15 AM	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
7:45 AM	0	0	0	1	0	0	0	0	0	0	0	3
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0
8:15 AM	0	3	2	0	2	0	0	2	0	0	0	2
8:30 AM	0	0	0	0	2	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	4	0	0	1	0	0	0	0
TOTALS	**0**	**4**	**2**	**1**	**12**	**0**	**0**	**3**	**0**	**1**	**0**	**5**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	1	2	6	0	2
4:15 PM	0	0	0	3	1	1	4	1
4:30 PM	1	0	1	2	2	4	2	0
4:45 PM	0	0	1	1	1	3	0	1
5:00 PM	0	0	0	1	1	1	1	5
5:15 PM	0	0	0	0	0	1	3	4
5:30 PM	0	0	1	0	5	5	3	2
5:45 PM	0	0	0	1	1	0	3	5
TOTALS	**16**	**20**	**13**	**21**	**0**	**1**	**9**	**3**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	1	0	1	0	0	1	0	2	0	0
4:15 PM	0	0	2	0	1	1	0	0	0	2	1	0
4:30 PM	0	2	0	0	2	0	0	0	0	0	0	0
4:45 PM	0	5	0	0	0	0	0	0	0	1	0	0
5:00 PM	0	0	0	0	4	0	1	0	0	0	0	0
5:15 PM	0	1	1	0	1	0	0	1	0	0	0	0
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	4	1	0	0	0	1	0	0	2	0	0
TOTALS	**7**	**1**	**0**	**2**	**2**	**0**	**0**	**14**	**5**	**0**	**9**	**1**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-006 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Valley Dr/Francisca Ave			Valley Dr/Francisca Ave			Herondo St			Herondo St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	0	2	1	0	2	0	1	2	0					
7:00 AM	22	0	10	19	8	2	0	48	2	19	43	0	173	0	0	0	5
7:15 AM	21	0	9	12	14	3	0	53	11	5	38	0	166	0	0	0	1
7:30 AM	30	0	20	27	22	3	0	58	10	3	50	0	223	0	0	0	0
7:45 AM	47	0	23	38	11	4	0	50	10	4	50	0	237	0	0	0	1
8:00 AM	49	0	20	37	15	6	3	44	14	4	58	0	250	0	0	3	1
8:15 AM	33	0	14	34	15	9	6	46	14	13	59	0	243	0	0	2	2
8:30 AM	31	0	14	36	21	5	0	45	9	17	63	0	241	0	0	0	4
8:45 AM	50	0	11	30	25	2	0	46	8	13	71	0	256	0	0	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	283	0	121	233	131	34	9	390	78	78	432	0	1789	0	0	5	15
APPROACH %'s :	70.05%	0.00%	29.95%	58.54%	32.91%	8.54%	1.89%	81.76%	16.35%	15.29%	84.71%	0.00%					

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	163	0	59	137	76	22	9	181	45	47	251	0	990
PEAK HR FACTOR :		0.804			0.948			0.890			0.887		0.967

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-006 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Valley Dr/Francisca Ave			Valley Dr/Francisca Ave			Herondo St			Herondo St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	0	2	1	0	2	0	1	2	0					
4:00 PM	35	0	7	27	34	8	3	62	5	13	70	0	264	0	0	1	3
4:15 PM	29	0	8	23	42	3	0	61	16	14	66	0	262	0	0	0	3
4:30 PM	39	0	4	28	41	8	1	66	15	6	88	0	296	0	0	0	1
4:45 PM	26	0	9	25	44	12	3	55	14	27	87	0	302	0	0	1	7
5:00 PM	35	0	6	30	59	2	0	50	11	30	83	0	306	0	0	0	8
5:15 PM	37	0	4	38	69	6	0	63	21	3	75	0	316	0	0	0	0
5:30 PM	41	0	7	35	58	13	0	50	18	17	110	0	349	0	0	0	4
5:45 PM	33	0	5	30	63	12	0	52	16	29	107	0	347	0	0	0	8
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	275	0	50	236	410	64	7	459	116	139	686	0	2442	0	0	2	34
APPROACH %'s :	84.62%	0.00%	15.38%	33.24%	57.75%	9.01%	1.20%	78.87%	19.93%	16.85%	83.15%	0.00%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	146	0	22	133	249	33	0	215	66	79	375	0	1318
PEAK HR FACTOR :		0.875			0.918			0.836			0.835		0.944

CONTROL : 4-Way Stop

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-006_Peds & Bikes
N/S Street: Valley Dr/Francisca Ave
E/W Street: Herondo St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	1	14	7	0	0	1	0
7:15 AM	0	1	9	2	0	0	2	1
7:30 AM	3	0	0	1	0	0	2	0
7:45 AM	0	2	0	2	0	0	0	0
8:00 AM	3	5	1	4	0	0	2	1
8:15 AM	1	2	3	2	0	0	2	1
8:30 AM	3	4	1	3	0	0	0	0
8:45 AM	3	3	2	1	1	1	3	0
TOTALS	**15**	**18**	**30**	**22**	**1**	**1**	**12**	**3**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	1	0	0	1	2	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0
7:45 AM	1	0	0	0	0	0	0	0	0	0	1	0
8:00 AM	3	0	2	0	0	0	0	0	1	0	0	0
8:15 AM	4	0	0	0	0	0	0	0	0	0	2	0
8:30 AM	2	0	2	0	0	0	1	1	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	1	1	0	1	0
TOTALS	**10**	**0**	**4**	**0**	**2**	**0**	**1**	**3**	**4**	**0**	**7**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	2	0	2	0	0	1	1
4:15 PM	1	1	0	2	0	0	0	2
4:30 PM	1	4	0	2	0	0	2	0
4:45 PM	4	5	1	0	0	0	0	0
5:00 PM	1	0	3	5	0	0	2	0
5:15 PM	0	7	1	0	0	0	0	0
5:30 PM	0	4	3	1	1	0	1	2
5:45 PM	8	1	8	9	0	0	5	4
TOTALS	**16**	**24**	**16**	**21**	**1**	**0**	**11**	**9**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	2	0	0	0	1	0	0	2	4	0	2	0
4:15 PM	1	0	0	0	3	0	0	2	1	0	4	0
4:30 PM	1	0	0	0	0	1	1	4	0	0	3	0
4:45 PM	1	0	0	0	2	0	0	0	0	0	3	0
5:00 PM	2	0	0	0	0	0	0	0	1	0	6	0
5:15 PM	3	0	0	0	2	0	1	2	0	0	0	0
5:30 PM	9	0	0	0	2	0	0	1	1	0	3	0
5:45 PM	3	0	0	0	0	0	0	4	1	0	2	0
TOTALS	**22**	**0**	**0**	**0**	**10**	**1**	**2**	**15**	**8**	**0**	**23**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-007 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Pacific Coast Hwy/Catalina Ave			Pacific Coast Hwy/Catalina Ave			Herondo St/Anita St			Herondo St/Anita St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	1	1	2	1	1	2	1	2	1	1					
7:00 AM	3	531	16	26	153	10	15	36	13	15	28	80	926				
7:15 AM	4	544	32	24	203	5	18	54	18	25	40	104	1071				
7:30 AM	3	567	23	27	285	7	19	53	15	30	27	105	1161				
7:45 AM	3	509	30	35	225	10	39	56	17	41	49	133	1147				
8:00 AM	4	455	35	51	203	5	35	77	13	42	58	113	1091				
8:15 AM	6	461	27	40	220	12	27	57	15	36	38	107	1046				
8:30 AM	11	509	32	30	202	11	17	44	13	30	39	78	1016				
8:45 AM	7	485	30	29	239	17	22	49	16	44	38	89	1065				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	41	4061	225	262	1730	77	192	426	120	263	317	809	8523	0	0	0	0
APPROACH %'s :	0.95%	93.85%	5.20%	12.66%	83.62%	3.72%	26.02%	57.72%	16.26%	18.93%	22.82%	58.24%					

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	14	2075	120	137	916	27	111	240	63	138	174	455	4470
PEAK HR FACTOR :		0.931			0.846			0.828			0.860		0.963

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-007 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Pacific Coast Hwy/Catalina Ave			Pacific Coast Hwy/Catalina Ave			Herondo St/Anita St			Herondo St/Anita St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	1	1	2	1	1	2	1	2	1	1	
4:00 PM	15	321	50	51	355	16	14	69	13	33	50	59	1046
4:15 PM	17	323	55	32	84	11	16	54	27	44	54	49	766
4:30 PM	20	298	63	45	270	16	16	87	39	66	67	56	1043
4:45 PM	31	286	65	56	427	16	12	76	18	42	71	63	1163
5:00 PM	19	363	59	61	465	29	16	53	26	32	56	61	1240
5:15 PM	14	361	57	49	445	25	18	70	20	36	68	69	1232
5:30 PM	20	345	52	58	473	21	23	74	19	43	63	68	1259
5:45 PM	25	322	48	46	453	13	18	64	21	32	91	68	1201
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	161	2619	449	398	2972	147	133	547	183	328	520	493	8950
APPROACH %'s :	4.99%	81.11%	13.91%	11.32%	84.50%	4.18%	15.41%	63.38%	21.21%	24.46%	38.78%	36.76%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	78	1391	216	214	1836	88	75	261	86	143	278	266	4932
PEAK HR FACTOR :		0.955			0.963			0.909			0.899		0.979

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-007
N/S Street: Pacific Coast Hwy/Catalina Ave
E/W Street: Herondo St/Anita St
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	1	0	0	1	0	2	1
7:15 AM	0	1	0	0	0	0	0	0
7:30 AM	2	0	0	0	1	0	0	1
7:45 AM	0	1	0	0	1	0	0	1
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	4	1	0	0	1	0	3	1
8:30 AM	1	0	0	0	0	1	0	1
8:45 AM	1	2	0	0	3	1	1	0
TOTALS	**10**	**6**	**0**	**0**	**7**	**2**	**6**	**5**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	1	0	0	0	0	0	2	0
7:15 AM	0	0	0	0	2	0	0	0	0	0	0	0
7:30 AM	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
8:00 AM	0	0	0	0	0	1	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	0	1	0	1	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	2	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	1
TOTALS	**0**	**1**	**0**	**0**	**3**	**1**	**0**	**1**	**0**	**1**	**5**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	1	0	0	4	0	1	4
4:15 PM	0	2	0	0	2	0	1	1
4:30 PM	1	1	0	0	1	0	1	1
4:45 PM	0	1	0	0	0	0	1	1
5:00 PM	1	2	0	0	3	1	3	4
5:15 PM	3	1	1	0	3	0	1	0
5:30 PM	1	0	0	0	0	0	1	3
5:45 PM	0	2	0	0	0	1	1	0
TOTALS	**6**	**10**	**1**	**0**	**13**	**2**	**10**	**14**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	1	0	0	0	1	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	1	0	0	0	1	2
4:45 PM	0	0	0	0	2	0	1	0	2	1	1	0
5:00 PM	0	0	0	0	1	1	0	0	1	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	1	1	0	0	1	0	0	0	0	0	0	0
5:45 PM	0	0	1	0	1	0	0	0	0	0	0	0
TOTALS	**1**	**1**	**1**	**0**	**5**	**1**	**3**	**0**	**3**	**1**	**3**	**4**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-007

Day: Friday

City: Redondo Beach

Date: 8/23/2013

AM

NS/EW Streets:	Pacific Coast Hwy/Catalina Ave			Pacific Coast Hwy/Catalina Ave			Herondo St/Anita St			Herondo St/Anita St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	1	1	2	1	1	2	1	1	2	1					
7:00 AM	6	570	31	16	143	7	14	58	7	9	48	79	988				
7:15 AM	5	594	35	25	141	6	21	44	12	33	31	94	1041				
7:30 AM	2	566	31	44	245	7	33	53	17	29	43	102	1172				
7:45 AM	7	566	30	32	238	11	32	65	13	20	38	94	1146				
8:00 AM	6	548	27	37	191	8	21	69	12	30	46	105	1100				
8:15 AM	8	533	27	40	226	7	30	56	11	43	55	100	1136				
8:30 AM	5	460	33	34	216	14	21	58	18	19	59	100	1037				
8:45 AM	9	468	35	37	242	8	26	44	16	37	65	104	1091				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	48	4305	249	265	1642	68	198	447	106	220	385	778	8711	0	0	0	0
APPROACH %'s :	1.04%	93.55%	5.41%	13.42%	83.14%	3.44%	26.36%	59.52%	14.11%	15.91%	27.84%	56.25%					
PEAK HR START TIME :	730 AM												TOTAL				
PEAK HR VOL :	23	2213	115	153	900	33	116	243	53	122	182	401	4554				
PEAK HR FACTOR :		0.975			0.917			0.936			0.890		0.971				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-007 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Pacific Coast Hwy/Catalina Ave			Pacific Coast Hwy/Catalina Ave			Herondo St/Anita St			Herondo St/Anita St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	1	1	2	1	1	2	1	1	2	1	
4:00 PM	10	328	56	41	339	19	11	66	21	26	53	47	1017
4:15 PM	10	323	56	48	431	13	10	72	11	25	55	42	1096
4:30 PM	20	343	48	40	427	24	11	69	18	38	52	49	1139
4:45 PM	23	288	51	51	448	12	15	62	17	29	77	61	1134
5:00 PM	11	320	59	48	435	14	17	61	13	30	86	35	1129
5:15 PM	17	317	50	59	465	15	12	72	18	27	48	59	1159
5:30 PM	18	369	55	38	480	23	19	48	32	35	83	70	1270
5:45 PM	12	342	46	46	478	19	18	60	19	30	102	88	1260
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	121	2630	421	371	3503	139	113	510	149	240	556	451	9204
APPROACH %'s :	3.81%	82.91%	13.27%	9.24%	87.29%	3.46%	14.64%	66.06%	19.30%	19.25%	44.59%	36.17%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	58	1348	210	191	1858	71	66	241	82	122	319	252	4818
PEAK HR FACTOR :		0.914			0.976			0.953			0.788		0.948

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-007_Peds & Bikes
N/S Street: Pacific Coast Hwy/Catalina Ave
E/W Street: Herondo St/Anita St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	2	1	0
7:15 AM	1	0	0	0	1	1	3	0
7:30 AM	0	0	0	0	1	2	0	1
7:45 AM	0	2	0	0	4	0	0	3
8:00 AM	2	5	0	0	0	3	3	2
8:15 AM	0	4	0	0	2	0	0	2
8:30 AM	3	3	0	0	2	3	0	0
8:45 AM	4	2	0	0	1	1	1	0
TOTALS	**10**	**16**	**0**	**0**	**11**	**12**	**8**	**8**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	1	0	1	0	0	0	0	0	0	1
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0
7:45 AM	1	1	0	2	1	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0
8:15 AM	0	2	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0
TOTALS	**1**	**6**	**1**	**2**	**3**	**0**	**1**	**0**	**0**	**0**	**1**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	3	3	0	0	2	3	3	1
4:15 PM	1	1	0	0	0	0	3	1
4:30 PM	2	2	0	0	1	1	3	0
4:45 PM	0	2	0	0	1	1	3	1
5:00 PM	0	2	0	0	2	1	2	0
5:15 PM	0	0	0	0	2	0	2	1
5:30 PM	1	1	0	0	1	3	2	2
5:45 PM	2	4	0	3	2	0	6	3
TOTALS	**9**	**15**	**0**	**3**	**11**	**9**	**24**	**9**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	2	0	0	0	2	0	0	3	0	0	2	0
4:15 PM	0	2	1	0	0	0	0	0	0	1	0	0
4:30 PM	1	2	0	0	1	0	1	0	0	0	1	0
4:45 PM	0	2	0	1	2	0	0	0	0	0	3	0
5:00 PM	1	2	0	0	0	0	0	0	0	0	2	0
5:15 PM	0	0	0	1	1	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	0	0	1	0	0	1	0
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0
TOTALS	**4**	**9**	**1**	**2**	**7**	**0**	**1**	**4**	**0**	**1**	**9**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-107 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Pacific Coast Hwy/Catalina Ave			Pacific Coast Hwy/Catalina Ave			Herondo St/Anita St			Herondo St/Anita St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	1	1	2	1	1	2	1	1	2	1					
7:00 AM	0	0	0	0	16	0	0	0	1	14	0	0	31				
7:15 AM	0	0	0	0	20	0	0	0	0	31	0	0	51				
7:30 AM	0	0	0	0	36	0	0	0	0	24	0	0	60				
7:45 AM	1	0	0	0	30	0	0	0	1	36	0	0	68				
8:00 AM	0	0	0	0	38	0	0	0	0	40	0	0	78				
8:15 AM	0	0	0	0	37	0	0	0	1	31	0	0	69				
8:30 AM	0	0	0	0	36	0	0	0	3	29	0	0	68				
8:45 AM	1	0	0	0	32	0	0	0	0	30	0	0	63				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	2	0	0	0	245	0	0	0	6	235	0	0	488	0	0	0	0
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%					
PEAK HR START TIME :	745 AM												TOTAL				
PEAK HR VOL :	1	0	0	0	141	0	0	0	5	136	0	0	283				
PEAK HR FACTOR :	0.250			0.928			0.417			0.850			0.907				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-107 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Pacific Coast Hwy/Catalina Ave			Pacific Coast Hwy/Catalina Ave			Herondo St/Anita St			Herondo St/Anita St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	1	1	2	1	1	2	1	1	2	1	
4:00 PM	0	0	0	0	59	0	0	0	5	30	0	0	94
4:15 PM	0	0	0	0	7	0	0	0	6	34	0	0	47
4:30 PM	0	0	0	0	60	0	0	0	9	54	0	0	123
4:45 PM	0	0	0	0	110	0	0	0	3	44	0	0	157
5:00 PM	0	0	0	0	101	0	0	0	0	37	0	0	138
5:15 PM	0	0	0	0	105	0	0	0	4	39	0	0	148
5:30 PM	0	0	0	0	106	0	0	0	3	41	0	0	150
5:45 PM	0	0	0	0	102	0	0	0	3	36	0	0	141
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	650	0	0	0	33	315	0	0	998
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	0	0	0	422	0	0	0	10	161	0	0	593
PEAK HR FACTOR :	0.000			0.959			0.625			0.915			0.944

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-107
N/S Street: Pacific Coast Hwy/Catalina Ave
E/W Street: Herondo St/Anita St
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	2	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	1	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	1	0	0	0	0
8:15 AM	0	0	1	2	0	0	0	0
8:30 AM	0	0	1	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**3**	**5**	**0**	**0**	**0**	**0**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	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
7:30 AM	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
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	1	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	1	1	0	0	0	0
4:15 PM	0	0	0	1	0	0	0	0
4:30 PM	0	0	2	2	0	0	0	0
4:45 PM	0	0	1	2	0	0	0	0
5:00 PM	0	0	4	3	0	0	0	0
5:15 PM	0	0	0	2	0	0	0	0
5:30 PM	0	0	1	0	0	0	0	0
5:45 PM	0	0	1	2	0	0	0	0
TOTALS	**0**	**0**	**10**	**13**	**0**	**0**	**0**	**0**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	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
4:30 PM	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
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	1	0	0	0
5:30 PM	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
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-107 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Pacific Coast Hwy/Catalina Ave			Pacific Coast Hwy/Catalina Ave			Herondo St/Anita St			Herondo St/Anita St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	1	1	2	1	1	2	1	1	2	1					
7:00 AM	0	0	0	0	22	0	0	0	2	15	0	0	39				
7:15 AM	0	0	0	0	14	0	0	0	0	25	0	0	39				
7:30 AM	0	0	0	0	36	0	0	0	2	18	0	0	56				
7:45 AM	0	0	0	0	36	0	0	0	0	28	0	0	64				
8:00 AM	0	0	0	0	32	0	0	0	1	36	0	0	69				
8:15 AM	0	0	0	0	24	0	0	0	0	46	0	0	70				
8:30 AM	0	0	0	0	38	0	0	0	1	33	0	0	72				
8:45 AM	0	0	0	0	30	0	0	0	5	33	0	0	68				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	0	0	232	0	0	0	11	234	0	0	477	0	0	0	0
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%					
PEAK HR START TIME :	800 AM												TOTAL				
PEAK HR VOL :	0	0	0	0	124	0	0	0	7	148	0	0	279				
PEAK HR FACTOR :	0.000			0.816			0.350			0.804			0.969				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-107 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Pacific Coast Hwy/Catalina Ave			Pacific Coast Hwy/Catalina Ave			Herondo St/Anita St			Herondo St/Anita St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	1	1	2	1	1	2	1	1	2	1	
4:00 PM	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
4:30 PM	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
5:00 PM	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
5:30 PM	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
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	0 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000			0.000			0.000			0.000			0.000

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-107_Peds & Bikes-Extra Leg
N/S Street: Pacific Coast Hwy/Catalina Ave
E/W Street: Herondo St/Anita St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	3	15	0	0	0	0
7:15 AM	0	0	1	8	0	0	0	0
7:30 AM	0	0	1	0	0	0	0	0
7:45 AM	0	0	0	3	0	0	0	0
8:00 AM	0	0	5	2	0	0	0	0
8:15 AM	0	0	1	0	0	0	0	0
8:30 AM	0	0	1	1	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**12**	**29**	**0**	**0**	**0**	**0**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	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
7:30 AM	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
8:00 AM	1	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0
TOTALS	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	2	0	0	0	0
4:15 PM	0	0	4	2	0	0	0	0
4:30 PM	0	0	0	1	0	0	0	0
4:45 PM	0	0	2	1	0	0	0	0
5:00 PM	0	0	2	3	0	0	0	0
5:15 PM	0	0	1	2	0	0	0	0
5:30 PM	0	0	0	1	0	0	0	0
5:45 PM	0	0	7	2	0	0	0	0
TOTALS	**0**	**0**	**16**	**14**	**0**	**0**	**0**	**0**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	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
4:30 PM	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
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:15 PM	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
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-008 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Prospect Ave			Prospect Ave			Anita St			Anita St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	1	1	1	2	0	1	2	0	1	2	0					
7:00 AM	30	69	10	11	24	1	0	76	8	14	93	12	348	0	0	0	0
7:15 AM	46	96	12	15	44	5	4	97	10	23	124	9	485	0	0	0	1
7:30 AM	43	106	32	11	113	7	4	101	14	61	202	18	712	0	0	0	0
7:45 AM	76	123	62	23	96	11	6	108	15	35	212	30	797	0	0	0	0
8:00 AM	51	102	34	18	61	6	5	154	14	24	167	21	657	0	0	0	0
8:15 AM	54	99	29	10	54	6	5	114	16	24	160	14	585	0	0	0	0
8:30 AM	38	80	17	15	58	3	3	96	23	18	143	21	515	0	0	0	1
8:45 AM	45	89	22	14	63	5	4	93	15	30	145	20	545	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	383	764	218	117	513	44	31	839	115	229	1246	145	4644	0	0	0	2
APPROACH %'s :	28.06%	55.97%	15.97%	17.36%	76.11%	6.53%	3.15%	85.18%	11.68%	14.14%	76.91%	8.95%					

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	224	430	157	62	324	30	20	477	59	144	741	83	2751
PEAK HR FACTOR :		0.777			0.794			0.803			0.861		0.863

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-008 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Prospect Ave			Prospect Ave			Anita St			Anita St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	1	1	1	2	0	1	2	0	1	2	0					
4:00 PM	28	63	17	19	79	6	7	139	17	17	146	24	562	0	0	0	0
4:15 PM	26	67	14	17	70	12	14	131	16	28	147	21	563	0	0	0	0
4:30 PM	34	69	16	19	73	26	12	154	22	41	172	17	655	0	0	0	3
4:45 PM	23	67	19	25	146	12	14	156	25	39	199	21	746	0	0	1	1
5:00 PM	40	95	25	23	150	14	4	141	19	16	152	17	696	0	0	0	0
5:15 PM	40	68	17	18	133	18	9	150	25	22	171	20	691	0	0	0	0
5:30 PM	35	65	15	23	129	11	4	149	36	30	163	22	682	0	0	0	0
5:45 PM	34	78	16	14	136	9	8	121	26	19	201	23	685	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	260	572	139	158	916	108	72	1141	186	212	1351	165	5280	0	0	1	4
APPROACH %'s :	26.78%	58.91%	14.32%	13.37%	77.50%	9.14%	5.15%	81.56%	13.30%	12.27%	78.18%	9.55%					

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	138	295	76	89	558	55	31	596	105	107	685	80	2815
PEAK HR FACTOR :		0.795			0.939			0.938			0.842		0.943

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-008
N/S Street: Prospect Ave
E/W Street: Anita St
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	1	0	0	0
7:15 AM	0	0	0	0	0	1	0	0
7:30 AM	0	0	0	0	0	1	0	0
7:45 AM	1	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	1	0
8:30 AM	0	1	1	0	0	0	0	0
8:45 AM	1	0	0	0	0	0	0	0
TOTALS	**2**	**1**	**1**	**0**	**1**	**2**	**1**	**1**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	2	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	1	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	1
TOTALS	**0**	**3**	**0**	**0**	**5**	**1**	**0**	**1**	**0**	**0**	**0**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	1	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0
4:45 PM	1	1	0	1	0	0	0	0
5:00 PM	0	0	1	0	0	2	1	1
5:15 PM	1	2	0	0	1	2	1	0
5:30 PM	3	1	0	2	1	1	0	0
5:45 PM	1	0	1	0	2	0	0	1
TOTALS	**7**	**6**	**2**	**3**	**4**	**5**	**2**	**2**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	0	2	0	0	1	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	0	0	1	1	0	0	0	0	0	0	0
5:00 PM	0	0	1	0	0	0	1	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	2	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**1**	**1**	**1**	**3**	**0**	**3**	**2**	**0**	**0**	**3**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-008 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Prospect Ave			Prospect Ave			Anita St			Anita St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	1	1	2	0	1	2	0	1	2	0	
7:00 AM	33	70	5	10	38	0	3	88	8	22	97	10	384
7:15 AM	47	64	16	11	44	7	3	93	10	51	121	10	477
7:30 AM	53	107	36	8	122	10	6	107	11	58	148	25	691
7:45 AM	48	111	57	15	58	10	7	151	15	42	124	34	672
8:00 AM	54	131	38	18	55	5	4	114	11	28	143	21	622
8:15 AM	47	90	15	11	49	6	3	110	17	22	130	14	514
8:30 AM	53	101	16	17	71	8	8	100	23	25	138	14	574
8:45 AM	54	88	16	15	47	8	3	84	21	14	149	25	524
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	389	762	199	105	484	54	37	847	116	262	1050	153	4458
APPROACH %'s :	28.81%	56.44%	14.74%	16.33%	75.27%	8.40%	3.70%	84.70%	11.60%	17.88%	71.67%	10.44%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	202	439	146	52	284	31	20	482	54	150	545	94	2499
PEAK HR FACTOR :		0.882			0.655			0.803			0.854		0.904

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-008

Day: Friday

City: Redondo Beach

Date: 8/23/2013

PM

NS/EW Streets:	Prospect Ave			Prospect Ave			Anita St			Anita St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	1	1	2	0	1	2	0	1	2	0	
4:00 PM	21	56	11	14	67	9	7	133	23	14	114	18	487
4:15 PM	21	67	10	14	88	6	7	119	17	23	108	21	501
4:30 PM	23	85	18	16	106	6	3	118	21	21	121	21	559
4:45 PM	27	79	10	15	106	11	7	123	15	18	127	24	562
5:00 PM	33	64	20	15	104	10	1	142	25	23	119	18	574
5:15 PM	35	71	23	18	139	9	3	133	22	19	139	14	625
5:30 PM	23	64	12	18	109	11	7	133	25	15	132	21	570
5:45 PM	30	67	14	19	118	7	6	117	20	27	157	31	613
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	213	553	118	129	837	69	41	1018	168	160	1017	168	4491
APPROACH %'s :	24.10%	62.56%	13.35%	12.46%	80.87%	6.67%	3.34%	82.97%	13.69%	11.90%	75.61%	12.49%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	121	266	69	70	470	37	17	525	92	84	547	84	2382
PEAK HR FACTOR :		0.884			0.869			0.943			0.831		0.953

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-008_Peds & Bikes
N/S Street: Prospect Ave
E/W Street: Anita St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	0	0	1	0
7:30 AM	0	0	0	1	0	0	0	0
7:45 AM	0	0	0	0	1	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	2	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	0	0	0	0	0
TOTALS	**0**	**0**	**1**	**4**	**1**	**0**	**1**	**0**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0
7:45 AM	0	1	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
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:30 AM	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	1
TOTALS	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**1**	**1**

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	1	0	0	0	0	0
4:15 PM	1	0	1	0	0	0	0	0
4:30 PM	0	0	0	1	0	0	0	0
4:45 PM	2	1	1	0	0	0	1	1
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	23	0	0	0	0	0	0
5:30 PM	0	0	0	52	0	1	0	0
5:45 PM	0	0	0	0	0	0	0	1
TOTALS	**3**	**24**	**3**	**53**	**0**	**1**	**1**	**2**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	2	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	1	0
4:45 PM	0	1	0	0	0	0	0	1	0	0	0	0
5:00 PM	0	0	1	0	0	0	0	0	0	0	1	0
5:15 PM	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
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**3**	**0**	**1**	**2**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-009 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Harbor Dr			Harbor Dr			Yacht Club Way			Yacht Club Way			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	1	0	0	1	0	0	1	0	
7:00 AM	1	40	1	5	22	7	9	1	3	0	1	1	91
7:15 AM	2	45	1	5	22	5	5	0	1	0	0	2	88
7:30 AM	2	86	0	0	25	1	12	0	3	0	0	0	129
7:45 AM	4	82	0	0	37	8	14	0	7	0	0	0	152
8:00 AM	4	94	0	4	27	5	13	0	3	0	1	0	151
8:15 AM	2	83	1	1	42	11	17	0	4	0	0	0	161
8:30 AM	3	55	0	2	36	5	13	0	2	0	0	1	117
8:45 AM	6	72	0	1	40	3	8	0	2	0	0	1	133
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	24	557	3	18	251	45	91	1	25	0	2	5	1022
APPROACH %'s :	4.11%	95.38%	0.51%	5.73%	79.94%	14.33%	77.78%	0.85%	21.37%	0.00%	28.57%	71.43%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	12	345	1	5	131	25	56	0	17	0	1	0	593
PEAK HR FACTOR :		0.913			0.745			0.869			0.250		0.921

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-009 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Harbor Dr			Harbor Dr			Yacht Club Way			Yacht Club Way			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	1	0	0	1	0	0	1	0	
4:00 PM	8	48	0	0	77	11	13	0	7	0	0	0	164
4:15 PM	4	46	0	0	86	8	10	0	3	1	0	3	161
4:30 PM	3	45	0	3	121	7	3	0	1	0	0	25	208
4:45 PM	10	67	0	3	111	20	11	0	10	1	0	5	238
5:00 PM	1	54	1	1	109	8	8	0	5	1	0	6	194
5:15 PM	9	57	1	4	115	15	9	0	3	1	0	5	219
5:30 PM	7	49	0	4	103	21	12	0	3	0	0	6	205
5:45 PM	15	63	0	0	96	19	8	0	6	0	0	1	208
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	57	429	2	15	818	109	74	0	38	4	0	51	1597
APPROACH %'s :	11.68%	87.91%	0.41%	1.59%	86.84%	11.57%	66.07%	0.00%	33.93%	7.27%	0.00%	92.73%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	23	223	2	11	456	50	31	0	19	3	0	41	859
PEAK HR FACTOR :		0.805			0.965			0.595			0.440		0.902

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-009
N/S Street: Harbor Dr
E/W Street: Yacht Club Way
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	2	2	2	1	4	3
7:15 AM	0	0	0	2	1	0	4	2
7:30 AM	0	0	0	1	0	0	2	6
7:45 AM	0	0	0	0	1	2	6	7
8:00 AM	0	0	0	1	0	2	4	3
8:15 AM	0	0	0	1	3	0	7	4
8:30 AM	0	0	0	1	0	1	3	9
8:45 AM	0	0	1	0	3	1	7	5
TOTALS	**0**	**0**	**3**	**8**	**10**	**7**	**37**	**39**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	8	0	0	2	2	0	0	1	0	0	0
7:15 AM	0	12	0	0	11	1	0	0	0	0	0	0
7:30 AM	1	16	0	0	11	0	0	0	0	0	0	0
7:45 AM	1	10	0	0	7	0	0	0	0	0	0	0
8:00 AM	0	15	0	0	14	2	0	0	0	0	0	0
8:15 AM	1	9	0	0	18	0	0	0	0	0	0	0
8:30 AM	0	9	0	0	10	2	0	0	0	0	0	0
8:45 AM	0	29	0	0	10	2	1	0	0	0	1	0
TOTALS	**3**	**108**	**0**	**0**	**83**	**9**	**1**	**0**	**1**	**0**	**1**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	1	2	4	7
4:15 PM	0	0	0	0	2	1	6	7
4:30 PM	0	0	0	0	3	2	2	4
4:45 PM	0	0	1	1	0	0	6	11
5:00 PM	0	0	0	0	0	2	9	8
5:15 PM	0	2	1	7	1	1	3	11
5:30 PM	0	0	0	1	0	3	3	11
5:45 PM	0	0	0	0	3	1	2	4
TOTALS	**0**	**2**	**2**	**9**	**10**	**12**	**35**	**63**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	19	0	0	16	0	4	0	2	0	0	0
4:15 PM	0	21	0	0	16	2	2	0	0	0	0	0
4:30 PM	2	12	0	0	23	5	0	0	0	0	0	0
4:45 PM	1	7	0	0	20	0	2	0	0	0	0	0
5:00 PM	1	13	0	0	17	2	3	0	0	0	0	0
5:15 PM	0	14	0	0	27	5	4	0	1	0	0	0
5:30 PM	1	5	0	0	16	2	3	0	0	0	0	0
5:45 PM	2	11	0	0	33	0	3	0	0	0	0	0
TOTALS	**7**	**102**	**0**	**0**	**168**	**16**	**21**	**0**	**3**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-009 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Harbor Dr			Harbor Dr			Yacht Club Way			Yacht Club Way				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	1	0	1	1	0	0	1	0	0	1	0					
7:00 AM	2	50	0	1	28	3	12	0	1	1	0	0	98				
7:15 AM	5	62	0	4	31	6	10	0	4	1	0	0	123				
7:30 AM	2	84	0	5	30	5	11	0	9	0	0	0	146				
7:45 AM	3	89	1	1	42	1	7	1	3	1	0	0	149				
8:00 AM	9	96	0	0	34	6	6	0	2	0	0	0	153				
8:15 AM	3	74	0	0	55	9	11	0	1	1	1	0	155				
8:30 AM	4	54	0	0	51	7	7	0	4	2	0	0	129				
8:45 AM	2	72	1	1	51	12	13	0	4	0	0	0	156				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	30	581	2	12	322	49	77	1	28	6	1	0	1109	0	0	0	0
APPROACH %'s :	4.89%	94.78%	0.33%	3.13%	84.07%	12.79%	72.64%	0.94%	26.42%	85.71%	14.29%	0.00%					
PEAK HR START TIME :	730 AM												TOTAL				
PEAK HR VOL :	17	343	1	6	161	21	35	1	15	2	1	0	603				
PEAK HR FACTOR :		0.860			0.734			0.638			0.375		0.973				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-009 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Harbor Dr			Harbor Dr			Yacht Club Way			Yacht Club Way				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	1	0	1	1	0	0	1	0	0	1	0					
4:00 PM	6	73	0	1	65	10	17	1	3	1	0	2	179				
4:15 PM	6	67	0	0	80	7	9	0	5	0	0	5	179				
4:30 PM	10	60	0	0	82	16	11	0	7	1	0	0	187				
4:45 PM	9	64	0	1	91	15	10	0	3	0	0	2	195				
5:00 PM	9	72	2	1	87	8	9	0	7	0	0	2	197				
5:15 PM	8	67	1	0	89	16	17	0	8	0	0	1	207				
5:30 PM	10	52	0	0	102	21	11	1	5	1	0	1	204				
5:45 PM	5	65	1	3	98	14	11	0	7	1	0	0	205				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	63	520	4	6	694	107	95	2	45	4	0	13	1553	0	0	0	0
APPROACH %'s :	10.73%	88.59%	0.68%	0.74%	86.00%	13.26%	66.90%	1.41%	31.69%	23.53%	0.00%	76.47%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	32	256	4	4	376	59	48	1	27	2	0	4	813
PEAK HR FACTOR :		0.880			0.892			0.760			0.750		0.982

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-009_Peds & Bikes
N/S Street: Harbor Dr
E/W Street: Yacht Club Way
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	4	6	3	1	0	1	1	0
7:15 AM	9	11	3	3	0	1	2	0
7:30 AM	6	1	0	0	0	0	0	0
7:45 AM	13	13	0	0	0	0	2	1
8:00 AM	10	10	0	2	0	0	0	0
8:15 AM	4	6	4	0	0	0	0	1
8:30 AM	10	2	2	1	0	0	0	2
8:45 AM	11	10	1	0	0	0	1	0
TOTALS	**67**	**59**	**13**	**7**	**0**	**2**	**6**	**4**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	11	0	0	7	0
7:15 AM	0	0	0	0	0	0	0	16	0	0	9	0
7:30 AM	0	0	0	0	0	0	1	14	0	0	12	0
7:45 AM	0	0	0	0	0	0	0	16	0	0	10	0
8:00 AM	0	0	0	0	1	0	0	14	0	0	9	0
8:15 AM	0	1	0	1	0	1	0	10	0	0	11	1
8:30 AM	0	0	0	1	0	0	1	11	0	0	15	1
8:45 AM	0	0	0	2	0	0	0	11	0	0	16	2
TOTALS	**0**	**1**	**0**	**4**	**1**	**1**	**2**	**103**	**0**	**0**	**89**	**4**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	7	23	6	0	0	0	0	7
4:15 PM	21	11	0	0	0	0	1	1
4:30 PM	2	11	0	1	0	0	0	0
4:45 PM	10	4	1	2	0	0	1	1
5:00 PM	4	7	1	3	0	1	0	0
5:15 PM	6	10	1	6	0	1	0	0
5:30 PM	13	8	1	5	0	1	0	1
5:45 PM	1	9	3	0	0	0	0	2
TOTALS	**64**	**83**	**13**	**17**	**0**	**3**	**2**	**12**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	3	0	0	0	20	0	0	17	0
4:15 PM	0	0	0	1	0	0	0	18	0	0	20	5
4:30 PM	0	0	0	0	0	0	0	25	0	0	33	0
4:45 PM	0	0	0	2	0	0	0	24	0	0	34	6
5:00 PM	0	0	0	2	0	0	0	16	0	0	24	3
5:15 PM	0	0	0	2	0	1	0	20	0	0	39	2
5:30 PM	0	0	0	7	0	0	0	36	0	0	31	0
5:45 PM	0	0	0	1	0	0	0	14	0	0	26	7
TOTALS	**0**	**0**	**0**	**18**	**0**	**1**	**0**	**173**	**0**	**0**	**224**	**23**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-010 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Catalina Ave			Catalina Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	0	2	0	1.5	0	.5	0	0	0					
7:00 AM	0	466	0	0	176	0	85	0	1	0	0	0	728				
7:15 AM	0	462	0	0	246	0	118	0	1	0	0	0	827				
7:30 AM	1	473	0	0	328	2	121	0	1	0	0	0	926				
7:45 AM	0	408	0	0	280	0	133	0	5	0	0	0	826				
8:00 AM	1	373	0	0	263	0	126	0	2	0	0	0	765				
8:15 AM	3	388	0	0	272	0	101	0	2	0	0	0	766				
8:30 AM	0	440	0	0	253	1	117	0	3	0	0	0	814				
8:45 AM	2	425	0	0	301	0	91	0	1	0	0	0	820				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	7	3435	0	0	2119	3	892	0	16	0	0	0	6472	0	0	0	0
APPROACH %'s :	0.20%	99.80%	0.00%	0.00%	99.86%	0.14%	98.24%	0.00%	1.76%	#DIV/0!	#DIV/0!	#DIV/0!					
PEAK HR START TIME :	715 AM												TOTAL				
PEAK HR VOL :	2	1716	0	0	1117	2	498	0	9	0	0	0	3344				
PEAK HR FACTOR :		0.906			0.848			0.918			0.000		0.903				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-010 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Catalina Ave			Catalina Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	0	2	0	1.5	0	.5	0	0	0					
4:00 PM	3	307	0	0	402	0	79	0	2	0	0	0	793				
4:15 PM	4	296	0	0	156	0	96	0	4	0	0	0	556				
4:30 PM	4	303	0	0	368	0	80	0	5	0	0	0	760				
4:45 PM	3	306	0	0	494	1	76	0	7	0	0	0	887				
5:00 PM	2	369	0	0	520	0	74	0	6	0	0	0	971				
5:15 PM	6	339	0	0	503	0	94	0	8	0	0	0	950				
5:30 PM	4	331	0	0	540	1	86	0	4	0	0	0	966				
5:45 PM	3	304	0	0	504	1	91	0	4	0	0	0	907				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	29	2555	0	0	3487	3	676	0	40	0	0	0	6790	0	0	0	0
APPROACH %'s :	1.12%	98.88%	0.00%	0.00%	99.91%	0.09%	94.41%	0.00%	5.59%	#DIV/0!	#DIV/0!	#DIV/0!					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	15	1343	0	0	2067	2	345	0	22	0	0	0	3794				
PEAK HR FACTOR :		0.915			0.956			0.900			0.000		0.977				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-010
N/S Street: Pacific Coast Hwy
E/W Street: Catalina Ave
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	1	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	1	0	0	0	1
7:45 AM	0	0	0	2	0	0	2	0
8:00 AM	0	0	0	1	0	0	2	0
8:15 AM	0	0	1	1	0	0	1	2
8:30 AM	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**1**	**6**	**0**	**0**	**5**	**4**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:30 AM	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
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	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
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	0	0	0	3
4:15 PM	0	0	0	0	0	0	1	1
4:30 PM	0	0	0	0	0	0	1	1
4:45 PM	0	0	0	1	0	0	5	1
5:00 PM	0	0	3	0	0	0	3	3
5:15 PM	0	0	0	0	0	0	1	0
5:30 PM	0	0	0	1	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**3**	**2**	**0**	**0**	**11**	**10**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	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
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	2	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	2	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	1	0	0	1	0	0	0	0	0	0	0
TOTALS	**0**	**4**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-010 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Catalina Ave			Catalina Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	0	2	0	1.5	0	.5	0	0	0					
7:00 AM	2	492	0	0	160	0	115	0	1	0	0	0	770				
7:15 AM	1	509	0	0	186	0	126	0	1	0	0	0	823				
7:30 AM	1	463	0	0	292	0	136	0	2	0	0	0	894				
7:45 AM	1	460	0	0	269	1	143	0	0	0	0	0	874				
8:00 AM	3	446	0	0	232	0	135	0	1	0	0	0	817				
8:15 AM	1	435	0	0	280	0	133	0	1	0	0	0	850				
8:30 AM	0	391	0	0	253	0	106	0	1	0	0	0	751				
8:45 AM	5	410	0	0	294	0	101	0	4	0	0	0	814				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	14	3606	0	0	1966	1	995	0	11	0	0	0	6593	0	0	0	0
APPROACH %'s :	0.39%	99.61%	0.00%	0.00%	99.95%	0.05%	98.91%	0.00%	1.09%	#DIV/0!	#DIV/0!	#DIV/0!					
PEAK HR START TIME :	730 AM												TOTAL				
PEAK HR VOL :	6	1804	0	0	1073	1	547	0	4	0	0	0	3435				
PEAK HR FACTOR :		0.975			0.920			0.963			0.000		0.961				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-010 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Catalina Ave			Catalina Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	0	2	0	1.5	0	.5	0	0	0					
4:00 PM	4	334	0	0	435	2	85	0	7	0	0	0	867				
4:15 PM	2	268	0	0	459	1	97	0	1	0	0	0	828				
4:30 PM	3	322	0	0	488	0	92	0	7	0	0	0	912				
4:45 PM	9	316	0	0	499	0	74	0	6	0	0	0	904				
5:00 PM	2	277	0	0	476	1	95	0	10	0	0	0	861				
5:15 PM	4	331	0	0	511	1	85	0	3	0	0	0	935				
5:30 PM	1	346	0	0	471	0	78	0	8	0	0	0	904				
5:45 PM	1	308	0	0	458	0	73	0	2	0	0	0	842				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	26	2502	0	0	3797	5	679	0	44	0	0	0	7053	0	0	0	0
APPROACH %'s :	1.03%	98.97%	0.00%	0.00%	99.87%	0.13%	93.91%	0.00%	6.09%	#DIV/0!	#DIV/0!	#DIV/0!					
PEAK HR START TIME :	430 PM												TOTAL				
PEAK HR VOL :	18	1246	0	0	1974	2	346	0	26	0	0	0	3612				
PEAK HR FACTOR :		0.943			0.965			0.886			0.000		0.966				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-010_Peds & Bikes
N/S Street: Pacific Coast Hwy
E/W Street: Catalina Ave
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	13	2	0	0	2	18
7:15 AM	0	0	12	0	0	0	0	8
7:30 AM	0	0	1	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	2
8:00 AM	0	0	1	2	0	0	4	2
8:15 AM	0	0	0	1	0	0	1	0
8:30 AM	0	0	2	0	0	0	2	2
8:45 AM	0	0	1	2	0	0	1	0
TOTALS	**0**	**0**	**30**	**7**	**0**	**0**	**10**	**33**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	2	0	0	0	0	0	0	0
7:15 AM	0	2	0	0	4	0	1	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	1	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	1	0	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	1	0	0	0	0	0
TOTALS	**0**	**6**	**0**	**0**	**7**	**0**	**4**	**0**	**0**	**0**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	1	0	0	1	1
4:15 PM	0	0	1	12	0	0	12	1
4:30 PM	0	0	1	1	0	0	3	0
4:45 PM	0	0	1	0	0	0	0	3
5:00 PM	0	0	0	1	0	0	3	2
5:15 PM	0	0	0	0	0	0	4	2
5:30 PM	0	0	1	2	0	0	2	2
5:45 PM	0	0	1	0	0	0	1	0
TOTALS	**0**	**0**	**5**	**17**	**0**	**0**	**26**	**11**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	3	0	0	2	0	0	0	0	0	0	0
4:15 PM	0	2	0	0	1	0	0	0	0	0	0	0
4:30 PM	0	2	0	0	2	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	1	0	0	0	1	0	0	0
5:15 PM	1	0	0	0	2	0	0	0	2	0	0	0
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	2	1	1	0	0	0	0	0
TOTALS	**1**	**8**	**0**	**0**	**11**	**1**	**1**	**0**	**3**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-011 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Harbor Dr			Harbor Dr			Marina Way			Marina Way			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	0	1	0	1	0	1	0	1	0	
7:00 AM	3	34	0	0	17	6	8	0	15	0	0	0	83
7:15 AM	4	43	0	0	16	8	7	0	5	0	0	0	83
7:30 AM	6	75	0	0	20	7	14	0	6	0	0	0	128
7:45 AM	14	93	0	0	23	19	2	0	6	0	0	0	157
8:00 AM	15	90	0	0	24	6	8	0	13	0	0	0	156
8:15 AM	20	69	0	0	29	17	12	0	11	0	0	0	158
8:30 AM	21	51	0	0	22	16	6	0	7	0	0	0	123
8:45 AM	16	70	0	0	25	16	8	0	11	0	0	0	146
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	99	525	0	0	176	95	65	0	74	0	0	0	1034
APPROACH %'s :	15.87%	84.13%	0.00%	0.00%	64.94%	35.06%	46.76%	0.00%	53.24%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	55	327	0	0	96	49	36	0	36	0	0	0	599
PEAK HR FACTOR :		0.893			0.788			0.783			0.000		0.948

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-011 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Harbor Dr			Harbor Dr			Marina Way			Marina Way			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	0	1	0	1	0	1	0	1	0	
4:00 PM	9	38	0	0	64	16	15	0	14	0	0	0	156
4:15 PM	17	46	0	0	81	11	5	0	18	0	0	0	178
4:30 PM	14	29	0	0	103	26	17	0	14	0	0	0	203
4:45 PM	25	59	0	0	101	21	19	0	10	0	0	0	235
5:00 PM	21	45	0	0	81	33	12	0	15	0	0	0	207
5:15 PM	29	46	0	0	83	37	19	0	22	0	0	0	236
5:30 PM	26	45	0	0	77	22	11	0	25	0	0	0	206
5:45 PM	33	66	0	0	89	25	12	0	10	0	0	0	235
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	174	374	0	0	679	191	110	0	128	0	0	0	1656
APPROACH %'s :	31.75%	68.25%	0.00%	0.00%	78.05%	21.95%	46.22%	0.00%	53.78%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	109	202	0	0	330	117	54	0	72	0	0	0	884
PEAK HR FACTOR :	0.785			0.931			0.768			0.000			0.936

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-011
N/S Street: Harbor Dr
E/W Street: Marina Way
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	0	0	0	0	0	4	2
7:15 AM	0	1	0	0	0	0	5	4
7:30 AM	0	0	1	0	0	0	1	5
7:45 AM	0	0	0	0	0	0	6	4
8:00 AM	0	0	0	0	0	0	4	5
8:15 AM	0	0	0	0	0	0	9	1
8:30 AM	0	1	0	1	0	0	3	7
8:45 AM	0	0	0	0	0	0	8	8
TOTALS	**1**	**2**	**1**	**1**	**0**	**0**	**40**	**36**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	9	0	0	3	0	0	0	0	0	0	0
7:15 AM	0	8	0	0	12	0	0	0	0	0	0	0
7:30 AM	1	18	0	0	11	0	0	0	3	0	0	0
7:45 AM	0	11	0	0	8	0	1	0	1	0	0	0
8:00 AM	0	18	0	0	10	0	0	0	0	0	0	0
8:15 AM	0	8	0	0	19	0	0	0	0	0	0	0
8:30 AM	0	14	0	0	8	0	0	0	0	0	0	0
8:45 AM	0	24	0	0	10	0	0	0	3	0	0	0
TOTALS	**1**	**110**	**0**	**0**	**81**	**0**	**1**	**0**	**7**	**0**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	0	0	9	2
4:15 PM	1	0	0	0	0	0	3	6
4:30 PM	0	0	0	0	0	0	2	6
4:45 PM	0	0	0	0	0	0	7	7
5:00 PM	0	0	0	0	0	0	7	8
5:15 PM	0	0	0	0	0	0	3	21
5:30 PM	0	0	0	1	0	0	1	10
5:45 PM	0	0	0	0	0	0	5	5
TOTALS	**1**	**0**	**0**	**1**	**0**	**0**	**37**	**65**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	1	18	0	0	17	1	0	0	2	0	0	0
4:15 PM	0	19	0	0	19	0	0	0	0	0	0	0
4:30 PM	1	16	1	0	19	1	1	0	2	0	0	0
4:45 PM	0	5	0	0	24	0	1	0	0	0	0	0
5:00 PM	0	12	0	0	16	0	0	0	0	0	0	0
5:15 PM	5	15	0	0	24	0	0	0	3	0	0	0
5:30 PM	0	4	0	0	17	0	0	0	0	0	0	0
5:45 PM	0	11	0	0	32	0	2	0	0	0	0	0
TOTALS	**7**	**100**	**1**	**0**	**168**	**2**	**4**	**0**	**7**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-011 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Harbor Dr			Harbor Dr			Marina Way			Marina Way				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	0	1	0	1	0	1	0	0	0					
7:00 AM	14	36	0	0	17	9	6	0	8	0	0	0	90				
7:15 AM	4	46	0	0	23	12	6	0	6	0	0	0	97				
7:30 AM	7	40	0	0	21	11	3	0	11	0	0	0	93				
7:45 AM	9	68	0	0	38	10	13	0	12	0	0	0	150				
8:00 AM	7	71	0	0	35	20	8	0	11	0	0	0	152				
8:15 AM	17	55	0	0	31	17	7	0	6	0	0	0	133				
8:30 AM	12	50	0	0	38	19	17	0	15	0	0	0	151				
8:45 AM	21	70	0	0	47	20	11	0	10	0	0	0	179				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	91	436	0	0	250	118	71	0	79	0	0	0	1045	0	0	0	0
APPROACH %'s :	17.27%	82.73%	0.00%	0.00%	67.93%	32.07%	47.33%	0.00%	52.67%	#DIV/0!	#DIV/0!	#DIV/0!					
PEAK HR START TIME :	800 AM												TOTAL				
PEAK HR VOL :	57	246	0	0	151	76	43	0	42	0	0	0	615				
PEAK HR FACTOR :		0.832			0.847			0.664			0.000		0.859				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-011 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Harbor Dr			Harbor Dr			Marina Way			Marina Way			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	1	0	1	0	1	0	0	0	
4:00 PM	15	53	0	0	98	20	12	0	14	0	0	0	212
4:15 PM	20	70	0	0	89	22	14	0	16	0	0	0	231
4:30 PM	15	68	0	0	108	17	8	0	12	0	0	0	228
4:45 PM	15	65	0	0	98	14	18	0	20	0	0	0	230
5:00 PM	21	64	0	0	98	18	17	0	19	0	0	0	237
5:15 PM	25	59	0	0	120	19	14	0	17	0	0	0	254
5:30 PM	18	70	0	0	110	16	10	0	18	0	0	0	242
5:45 PM	23	57	0	0	102	19	17	0	17	0	0	0	235
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	152	506	0	0	823	145	110	0	133	0	0	0	1869
APPROACH %'s :	23.10%	76.90%	0.00%	0.00%	85.02%	14.98%	45.27%	0.00%	54.73%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	87	250	0	0	430	72	58	0	71	0	0	0	968
PEAK HR FACTOR :		0.957			0.903			0.896			0.000		0.953

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-011_Peds & Bikes
N/S Street: Harbor Dr
E/W Street: Marina Way
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	1	2	0	0	5	7
7:15 AM	0	0	0	1	0	0	2	3
7:30 AM	0	1	0	0	0	0	5	9
7:45 AM	0	0	0	0	0	0	3	3
8:00 AM	0	0	0	0	0	0	5	6
8:15 AM	0	0	0	0	0	0	4	2
8:30 AM	0	0	0	0	0	0	6	2
8:45 AM	0	0	0	0	0	0	6	7
TOTALS	**0**	**1**	**1**	**3**	**0**	**0**	**36**	**39**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	27	0	0	8	0	0	0	0	0	0	0
7:15 AM	0	9	0	0	3	0	0	0	0	0	0	0
7:30 AM	1	16	0	0	8	0	0	0	1	0	0	0
7:45 AM	3	11	0	0	10	0	0	0	0	0	0	0
8:00 AM	2	21	0	0	10	2	0	0	0	0	0	0
8:15 AM	0	16	0	0	9	0	0	0	0	0	0	0
8:30 AM	0	16	0	0	17	0	0	0	0	0	0	0
8:45 AM	1	25	0	0	11	0	0	0	1	0	0	0
TOTALS	**7**	**141**	**0**	**0**	**76**	**2**	**0**	**0**	**2**	**0**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	1	0	0	0	1	6
4:15 PM	0	0	0	0	0	0	9	9
4:30 PM	0	0	0	0	0	0	3	7
4:45 PM	0	0	0	1	0	0	6	8
5:00 PM	0	0	0	0	0	0	4	3
5:15 PM	0	0	1	0	0	0	0	10
5:30 PM	0	0	0	0	0	0	2	6
5:45 PM	0	0	0	1	0	0	2	11
TOTALS	**0**	**0**	**2**	**2**	**0**	**0**	**27**	**60**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	18	0	0	36	0	0	0	1	0	0	0
4:15 PM	0	26	0	0	30	0	0	0	0	0	0	0
4:30 PM	0	29	0	0	40	0	0	0	0	0	0	0
4:45 PM	1	18	0	0	42	5	0	0	0	0	0	0
5:00 PM	0	20	0	0	33	2	0	0	1	0	0	0
5:15 PM	2	16	0	0	34	2	0	0	0	0	0	0
5:30 PM	0	29	0	0	53	1	1	0	0	0	0	0
5:45 PM	2	21	0	0	38	5	0	0	0	0	0	0
TOTALS	**5**	**177**	**0**	**0**	**306**	**15**	**1**	**0**	**2**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-012 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Gertruda Ave			Gertruda Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0.5	0.5	1	0	1	0					
7:00 AM	23	84	2	1	21	5	0	0	11	2	0	1	150				
7:15 AM	38	106	2	1	34	9	3	1	19	3	0	5	221				
7:30 AM	54	130	7	3	44	13	1	0	29	4	1	2	288				
7:45 AM	89	134	7	1	51	14	3	0	32	2	0	5	338				
8:00 AM	69	115	3	1	66	17	3	1	26	5	2	4	312				
8:15 AM	37	104	3	1	65	9	6	1	30	3	0	4	263				
8:30 AM	39	115	3	5	60	13	2	1	26	4	0	4	272				
8:45 AM	29	106	3	3	63	4	1	1	32	2	3	4	251				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	378	894	30	16	404	84	19	5	205	25	6	29	2095	0	0	0	0
APPROACH %'s :	29.03%	68.66%	2.30%	3.17%	80.16%	16.67%	8.30%	2.18%	89.52%	41.67%	10.00%	48.33%					
PEAK HR START TIME :	730 AM												TOTAL				
PEAK HR VOL :	249	483	20	6	226	53	13	2	117	14	3	15	1201				
PEAK HR FACTOR :		0.817			0.848			0.892			0.727		0.888				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-012 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Gertruda Ave			Gertruda Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0.5	0.5	1	0	1	0					
4:00 PM	35	73	5	3	92	13	5	0	61	4	0	4	295				
4:15 PM	23	90	3	2	55	11	2	0	62	5	0	4	257				
4:30 PM	23	79	2	3	97	12	9	2	86	5	1	5	324				
4:45 PM	24	71	3	2	160	13	10	0	72	2	0	2	359				
5:00 PM	38	70	2	2	150	23	14	0	63	3	1	4	370				
5:15 PM	43	89	0	1	135	14	15	1	65	0	2	2	367				
5:30 PM	48	79	2	0	165	19	11	1	81	1	1	2	410				
5:45 PM	36	72	3	2	127	12	8	0	59	2	0	3	324				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	270	623	20	15	981	117	74	4	549	22	5	26	2706	0	0	0	0
APPROACH %'s :	29.57%	68.24%	2.19%	1.35%	88.14%	10.51%	11.80%	0.64%	87.56%	41.51%	9.43%	49.06%					

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	153	309	7	5	610	69	50	2	281	6	4	10	1506
PEAK HR FACTOR :		0.888			0.929			0.895			0.625		0.918

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-012
N/S Street: Catalina Ave
E/W Street: Gertruda Ave
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	1	0	0
7:15 AM	0	0	0	0	0	1	0	0
7:30 AM	1	1	0	0	0	0	0	0
7:45 AM	1	0	0	0	0	0	1	3
8:00 AM	0	0	0	1	0	1	0	0
8:15 AM	0	0	0	0	1	0	16	0
8:30 AM	0	1	0	0	1	2	0	0
8:45 AM	0	2	0	0	3	0	1	1
TOTALS	**2**	**4**	**0**	**1**	**5**	**5**	**18**	**4**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:15 AM	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
7:45 AM	3	0	0	0	0	0	0	0	1	0	0	0
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:15 AM	1	0	0	0	1	0	1	0	2	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	1	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	1	0	0	0
TOTALS	**4**	**0**	**0**	**0**	**3**	**0**	**1**	**0**	**5**	**0**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	1	0	0	2	1	1	1
4:15 PM	0	0	0	0	0	1	0	1
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	2	0	2	0
5:00 PM	0	0	0	1	0	3	0	2
5:15 PM	0	0	0	4	0	2	0	0
5:30 PM	1	1	0	0	1	1	0	1
5:45 PM	1	0	0	0	0	0	1	0
TOTALS	**3**	**2**	**0**	**5**	**5**	**8**	**4**	**5**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	1	1	0	0	0	1	0	1	1	0	0	0
4:15 PM	1	1	0	0	1	0	0	0	0	0	1	0
4:30 PM	1	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	0	0	1	0	0	0
5:15 PM	0	0	0	0	2	0	0	0	2	0	0	0
5:30 PM	0	0	0	0	1	0	0	0	0	0	1	0
5:45 PM	0	2	0	0	0	0	0	1	0	0	0	0
TOTALS	**3**	**4**	**0**	**0**	**4**	**1**	**0**	**2**	**4**	**0**	**3**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-012

Day: Friday

City: Redondo Beach

Date: 8/23/2013

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Francisca Ave/Gertruda Ave			Francisca Ave/Gertruda Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	0	1	0					
7:00 AM	18	83	1	4	29	7	0	1	11	0	0	2	156				
7:15 AM	14	100	3	1	33	8	1	0	7	2	1	2	172				
7:30 AM	22	101	2	3	48	2	2	1	18	3	0	2	204				
7:45 AM	32	114	5	2	75	13	2	1	25	5	3	2	279				
8:00 AM	44	98	0	4	61	10	5	0	27	0	0	1	250				
8:15 AM	34	107	0	2	49	7	7	0	28	1	0	1	236				
8:30 AM	42	106	4	2	58	21	2	0	32	1	0	5	273				
8:45 AM	40	99	7	0	63	13	7	0	32	1	3	0	265				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	246	808	22	18	416	81	26	3	180	13	7	15	1835	0	0	0	0
APPROACH %'s :	22.86%	75.09%	2.04%	3.50%	80.78%	15.73%	12.44%	1.44%	86.12%	37.14%	20.00%	42.86%					

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	152	425	9	10	243	51	16	1	112	7	3	9	1038
PEAK HR FACTOR :		0.964			0.844			0.921			0.475		0.930

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-012

Day: Friday

City: Redondo Beach

Date: 8/23/2013

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Francisca Ave/Gertruda Ave			Francisca Ave/Gertruda Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	0	1	0	0	1	0	
4:00 PM	37	117	3	6	110	12	7	2	50	3	0	3	350
4:15 PM	25	88	1	4	133	13	4	0	45	3	0	0	316
4:30 PM	30	96	1	4	162	10	6	4	53	5	0	2	373
4:45 PM	35	102	2	5	120	15	13	0	61	3	0	6	362
5:00 PM	29	83	1	2	145	8	5	1	55	1	1	2	333
5:15 PM	38	81	1	1	156	14	5	0	65	4	0	3	368
5:30 PM	28	85	5	0	155	13	9	0	57	3	0	2	357
5:45 PM	33	88	2	7	145	11	8	1	80	2	0	1	378
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	255	740	16	29	1126	96	57	8	466	24	1	19	2837
APPROACH %'s :	25.22%	73.19%	1.58%	2.32%	90.01%	7.67%	10.73%	1.51%	87.76%	54.55%	2.27%	43.18%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	128	337	9	10	601	46	27	2	257	10	1	8	1436
PEAK HR FACTOR :		0.963			0.961			0.803			0.679		0.950

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-012_Peds &
N/S Street: Catalina Ave
E/W Street: Francisca Ave/Gertruda Ave
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	1	0	1	1	0
7:15 AM	0	0	0	1	0	0	0	0
7:30 AM	0	0	0	1	0	0	0	0
7:45 AM	0	0	0	0	2	0	0	0
8:00 AM	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	2	1	0	1
8:30 AM	0	0	0	1	1	2	0	0
8:45 AM	2	0	0	0	2	1	0	2
TOTALS	**2**	**0**	**0**	**4**	**7**	**5**	**1**	**5**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	2	0	0	0	0	0	0	0	1	0	0	0
7:15 AM	0	2	0	0	0	0	0	0	1	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	0	1	0	0	0	2	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	1	0	0	0	2	0	0	0	3	0	0	0
8:30 AM	1	1	0	0	0	0	0	0	0	0	0	0
8:45 AM	3	0	0	0	0	1	0	0	0	0	1	0
TOTALS	**8**	**3**	**0**	**0**	**3**	**1**	**0**	**0**	**7**	**0**	**1**	**0**

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	2	0	0	3	0	0	0
4:15 PM	0	0	1	0	0	1	2	1
4:30 PM	0	0	0	2	0	3	1	0
4:45 PM	0	1	0	0	2	1	0	0
5:00 PM	0	0	2	0	5	0	0	1
5:15 PM	4	0	1	0	0	0	4	1
5:30 PM	1	0	0	0	1	0	1	1
5:45 PM	3	3	0	0	4	5	2	0
TOTALS	**8**	**6**	**4**	**2**	**15**	**10**	**10**	**4**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0
4:15 PM	3	0	0	0	2	0	0	2	0	0	1	0
4:30 PM	3	3	0	0	2	0	0	3	0	0	0	1
4:45 PM	0	0	0	0	1	1	1	0	2	0	0	0
5:00 PM	0	2	0	0	0	0	2	0	0	0	0	0
5:15 PM	1	2	0	0	2	0	0	0	1	0	1	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	2	0
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0
TOTALS	**7**	**9**	**0**	**0**	**7**	**1**	**3**	**5**	**3**	**0**	**4**	**1**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-013 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Francisca Ave			Francisca Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	0	1	0					
7:00 AM	2	92	0	1	30	2	4	1	2	0	1	13	148	0	0	0	0
7:15 AM	4	131	0	7	49	2	1	0	0	0	0	14	208	0	0	0	0
7:30 AM	5	175	0	2	77	5	0	0	0	0	1	12	277	0	1	0	0
7:45 AM	4	220	1	11	77	3	1	0	0	1	1	9	328	0	0	0	0
8:00 AM	8	178	2	3	85	10	1	0	1	3	1	10	302	2	0	0	0
8:15 AM	6	141	0	2	81	8	0	0	0	1	0	4	243	0	0	0	1
8:30 AM	4	149	1	8	81	3	1	0	0	0	0	12	259	0	0	0	0
8:45 AM	12	127	0	6	83	3	0	0	0	0	0	6	237	1	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	45	1213	4	40	563	36	8	1	3	5	4	80	2002	3	1	0	1
APPROACH %'s :	3.57%	96.12%	0.32%	6.26%	88.11%	5.63%	66.67%	8.33%	25.00%	5.62%	4.49%	89.89%					

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	23	714	3	18	320	26	2	0	1	5	3	35	1150
PEAK HR FACTOR :		0.822			0.929			0.375			0.768		0.877

CONTROL : 2-Way Stop EB/WB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-013 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Francisca Ave			Francisca Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	0	1	0					
4:00 PM	3	95	0	18	123	9	2	0	1	0	0	15	266	0	0	0	0
4:15 PM	4	101	0	13	106	4	3	2	0	0	1	13	247	1	0	0	0
4:30 PM	7	91	0	9	173	2	2	1	2	0	0	11	298	1	0	0	0
4:45 PM	6	83	1	11	216	7	1	0	2	0	0	10	337	3	1	0	0
5:00 PM	5	91	0	11	204	6	4	0	0	0	0	15	336	0	1	0	0
5:15 PM	4	112	0	16	170	6	2	0	0	0	3	18	331	1	0	0	0
5:30 PM	4	110	0	14	224	4	3	0	0	0	0	17	376	0	0	0	0
5:45 PM	3	103	0	12	194	3	1	0	2	2	0	7	327	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	36	786	1	104	1410	41	18	3	7	2	4	106	2518	6	2	0	0
APPROACH %'s :	4.37%	95.50%	0.12%	6.69%	90.68%	2.64%	64.29%	10.71%	25.00%	1.79%	3.57%	94.64%					

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	19	396	1	52	814	23	10	0	2	0	3	60	1380
PEAK HR FACTOR :		0.897			0.918			0.750			0.750		0.918

CONTROL : 2-Way Stop EB/WB

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-013
N/S Street: Catalina Ave
E/W Street: Francisca Ave
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	1	0	1	1	0
7:30 AM	0	0	0	0	0	0	1	4
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	1
8:15 AM	1	0	0	0	0	0	13	0
8:30 AM	0	0	0	0	3	2	2	1
8:45 AM	0	0	0	0	2	1	1	2
TOTALS	**1**	**0**	**0**	**1**	**5**	**4**	**19**	**8**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:15 AM	0	0	1	0	0	0	0	0	0	0	0	1
7:30 AM	0	2	0	0	1	0	0	0	0	0	1	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	3	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	3	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0
TOTALS	**0**	**3**	**1**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**1**	**1**

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	1	1	1	1	2
4:15 PM	0	0	0	0	1	1	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	1	0	1	0
5:00 PM	0	0	0	0	0	2	0	2
5:15 PM	0	0	0	0	0	1	1	2
5:30 PM	0	0	0	1	1	5	1	1
5:45 PM	0	0	0	0	1	2	1	0
TOTALS	**0**	**0**	**1**	**2**	**5**	**12**	**5**	**7**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	2	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	1	0	1	0	0	0	0	0	0	0	0
4:30 PM	0	1	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
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	2	2	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:45 PM	1	0	0	0	0	0	0	0	0	0	0	1
TOTALS	**1**	**4**	**0**	**3**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**2**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-013 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Francisca Ave			Francisca Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	0	1	0					
7:00 AM	1	89	2	1	35	4	3	0	0	1	0	10	146				
7:15 AM	4	108	0	3	37	2	4	0	1	0	0	6	165				
7:30 AM	3	117	0	2	64	2	0	0	0	0	2	7	197				
7:45 AM	9	138	1	6	95	3	1	0	0	0	0	12	265				
8:00 AM	5	127	0	4	78	7	2	0	0	1	0	13	237				
8:15 AM	1	137	0	7	61	10	0	0	0	0	1	4	221				
8:30 AM	5	137	1	6	77	7	2	0	0	0	0	14	249				
8:45 AM	6	130	1	9	82	6	3	0	0	0	2	13	252				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	34	983	5	38	529	41	15	0	1	2	5	79	1732	0	0	0	0
APPROACH %'s :	3.33%	96.18%	0.49%	6.25%	87.01%	6.74%	93.75%	0.00%	6.25%	2.33%	5.81%	91.86%					
PEAK HR START TIME :	745 AM												TOTAL				
PEAK HR VOL :	20	539	2	23	311	27	5	0	0	1	1	43	972				
PEAK HR FACTOR :		0.948			0.868			0.625			0.804		0.917				

CONTROL : 2-Way Stop EB/WB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-013 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Francisca Ave			Francisca Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	0	1	0					
4:00 PM	6	134	1	22	140	2	5	0	1	0	1	17	329				
4:15 PM	2	99	0	13	167	1	1	0	0	0	0	14	297				
4:30 PM	3	114	0	10	204	7	1	0	1	1	1	11	353				
4:45 PM	5	125	0	17	162	4	2	1	2	0	0	12	330				
5:00 PM	9	95	0	14	182	5	0	0	0	1	0	17	323				
5:15 PM	12	98	1	17	204	3	2	0	0	0	2	20	359				
5:30 PM	3	104	0	10	200	5	1	0	0	0	0	13	336				
5:45 PM	2	111	2	19	204	3	3	0	1	1	0	9	355				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	42	880	4	122	1463	30	15	1	5	3	4	113	2682	0	0	0	0
APPROACH %'s :	4.54%	95.03%	0.43%	7.55%	90.59%	1.86%	71.43%	4.76%	23.81%	2.50%	3.33%	94.17%					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	26	408	3	60	790	16	6	0	1	2	2	59	1373				
PEAK HR FACTOR :		0.950			0.958			0.438			0.716		0.956				

CONTROL : 2-Way Stop EB/WB

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-013_Peds & Bikes
N/S Street: Catalina Ave
E/W Street: Francisca Ave
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	2	1	0	0	0	1	1
7:15 AM	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	2	0	0	0
8:00 AM	0	0	0	0	0	0	2	2
8:15 AM	0	0	0	1	2	1	0	0
8:30 AM	0	0	0	0	1	0	0	1
8:45 AM	0	0	1	0	1	1	0	3
TOTALS	**1**	**3**	**2**	**1**	**6**	**2**	**3**	**8**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	2	0	0	1	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	3	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	2	3	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	3	0	0	0	0	0	0		0	0	0
TOTALS	**0**	**8**	**0**	**2**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	2	0	2	0	2	0
4:15 PM	0	0	0	1	0	1	0	0
4:30 PM	0	0	0	1	0	3	0	1
4:45 PM	0	0	0	0	1	1	0	0
5:00 PM	1	0	0	0	1	1	4	1
5:15 PM	0	1	1	0	0	0	2	1
5:30 PM	0	0	0	0	0	0	3	1
5:45 PM	0	0	0	0	3	4	2	2
TOTALS	**1**	**1**	**3**	**2**	**7**	**10**	**13**	**6**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	1	0	1	0	0	0
4:15 PM	0	0	0	0	2	0	0	0	0	0	0	2
4:30 PM	0	5	0	2	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	1	1	0	0	0	0	0	0	1
5:00 PM	0	2	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	3	0	0	2	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**11**	**0**	**3**	**5**	**0**	**1**	**0**	**1**	**0**	**0**	**3**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-014 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Broadway			Broadway				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	1	2	0	0	1	0	0	1	0					
7:00 AM	0	92	0	5	33	0	0	0	0	0	1	10	141	0	1	0	0
7:15 AM	1	116	0	5	36	0	0	0	0	0	0	16	174	1	0	0	0
7:30 AM	1	151	0	9	64	0	0	0	0	0	0	25	250	1	0	0	0
7:45 AM	0	182	0	5	67	0	5	0	0	0	1	37	297	0	0	0	0
8:00 AM	0	160	1	9	73	0	2	0	0	1	0	22	268	0	0	0	0
8:15 AM	0	124	0	6	75	0	0	0	1	0	0	24	230	0	0	0	0
8:30 AM	1	117	0	9	71	0	1	0	0	1	0	18	218	1	0	0	0
8:45 AM	0	122	0	5	76	0	0	0	1	0	0	18	222	0	1	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	3	1064	1	53	495	0	8	0	2	2	2	170	1800	3	2	0	0
APPROACH %'s :	0.28%	99.63%	0.09%	9.67%	90.33%	0.00%	80.00%	0.00%	20.00%	1.15%	1.15%	97.70%					

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	617	1	29	279	0	7	0	1	1	1	108	1045
PEAK HR FACTOR :		0.850			0.939			0.400			0.724		0.880

CONTROL : 1-Way Stop WB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-014 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Broadway			Broadway				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	1	2	0	0	1	0	0	1	0					
4:00 PM	1	78	0	8	137	0	1	0	0	0	0	11	236	1	1	0	0
4:15 PM	0	87	1	7	95	0	1	0	3	0	0	8	202	0	0	0	0
4:30 PM	0	95	1	11	175	0	3	0	0	0	0	14	299	0	0	0	0
4:45 PM	0	73	0	16	178	0	4	0	1	0	0	8	280	0	0	0	0
5:00 PM	1	77	1	9	192	0	2	0	2	0	0	13	297	1	0	0	0
5:15 PM	0	100	0	4	182	0	2	0	0	0	0	8	296	0	0	0	0
5:30 PM	0	99	1	12	211	0	1	0	1	0	0	14	339	0	0	0	0
5:45 PM	0	99	1	15	171	0	1	0	0	0	0	7	294	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	2	708	5	82	1341	0	15	0	7	0	0	83	2243	2	1	0	0
APPROACH %'s :	0.28%	99.02%	0.70%	5.76%	94.24%	0.00%	68.18%	0.00%	31.82%	0.00%	0.00%	100.00%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	375	3	40	756	0	6	0	3	0	0	42	1226
PEAK HR FACTOR :		0.948			0.892			0.563			0.750		0.904

CONTROL : 1-Way Stop WB

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-014
N/S Street: Catalina Ave
E/W Street: Broadway
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	1	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	2	1	0	0
TOTALS	**0**	**0**	**0**	**1**	**2**	**1**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	2	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0
TOTALS	**0**	**1**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**4**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	1	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	2	0	0
5:00 PM	0	0	0	0	0	1	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	1	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**1**	**0**	**0**	**2**	**4**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	1	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
5:00 PM	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
5:30 PM	0	0	0	1	2	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1
TOTALS	**0**	**2**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-014 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Broadway			Broadway			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0	0	0	0	1	1	
7:00 AM	0	85	0	1	34	0	0	0	0	0	0	0	120
7:15 AM	0	101	0	0	37	0	0	0	0	0	0	0	138
7:30 AM	0	109	0	0	63	0	0	0	0	0	0	0	172
7:45 AM	0	140	0	0	92	0	0	0	0	0	0	0	232
8:00 AM	1	113	0	0	84	0	0	0	0	0	0	0	198
8:15 AM	0	123	0	3	64	0	0	0	0	0	0	0	190
8:30 AM	0	125	0	1	72	0	0	0	0	0	0	0	198
8:45 AM	0	126	0	1	80	0	0	0	0	0	0	0	207
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	922	0	6	526	0	0	0	0	0	0	0	1455
APPROACH %'s :	0.11%	99.89%	0.00%	1.13%	98.87%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	1	501	0	4	312	0	0	0	0	0	0	0	818
PEAK HR FACTOR :		0.896			0.859			0.000			0.000		0.881

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : 1-Way Stop WB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-014 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Broadway			Broadway				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	1	2	0	0	0	0	0	1	1					
4:00 PM	0	115	0	1	139	0	0	0	0	0	0	0	255				
4:15 PM	2	95	0	1	166	0	0	0	0	0	0	0	264				
4:30 PM	0	108	0	0	195	0	0	0	0	0	0	0	303				
4:45 PM	0	113	0	0	152	0	0	0	0	0	0	0	265				
5:00 PM	1	94	0	0	182	0	0	0	0	0	0	0	277				
5:15 PM	0	101	0	0	201	0	0	0	0	0	0	0	302				
5:30 PM	0	90	0	1	197	0	0	0	0	0	0	0	288				
5:45 PM	0	85	0	1	180	0	0	0	0	0	0	0	266				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	3	801	0	4	1412	0	0	0	0	0	0	0	2220	0	0	0	0
APPROACH %'s :	0.37%	99.63%	0.00%	0.28%	99.72%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!					
PEAK HR START TIME :	430 PM												TOTAL				
PEAK HR VOL :	1	416	0	0	730	0	0	0	0	0	0	0	1147				
PEAK HR FACTOR :		0.923			0.908			0.000			0.000		0.946				

CONTROL : 1-Way Stop WB

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-014_Peds & Bikes
N/S Street: Catalina Ave
E/W Street: Broadway
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	1	0	0	0	0	0	0	0
8:30 AM	0	2	0	0	0	0	0	0
8:45 AM	0	0	0	0	2	2	0	0
TOTALS	**1**	**2**	**0**	**0**	**2**	**2**	**0**	**0**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	2	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	1	1	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	4	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	1
TOTALS	**0**	**2**	**0**	**1**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**2**

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	1	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	2	0	0	0	0	0	0	0
4:30 PM	0	2	0	0	2	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:00 PM	0	2	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	3	0	0	2	0	0	0	0	0	0	0
5:30 PM	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
TOTALS	**0**	**7**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-015 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Harbor Dr			Harbor Dr			Portofino Way/Beryl St			Portofino Way/Beryl St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	1	1	1	0	1	1	0	1	1	1	
7:00 AM	2	7	10	29	6	0	0	3	1	7	4	31	100
7:15 AM	0	5	10	21	2	2	4	3	0	4	3	43	97
7:30 AM	1	8	11	26	2	1	2	7	0	6	11	71	146
7:45 AM	0	16	12	24	3	2	3	13	0	8	21	91	193
8:00 AM	0	6	7	28	6	1	1	7	0	10	11	101	178
8:15 AM	1	10	6	29	8	2	1	9	0	12	8	83	169
8:30 AM	0	6	11	23	9	4	5	10	0	9	10	68	155
8:45 AM	2	13	12	29	8	0	0	5	2	10	4	72	157
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	6	71	79	209	44	12	16	57	3	66	72	560	1195
APPROACH %'s :	3.85%	45.51%	50.64%	78.87%	16.60%	4.53%	21.05%	75.00%	3.95%	9.46%	10.32%	80.23%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	1	38	36	104	26	9	10	39	0	39	50	343	695
PEAK HR FACTOR :		0.670			0.891			0.766			0.885		0.900

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-015 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Harbor Dr			Harbor Dr			Portofino Way/Beryl St			Portofino Way/Beryl St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	1	1	1	0	1	1	0	1	1	1	
4:00 PM	2	9	14	50	25	5	3	15	5	10	16	36	190
4:15 PM	1	15	10	65	37	5	3	15	1	5	11	53	221
4:30 PM	1	9	17	81	28	8	2	18	2	14	10	39	229
4:45 PM	2	13	15	73	34	5	4	18	4	18	13	77	276
5:00 PM	3	10	13	70	22	1	1	10	1	22	8	55	216
5:15 PM	0	9	12	85	29	3	3	11	2	17	16	72	259
5:30 PM	0	4	13	76	26	8	2	15	2	16	12	74	248
5:45 PM	0	11	11	63	28	4	2	14	2	23	21	94	273
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	9	80	105	563	229	39	20	116	19	125	107	500	1912
APPROACH %'s :	4.64%	41.24%	54.12%	67.75%	27.56%	4.69%	12.90%	74.84%	12.26%	17.08%	14.62%	68.31%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	5	36	53	304	111	17	10	54	9	73	49	278	999
PEAK HR FACTOR :		0.783			0.923			0.702			0.926		0.905

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-015
N/S Street: Harbor Dr
E/W Street: Portofino Way/Beryl St
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	2	0	2	0	2	6	4
7:15 AM	0	2	0	0	1	1	4	4
7:30 AM	0	2	1	2	1	1	4	3
7:45 AM	0	1	1	1	1	2	2	9
8:00 AM	1	4	0	0	2	1	3	4
8:15 AM	1	0	0	3	1	0	7	4
8:30 AM	0	0	0	0	2	1	4	3
8:45 AM	0	2	2	0	2	0	7	5
TOTALS	**2**	**13**	**4**	**8**	**10**	**8**	**37**	**36**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	5	0	1	2	0	0	0	0	0	0	3
7:15 AM	0	14	0	0	13	0	0	0	0	0	0	1
7:30 AM	0	13	0	2	6	3	0	0	0	0	0	6
7:45 AM	0	7	0	5	5	1	0	0	2	0	0	2
8:00 AM	0	14	0	1	8	1	0	0	1	0	0	3
8:15 AM	1	8	1	13	7	0	2	0	0	1	0	0
8:30 AM	0	13	0	1	7	0	0	0	0	0	0	1
8:45 AM	0	20	1	2	12	0	0	0	0	0	0	4
TOTALS	**1**	**94**	**2**	**25**	**60**	**5**	**2**	**0**	**3**	**1**	**0**	**20**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	3	1	2	0	0	1	5
4:15 PM	1	1	1	2	1	2	3	6
4:30 PM	1	2	4	2	4	0	4	3
4:45 PM	1	2	0	1	0	0	8	7
5:00 PM	0	3	0	2	4	0	6	9
5:15 PM	1	1	4	1	5	1	3	11
5:30 PM	4	2	6	2	3	0	4	15
5:45 PM	2	5	3	5	2	1	13	11
TOTALS	**10**	**19**	**19**	**17**	**19**	**4**	**42**	**67**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	16	0	4	14	0	0	2	0	0	1	1
4:15 PM	0	18	0	1	18	0	0	0	0	0	0	2
4:30 PM	0	14	0	1	19	0	0	0	0	0	0	2
4:45 PM	0	5	2	2	14	1	0	0	0	0	0	0
5:00 PM	0	11	1	3	13	0	0	0	0	0	0	2
5:15 PM	0	9	0	4	26	1	0	2	0	0	2	4
5:30 PM	0	4	0	3	8	1	0	0	0	0	2	0
5:45 PM	0	8	0	1	27	1	2	0	0	0	0	4
TOTALS	**0**	**85**	**3**	**19**	**139**	**4**	**2**	**4**	**0**	**0**	**5**	**15**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-015 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Harbor Dr			Harbor Dr			Portofino Wa/Beryl St			Portofino Wa/Beryl St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	1	1	1	0	1	1	0	1	1	1	
7:00 AM	1	11	9	19	5	3	3	7	1	8	10	36	113
7:15 AM	2	8	7	22	7	1	7	4	2	6	9	42	117
7:30 AM	1	12	11	22	5	1	1	12	2	13	16	38	134
7:45 AM	1	9	19	34	13	2	3	24	0	20	19	70	214
8:00 AM	1	11	8	26	15	3	2	13	1	13	19	58	170
8:15 AM	1	6	16	23	13	4	2	13	0	11	15	67	171
8:30 AM	3	4	11	34	16	6	5	13	2	18	13	55	180
8:45 AM	2	13	14	35	23	1	3	14	3	28	17	71	224
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	12	74	95	215	97	21	26	100	11	117	118	437	1323
APPROACH %'s :	6.63%	40.88%	52.49%	64.56%	29.13%	6.31%	18.98%	72.99%	8.03%	17.41%	17.56%	65.03%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	7	34	49	118	67	14	12	53	6	70	64	251	745
PEAK HR FACTOR :		0.776			0.843			0.888			0.830		0.831

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-015 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Harbor Dr			Harbor Dr			Portofino Wa/Beryl St			Portofino Wa/Beryl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	1	1	1	1	0	1	1	0	1	1	1					
4:00 PM	3	21	15	64	36	5	4	34	8	21	25	59	295				
4:15 PM	2	20	17	68	39	4	5	16	6	49	25	69	320				
4:30 PM	1	18	34	69	46	10	7	39	9	54	32	72	391				
4:45 PM	4	19	33	61	47	9	2	31	4	39	24	72	345				
5:00 PM	6	15	29	68	44	9	6	30	6	39	28	75	355				
5:15 PM	0	16	29	76	49	11	6	13	5	50	34	81	370				
5:30 PM	6	16	29	78	45	8	5	19	6	45	26	65	348				
5:45 PM	0	23	29	70	39	12	7	12	4	31	31	64	322				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	22	148	215	554	345	68	42	194	48	328	225	557	2746	0	0	0	0
APPROACH %'s :	5.71%	38.44%	55.84%	57.29%	35.68%	7.03%	14.79%	68.31%	16.90%	29.55%	20.27%	50.18%					

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	11	68	125	274	186	39	21	113	24	182	118	300	1461
PEAK HR FACTOR :		0.911			0.917			0.718			0.909		0.934

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-015_Peds & Bikes
N/S Street: Harbor Dr
E/W Street: Portofino Wa/Beryl St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	0	1	2	1	1	6	3
7:15 AM	0	2	1	0	5	0	3	6
7:30 AM	0	1	1	0	2	0	1	7
7:45 AM	0	4	2	1	2	3	7	1
8:00 AM	2	2	0	1	3	3	1	5
8:15 AM	2	1	1	2	1	1	3	0
8:30 AM	0	0	0	2	0	0	8	3
8:45 AM	0	7	2	0	7	0	4	5
TOTALS	**5**	**17**	**8**	**8**	**21**	**8**	**33**	**30**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	15	0	0	7	0	0	0	0	0	0	0
7:15 AM	0	8	0	0	3	0	0	0	0	0	0	2
7:30 AM	1	10	0	1	4	3	1	0	0	0	2	3
7:45 AM	0	7	0	1	9	0	3	0	1	1	1	1
8:00 AM	0	15	0	3	5	0	3	1	0	0	0	1
8:15 AM	1	15	0	1	2	4	1	0	2	1	1	1
8:30 AM	0	11	0	0	17	0	3	0	0	0	0	0
8:45 AM	0	22	0	1	10	0	0	1	0	0	1	2
TOTALS	**2**	**103**	**0**	**7**	**57**	**7**	**11**	**2**	**3**	**2**	**5**	**10**

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	11	4	8	10	12	5	9	7
4:15 PM	8	4	7	2	2	4	3	14
4:30 PM	2	7	7	4	1	1	8	10
4:45 PM	2	3	4	7	6	4	3	10
5:00 PM	6	10	2	15	2	11	7	4
5:15 PM	10	5	3	8	3	10	3	8
5:30 PM	6	1	5	11	4	0	6	10
5:45 PM	3	14	8	6	7	1	0	11
TOTALS	**48**	**48**	**44**	**63**	**37**	**36**	**39**	**74**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	14	0	3	16	2	0	1	2	0	0	2
4:15 PM	0	20	1	7	21	0	0	0	0	1	2	5
4:30 PM	1	27	7	0	21	0	2	1	0	2	0	0
4:45 PM	0	13	0	3	29	0	0	2	0	0	0	2
5:00 PM	0	15	1	5	19	3	0	0	1	0	0	1
5:15 PM	0	16	1	3	25	4	3	0	0	0	0	1
5:30 PM	0	15	3	4	34	7	0	3	3	1	0	3
5:45 PM	0	25	0	5	29	0	0	0	2	2	5	2
TOTALS	**1**	**145**	**13**	**30**	**194**	**16**	**5**	**7**	**8**	**6**	**7**	**16**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-016 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Beryl St			Beryl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	2	2	0	0	2	0	1	1	1	1	1	1					
7:00 AM	26	81	3	0	26	5	8	8	25	4	13	1	200				
7:15 AM	34	123	3	0	31	6	2	11	19	5	7	1	242				
7:30 AM	61	147	12	0	48	11	8	12	25	2	23	0	349				
7:45 AM	82	163	16	0	54	17	13	12	27	11	23	3	421				
8:00 AM	83	150	7	0	59	14	4	11	32	5	26	3	394				
8:15 AM	59	117	7	0	58	19	5	9	26	6	27	1	334				
8:30 AM	56	110	9	0	59	10	10	11	26	1	22	2	316				
8:45 AM	64	114	12	0	64	16	7	13	28	7	9	1	335				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	465	1005	69	0	399	98	57	87	208	41	150	12	2591	0	0	0	0
APPROACH %'s :	30.21%	65.30%	4.48%	0.00%	80.28%	19.72%	16.19%	24.72%	59.09%	20.20%	73.89%	5.91%					

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	285	577	42	0	219	61	30	44	110	24	99	7	1498
PEAK HR FACTOR :		0.866			0.909			0.885			0.878		0.890

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-016 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Beryl St			Beryl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	2	2	0	0	2	0	1	1	1	1	1	1					
4:00 PM	31	64	3	0	126	10	14	24	42	9	18	0	341				
4:15 PM	39	80	11	0	90	9	8	26	49	8	19	1	340				
4:30 PM	31	80	15	0	159	15	12	32	71	5	21	4	445				
4:45 PM	66	64	7	0	159	16	11	31	72	16	29	1	472				
5:00 PM	54	80	7	0	186	12	4	30	61	18	26	1	479				
5:15 PM	53	89	12	0	162	18	6	25	69	8	28	2	472				
5:30 PM	60	87	3	0	191	23	12	21	69	7	23	1	497				
5:45 PM	79	93	8	0	144	22	10	23	63	8	34	0	484				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	413	637	66	0	1217	125	77	212	496	79	198	10	3530	0	0	0	0
APPROACH %'s :	37.01%	57.08%	5.91%	0.00%	90.69%	9.31%	9.81%	27.01%	63.18%	27.53%	68.99%	3.48%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	246	349	30	0	683	75	32	99	262	41	111	4	1932
PEAK HR FACTOR :		0.868			0.886			0.963			0.867		0.972

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-016
N/S Street: Catalina Ave
E/W Street: Beryl St
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	5	0	0	1	0	0	1
7:15 AM	2	3	0	0	0	0	2	0
7:30 AM	0	0	1	1	0	0	0	0
7:45 AM	3	3	1	0	1	0	2	2
8:00 AM	4	1	0	0	0	0	15	1
8:15 AM	5	1	0	0	0	0	2	1
8:30 AM	4	6	0	1	0	0	0	0
8:45 AM	3	3	0	0	2	0	2	4
TOTALS	**22**	**22**	**2**	**2**	**4**	**0**	**23**	**9**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	4	0	0	0	1	0	0	0	1	0	1	0
7:15 AM	2	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	3	0	0	0	0	0	0	1	1	0	2	0
7:45 AM	1	1	0	0	0	1	0	1	5	0	1	0
8:00 AM	2	0	0	0	0	1	0	0	1	0	1	0
8:15 AM	1	1	0	0	2	0	0	3	11	0	1	0
8:30 AM	1	0	0	0	1	0	0	1	1	0	0	0
8:45 AM	5	0	0	0	1	0	0	1	2	0	0	0
TOTALS	**19**	**2**	**0**	**0**	**5**	**2**	**0**	**7**	**22**	**0**	**6**	**0**

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	3	0	1	0	0	0	0
4:15 PM	5	1	0	0	1	0	3	3
4:30 PM	4	9	0	0	7	2	3	5
4:45 PM	1	5	1	0	0	1	0	0
5:00 PM	1	2	1	0	1	1	0	0
5:15 PM	1	1	0	0	1	1	0	1
5:30 PM	2	3	0	1	4	2	0	1
5:45 PM	1	2	0	1	0	0	2	1
TOTALS	**16**	**26**	**2**	**3**	**14**	**7**	**8**	**11**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	1	1	0	0	0	0	0	5	2	0	1	0
4:15 PM	1	0	0	0	0	0	0	0	1	0	1	0
4:30 PM	1	1	0	0	0	0	0	0	0	0	1	0
4:45 PM	1	0	0	0	0	0	0	1	2	0	0	0
5:00 PM	1	0	1	0	0	0	0	0	4	0	2	0
5:15 PM	0	0	0	0	0	0	0	4	0	0	7	0
5:30 PM	0	0	1	0	0	0	0	2	1	0	2	0
5:45 PM	3	0	0	0	0	0	0	0	2	0	1	0
TOTALS	**8**	**2**	**2**	**0**	**0**	**0**	**0**	**12**	**12**	**0**	**15**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-016 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Beryl St			Beryl St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	0	2	0	1	1	1	1	1	1	
7:00 AM	27	68	0	0	24	10	8	11	16	2	17	7	190
7:15 AM	34	93	4	0	28	9	7	11	16	3	15	1	221
7:30 AM	33	101	12	0	46	17	9	8	27	5	19	1	278
7:45 AM	59	117	6	1	64	26	17	21	41	6	25	8	391
8:00 AM	42	100	7	0	59	24	7	13	29	6	21	8	316
8:15 AM	61	110	5	0	51	13	7	20	27	5	22	4	325
8:30 AM	51	118	11	0	55	17	6	18	33	7	20	2	338
8:45 AM	54	112	10	0	53	27	7	19	38	6	34	6	366
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	361	819	55	1	380	143	68	121	227	40	173	37	2425
APPROACH %'s :	29.23%	66.32%	4.45%	0.19%	72.52%	27.29%	16.35%	29.09%	54.57%	16.00%	69.20%	14.80%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	213	445	29	1	229	80	37	72	130	24	88	22	1370
PEAK HR FACTOR :		0.944			0.852			0.756			0.859		0.876

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-016 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Beryl St			Beryl St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	0	2	0	1	1	1	1	1	1	
4:00 PM	54	89	12	0	120	20	18	35	57	13	34	6	458
4:15 PM	60	79	7	1	130	35	12	26	62	9	45	4	470
4:30 PM	63	87	15	0	152	44	10	44	84	8	49	8	564
4:45 PM	66	90	13	0	126	26	15	42	71	6	45	6	506
5:00 PM	58	78	15	0	145	37	17	43	68	10	43	2	516
5:15 PM	75	84	18	3	154	43	11	27	77	13	44	3	552
5:30 PM	59	72	8	0	154	43	14	38	75	9	37	6	515
5:45 PM	63	73	6	0	157	23	10	35	64	10	38	3	482
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	498	652	94	4	1138	271	107	290	558	78	335	38	4063
APPROACH %'s :	40.03%	52.41%	7.56%	0.28%	80.54%	19.18%	11.20%	30.37%	58.43%	17.29%	74.28%	8.43%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	262	339	61	3	577	150	53	156	300	37	181	19	2138
PEAK HR FACTOR :		0.935			0.913			0.922			0.912		0.948

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-016_Peds & Bikes
N/S Street: Catalina Ave
E/W Street: Beryl St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	3	2	1	0	0	2	0	2
7:15 AM	2	3	0	0	0	0	0	1
7:30 AM	5	1	0	0	2	0	0	0
7:45 AM	3	5	0	0	1	0	1	0
8:00 AM	5	1	0	0	0	1	4	1
8:15 AM	2	2	0	0	0	0	1	1
8:30 AM	5	2	0	0	0	3	0	1
8:45 AM	5	4	1	1	2	1	2	0
TOTALS	**30**	**20**	**2**	**1**	**5**	**7**	**8**	**6**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	3	1	0	0	1	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	1	0
7:30 AM	1	0	0	0	0	0	0	0	1	1	4	0
7:45 AM	0	0	0	0	0	0	0	0	2	0	2	0
8:00 AM	1	1	0	0	0	0	0	1	0	0	1	0
8:15 AM	1	0	0	0	2	1	0	0	1	0	1	0
8:30 AM	1	1	0	0	0	0	0	0	0	0	2	0
8:45 AM	3	1	0	0	0	0	0	1	0	0	0	0
TOTALS	**10**	**4**	**0**	**0**	**4**	**1**	**0**	**2**	**4**	**1**	**12**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	2	6	1	1	3	0	2	0
4:15 PM	1	6	0	0	1	1	1	2
4:30 PM	18	8	1	0	2	2	12	1
4:45 PM	4	1	0	0	0	2	0	0
5:00 PM	6	3	0	0	0	0	4	0
5:15 PM	2	8	0	0	1	0	2	3
5:30 PM	4	3	0	0	1	1	0	0
5:45 PM	5	9	0	2	0	1	5	1
TOTALS	**42**	**44**	**2**	**3**	**8**	**7**	**26**	**7**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	1	0	0	5	0	0	1	0
4:15 PM	1	0	0	1	0	2	0	4	4	1	5	1
4:30 PM	0	2	2	0	0	1	0	2	1	0	2	0
4:45 PM	1	0	0	0	0	0	0	5	0	0	4	0
5:00 PM	0	1	0	0	0	0	1	2	0	1	3	0
5:15 PM	1	3	0	0	3	0	0	2	0	0	0	0
5:30 PM	1	0	0	0	0	0	0	8	2	0	6	0
5:45 PM	4	1	0	0	0	1	0	6	0	0	7	0
TOTALS	**8**	**7**	**2**	**1**	**4**	**4**	**1**	**34**	**7**	**2**	**28**	**1**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-017 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Broadway			Broadway			Beryl St			Beryl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	0	1	0	1	1	0	1	1	0					
7:00 AM	2	10	7	0	3	0	0	8	3	5	15	1	54				
7:15 AM	4	17	7	0	5	0	0	14	0	1	9	0	57				
7:30 AM	4	25	11	0	9	0	0	22	2	3	21	1	98				
7:45 AM	8	34	15	0	7	0	1	23	2	4	28	6	128				
8:00 AM	6	23	12	0	7	1	0	18	0	7	32	2	108				
8:15 AM	4	20	8	2	5	1	0	13	2	1	24	2	82				
8:30 AM	1	16	14	0	7	1	1	20	0	3	20	4	87				
8:45 AM	3	18	12	2	3	0	0	23	0	5	15	5	86				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	32	163	86	4	46	3	2	141	9	29	164	21	700	0	0	0	0
APPROACH %'s :	11.39%	58.01%	30.60%	7.55%	86.79%	5.66%	1.32%	92.76%	5.92%	13.55%	76.64%	9.81%					

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	22	102	46	2	28	2	1	76	6	15	105	11	416
PEAK HR FACTOR :		0.746			0.889			0.798			0.799		0.813

CONTROL : 2-Way Stop NB/SB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-017 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Broadway			Broadway			Beryl St			Beryl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	0	1	0	1	1	0	1	1	0					
4:00 PM	2	11	12	0	7	0	0	29	1	5	26	2	95				
4:15 PM	3	5	3	2	7	1	0	33	1	4	25	2	86				
4:30 PM	3	13	4	4	9	3	0	45	2	8	27	1	119				
4:45 PM	2	7	4	7	10	0	0	28	2	6	43	0	109				
5:00 PM	1	9	7	3	11	0	0	33	2	8	41	1	116				
5:15 PM	3	7	7	1	5	0	1	37	2	15	34	1	113				
5:30 PM	3	12	8	2	12	1	0	22	2	5	28	0	95				
5:45 PM	3	6	5	2	15	0	0	31	0	5	43	1	111				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	20	70	50	21	76	5	1	258	12	56	267	8	844	0	0	0	0
APPROACH %'s :	14.29%	50.00%	35.71%	20.59%	74.51%	4.90%	0.37%	95.20%	4.43%	16.92%	80.66%	2.42%					

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	9	36	22	15	35	3	1	143	8	37	145	3	457
PEAK HR FACTOR :		0.838			0.779			0.809			0.925		0.960

CONTROL : 2-Way Stop NB/SB

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-017
N/S Street: Broadway
E/W Street: Beryl St
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	3	1	3	0	0	0	1
7:15 AM	2	3	0	0	1	1	0	0
7:30 AM	0	0	2	1	0	0	1	0
7:45 AM	3	1	1	1	0	0	0	0
8:00 AM	3	1	3	0	0	0	0	0
8:15 AM	3	2	0	0	0	1	1	0
8:30 AM	3	6	2	1	0	1	0	1
8:45 AM	5	2	1	2	1	0	1	0
TOTALS	**19**	**18**	**10**	**8**	**2**	**3**	**3**	**2**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	1	0	0	0	0	0	0	0	2	0
7:45 AM	1	2	0	0	0	0	0	0	1	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0
8:15 AM	1	0	0	0	0	0	0	1	2	0	0	0
8:30 AM	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
TOTALS	**2**	**3**	**1**	**0**	**0**	**0**	**0**	**1**	**3**	**0**	**4**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	1	0	1	1	0	0	1
4:15 PM	3	1	1	0	0	0	0	1
4:30 PM	2	2	0	1	0	1	1	0
4:45 PM	0	2	2	2	0	0	1	1
5:00 PM	1	0	1	0	0	0	0	0
5:15 PM	0	0	2	0	0	0	0	0
5:30 PM	2	0	0	1	0	0	0	0
5:45 PM	1	2	0	3	0	1	1	0
TOTALS	**10**	**8**	**6**	**8**	**1**	**2**	**3**	**3**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	4	0	0	2	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	1	0
4:30 PM	1	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
5:00 PM	2	0	0	0	0	0	0	1	0	0	0	0
5:15 PM	4	0	0	1	0	0	1	1	2	0	3	0
5:30 PM	0	0	0	0	0	0	0	3	0	1	0	0
5:45 PM	0	1	0	0	0	0	0	0	0	0	1	0
TOTALS	**7**	**2**	**0**	**1**	**0**	**0**	**1**	**9**	**2**	**1**	**7**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-017 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Broadway			Broadway			Beryl St			Beryl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	0	1	1	0	1	0	0	1	0					
7:00 AM	6	1	9	0	1	0	0	10	1	1	19	1	49				
7:15 AM	3	0	7	1	0	0	0	16	1	1	16	2	47				
7:30 AM	2	0	18	0	0	0	0	16	4	4	25	1	70				
7:45 AM	10	0	21	0	0	0	1	23	2	6	30	1	94				
8:00 AM	8	0	17	1	0	0	0	16	6	7	29	2	86				
8:15 AM	4	0	14	0	0	0	0	25	0	2	27	1	73				
8:30 AM	4	0	21	0	0	0	0	27	2	4	26	0	84				
8:45 AM	8	0	17	4	1	0	1	27	2	5	39	1	105				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	45	1	124	6	2	0	2	160	18	30	211	9	608	0	0	0	0
APPROACH %'s :	26.47%	0.59%	72.94%	75.00%	25.00%	0.00%	1.11%	88.89%	10.00%	12.00%	84.40%	3.60%					

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	24	0	69	5	1	0	1	95	10	18	121	4	348
PEAK HR FACTOR :		0.930			0.300			0.883			0.794		0.829

CONTROL : 2-Way Stop NB/SB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-017 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Broadway			Broadway			Beryl St			Beryl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	0	1	1	0	1	0	0	1	0					
4:00 PM	8	2	17	1	1	0	1	42	2	6	44	2	126				
4:15 PM	9	2	5	2	2	4	1	30	5	2	48	3	113				
4:30 PM	5	1	18	1	2	5	3	53	1	11	53	3	156				
4:45 PM	7	2	9	2	0	0	1	51	2	5	52	1	132				
5:00 PM	0	1	9	2	0	2	0	52	5	13	50	2	136				
5:15 PM	11	1	18	1	2	0	1	41	5	8	51	1	140				
5:30 PM	3	1	11	2	2	1	1	41	5	12	50	0	129				
5:45 PM	4	0	17	0	0	1	1	40	1	11	45	2	122				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	47	10	104	11	9	13	9	350	26	68	393	14	1054	0	0	0	0
APPROACH %'s :	29.19%	6.21%	64.60%	33.33%	27.27%	39.39%	2.34%	90.91%	6.75%	14.32%	82.74%	2.95%					

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	23	5	54	6	4	7	5	197	13	37	206	7	564
PEAK HR FACTOR :		0.683			0.531			0.943			0.933		0.904

CONTROL : 2-Way Stop NB/SB

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-017_Peds &
N/S Street: Broadway
E/W Street: Beryl St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	7	7	0	1	6	5	1	0
7:15 AM	8	6	1	0	2	4	0	1
7:30 AM	1	3	0	0	2	4	0	1
7:45 AM	1	3	0	0	3	3	3	1
8:00 AM	5	4	0	0	0	5	0	2
8:15 AM	5	2	0	0	5	4	1	0
8:30 AM	5	4	0	1	2	5	1	0
8:45 AM	5	4	2	0	2	3	1	1
TOTALS	**37**	**33**	**3**	**2**	**22**	**33**	**7**	**6**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	1	0	0	0	0	0
7:30 AM	0	4	0	0	0	0	1	0	0	0	0	0
7:45 AM	0	2	0	0	0	0	0	1	1	0	1	0
8:00 AM	1	0	0	0	1	0	1	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	1	1	0	0	0	0
8:30 AM	0	0	0	0	0	0	2	0	2	0	0	0
8:45 AM	0	0	0	0	1	0	0	1	0	0	0	0
TOTALS	**1**	**7**	**0**	**0**	**2**	**0**	**6**	**3**	**3**	**0**	**1**	**0**

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	2	2	3	1
4:15 PM	1	1	0	0	5	0	0	0
4:30 PM	1	11	1	0	4	4	1	9
4:45 PM	1	1	0	0	1	0	0	0
5:00 PM	1	0	0	0	2	8	1	0
5:15 PM	1	1	1	0	5	1	2	2
5:30 PM	0	1	0	0	2	1	0	1
5:45 PM	1	1	1	0	7	3	2	2
TOTALS	**6**	**16**	**3**	**0**	**28**	**19**	**9**	**15**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	0	5	0	0	0	0	0	0	0
4:15 PM	0	4	0	0	2	2	3	0	1	0	0	0
4:30 PM	0	2	0	0	2	0	1	0	0	0	0	0
4:45 PM	0	3	0	0	4	1	0	0	0	0	0	0
5:00 PM	0	2	0	0	3	0	1	0	0	0	0	0
5:15 PM	0	1	0	0	2	0	0	0	0	0	0	0
5:30 PM	0	4	0	2	4	2	0	0	0	0	0	0
5:45 PM	0	7	0	1	2	1	2	0	1	0	0	0
TOTALS	**0**	**24**	**0**	**3**	**24**	**6**	**7**	**0**	**2**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-018 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Francisca Ave			Francisca Ave			Beryl St			Beryl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	0	1	0	1	1	0	1	1	0					
7:00 AM	1	2	7	1	1	1	0	23	1	4	18	5	64				
7:15 AM	1	6	12	3	7	0	0	19	1	7	11	5	72				
7:30 AM	2	4	7	0	0	0	0	33	2	4	18	2	72				
7:45 AM	4	3	5	7	9	5	2	34	3	7	31	5	115				
8:00 AM	2	2	3	2	0	2	4	43	2	11	36	4	111				
8:15 AM	2	2	7	1	2	0	0	24	1	12	26	4	81				
8:30 AM	4	1	16	7	4	3	4	30	6	11	29	6	121				
8:45 AM	3	3	7	1	1	3	2	31	8	14	24	2	99				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	19	23	64	22	24	14	12	237	24	70	193	33	735	0	0	0	0
APPROACH %'s :	17.92%	21.70%	60.38%	36.67%	40.00%	23.33%	4.40%	86.81%	8.79%	23.65%	65.20%	11.15%					

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	12	8	31	17	15	10	10	131	12	41	122	19	428
PEAK HR FACTOR :		0.607			0.500			0.781			0.892		0.884

CONTROL : 2-Way Stop NB/SB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-018 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Francisca Ave			Francisca Ave			Beryl St			Beryl St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	1	0	1	1	0	
4:00 PM	4	12	28	5	8	1	1	35	12	17	33	4	160
4:15 PM	3	9	27	4	6	1	1	37	9	10	34	4	145
4:30 PM	1	6	27	6	5	2	2	50	3	17	37	6	162
4:45 PM	5	3	19	3	4	0	1	38	10	20	49	3	155
5:00 PM	1	7	26	8	5	2	3	40	9	9	44	6	160
5:15 PM	6	9	31	3	8	3	1	41	6	24	45	9	186
5:30 PM	6	13	36	5	5	0	1	28	6	23	35	5	163
5:45 PM	7	5	23	5	9	0	1	34	5	24	42	3	158
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	33	64	217	39	50	9	11	303	60	144	319	40	1289
APPROACH %'s :	10.51%	20.38%	69.11%	39.80%	51.02%	9.18%	2.94%	81.02%	16.04%	28.63%	63.42%	7.95%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	20	34	116	21	27	5	6	143	26	80	166	23	667
PEAK HR FACTOR :		0.773			0.883			0.841			0.862		0.897

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : 2-Way Stop NB/SB

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-018
N/S Street: Francisca Ave
E/W Street: Beryl St
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	1	0	1	0	1	0	0
7:15 AM	1	0	0	4	0	0	2	0
7:30 AM	0	0	1	1	1	1	0	2
7:45 AM	2	1	1	1	1	0	2	0
8:00 AM	1	0	0	0	0	0	3	1
8:15 AM	1	2	1	3	0	1	3	0
8:30 AM	3	5	0	1	0	0	1	0
8:45 AM	3	2	1	2	1	3	1	4
TOTALS	**11**	**11**	**4**	**13**	**3**	**6**	**12**	**7**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	1	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	3	2	0
7:45 AM	0	0	0	1	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	1	0	1	0	0
8:30 AM	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
TOTALS	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**5**	**4**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	1	0	1	1	1	1
4:15 PM	2	1	1	2	1	1	1	2
4:30 PM	2	1	1	0	1	0	2	2
4:45 PM	1	4	0	4	2	2	0	1
5:00 PM	3	2	1	0	1	0	1	2
5:15 PM	0	2	0	1	0	0	2	0
5:30 PM	0	0	3	7	0	2	0	0
5:45 PM	5	1	2	3	2	2	2	1
TOTALS	**13**	**11**	**9**	**17**	**8**	**8**	**9**	**9**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	2	0	0	0	0	0	0	0	1	0	0	0
4:15 PM	1	0	0	0	0	0	0	2	0	0	0	0
4:30 PM	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
5:00 PM	0	0	0	0	0	0	0	3	0	1	0	0
5:15 PM	0	0	0	0	0	1	0	1	0	0	3	0
5:30 PM	0	0	0	0	0	0	0	0	3	0	1	0
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0
TOTALS	**3**	**0**	**0**	**0**	**0**	**1**	**1**	**6**	**4**	**1**	**4**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-018 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Francisca Ave			Francisca Ave			Beryl St			Beryl St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
7:00 AM	0	1	4	0	1	0	0	16	0	1	21	2	46
7:15 AM	0	2	1	2	1	0	0	15	6	5	20	1	53
7:30 AM	2	0	3	4	2	0	1	26	1	7	25	5	76
7:45 AM	1	3	7	4	3	0	3	33	3	12	33	5	107
8:00 AM	3	2	9	3	2	1	0	23	1	11	29	6	90
8:15 AM	2	1	14	2	4	1	0	29	4	13	27	3	100
8:30 AM	2	5	16	2	4	1	4	27	5	17	29	3	115
8:45 AM	2	5	14	4	3	3	3	37	8	11	41	5	136
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	12	19	68	21	20	6	11	206	28	77	225	30	723
APPROACH %'s :	12.12%	19.19%	68.69%	44.68%	42.55%	12.77%	4.49%	84.08%	11.43%	23.19%	67.77%	9.04%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	9	13	53	11	13	6	7	116	18	52	126	17	441
PEAK HR FACTOR :		0.815			0.750			0.734			0.855		0.811

UTURNS			
NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : 2-Way Stop NB/SB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-018 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Francisca Ave			Francisca Ave			Beryl St			Beryl St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
4:00 PM	6	9	23	8	5	3	5	54	7	16	47	4	187
4:15 PM	4	3	27	2	8	3	2	37	5	20	48	10	169
4:30 PM	7	3	28	1	6	3	2	61	9	19	61	7	207
4:45 PM	3	9	25	4	16	1	0	54	8	21	57	5	203
5:00 PM	14	7	26	3	5	2	5	48	9	16	52	4	191
5:15 PM	4	9	44	7	7	5	6	51	4	13	49	5	204
5:30 PM	7	4	32	5	5	1	3	42	3	11	60	5	178
5:45 PM	5	6	27	11	6	2	0	50	7	18	51	2	185
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	50	50	232	41	58	20	23	397	52	134	425	42	1524
APPROACH %'s :	15.06%	15.06%	69.88%	34.45%	48.74%	16.81%	4.87%	84.11%	11.02%	22.30%	70.72%	6.99%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	28	28	123	15	34	11	13	214	30	69	219	21	805
PEAK HR FACTOR :		0.785			0.714			0.892			0.888		0.972

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : 2-Way Stop NB/SB

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-018_Peds & Bikes
N/S Street: Francisca Ave
E/W Street: Beryl St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	2	1	2	0	0	0	0
7:15 AM	0	0	0	1	0	0	2	0
7:30 AM	3	1	0	0	0	1	0	2
7:45 AM	1	2	0	2	0	2	1	1
8:00 AM	2	1	1	0	4	0	0	0
8:15 AM	4	1	0	4	1	2	5	0
8:30 AM	0	0	0	2	0	1	1	2
8:45 AM	0	1	0	1	0	2	14	1
TOTALS	**12**	**8**	**2**	**12**	**5**	**8**	**23**	**6**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	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
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:15 AM	0	0	0	0	0	2	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**1**	**1**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	2	3	3	0	0	1	1
4:15 PM	1	0	0	0	0	0	2	0
4:30 PM	1	2	0	2	1	1	0	4
4:45 PM	0	1	0	0	0	0	1	2
5:00 PM	6	1	1	2	5	1	1	1
5:15 PM	1	3	1	0	0	0	1	1
5:30 PM	0	3	0	3	1	1	1	0
5:45 PM	1	2	1	3	1	2	2	1
TOTALS	**10**	**14**	**6**	**13**	**8**	**5**	**9**	**10**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	1	0	0	0	0	5	1	0	0	0
4:15 PM	1	0	1	0	0	0	2	0	1	0	2	0
4:30 PM	0	0	1	0	3	0	0	3	0	0	0	0
4:45 PM	2	0	0	0	1	0	0	0	4	0	1	1
5:00 PM	0	1	0	0	0	0	0	2	0	0	2	0
5:15 PM	0	0	0	0	0	0	0	1	1	0	2	0
5:30 PM	1	1	0	0	0	0	0	2	2	0	1	0
5:45 PM	0	1	0	0	0	0	0	0	0	0	5	0
TOTALS	**4**	**3**	**3**	**0**	**4**	**0**	**2**	**13**	**9**	**0**	**13**	**1**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-019 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Beryl St			Beryl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	1	0	1	1	0					
7:00 AM	9	441	0	3	162	5	14	11	4	5	15	7	676				
7:15 AM	4	487	10	2	228	11	9	18	7	8	10	3	797				
7:30 AM	9	430	7	3	285	1	10	23	3	13	18	6	808				
7:45 AM	9	367	20	8	282	4	7	30	4	13	31	12	787				
8:00 AM	17	368	8	6	240	9	5	38	9	17	31	7	755				
8:15 AM	14	339	8	5	242	11	5	17	7	12	25	4	689				
8:30 AM	14	388	6	3	225	7	14	29	11	14	31	8	750				
8:45 AM	9	405	8	11	280	10	10	20	3	19	25	7	807				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	85	3225	67	41	1944	58	74	186	48	101	186	54	6069	0	0	0	0
APPROACH %'s :	2.52%	95.50%	1.98%	2.01%	95.15%	2.84%	24.03%	60.39%	15.58%	29.62%	54.55%	15.84%					
PEAK HR START TIME :	715 AM												TOTAL				
PEAK HR VOL :	39	1652	45	19	1035	25	31	109	23	51	90	28	3147				
PEAK HR FACTOR :		0.866			0.918			0.784			0.754		0.974				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-019 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Beryl St			Beryl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	1	0	1	1	0					
4:00 PM	4	269	14	9	366	11	25	36	8	16	44	10	812				
4:15 PM	5	264	8	3	174	6	21	39	13	17	37	7	594				
4:30 PM	8	309	14	8	323	11	21	54	8	18	40	11	825				
4:45 PM	8	261	11	12	443	13	14	38	12	12	50	6	880				
5:00 PM	5	342	17	12	472	17	19	48	19	13	47	9	1020				
5:15 PM	14	294	11	9	470	18	24	45	10	23	42	9	969				
5:30 PM	6	274	12	8	466	17	28	30	12	13	44	10	920				
5:45 PM	12	299	6	12	475	13	13	32	13	11	40	13	939				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	62	2312	93	73	3189	106	165	322	95	123	344	75	6959	0	0	0	0
APPROACH %'s :	2.51%	93.72%	3.77%	2.17%	94.69%	3.15%	28.35%	55.33%	16.32%	22.69%	63.47%	13.84%					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	37	1209	46	41	1883	65	84	155	54	60	173	41	3848				
PEAK HR FACTOR :		0.887			0.993			0.852			0.926		0.943				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-019
N/S Street: Pacific Coast Hwy
E/W Street: Beryl St
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	1	0	0	0
7:15 AM	0	1	1	2	1	0	0	1
7:30 AM	0	0	3	1	0	0	0	1
7:45 AM	0	2	6	0	2	0	0	6
8:00 AM	0	0	0	1	0	0	0	0
8:15 AM	0	3	2	1	2	0	0	1
8:30 AM	1	5	1	0	1	0	0	0
8:45 AM	2		1	3	0	0	0	2
TOTALS	**3**	**11**	**14**	**8**	**7**	**0**	**0**	**11**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	2	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	1	0	0	0	0	0	4	0
7:45 AM	0	0	0	0	0	0	0	0	1	0	1	0
8:00 AM	0	1	0	0	0	0	0	0	0	0	1	1
8:15 AM	0	0	0	0	0	1	0	1	0	0	0	0
8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**5**	**0**	**0**	**3**	**1**	**0**	**1**	**1**	**0**	**7**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	1	2	0	2	2	3	2
4:15 PM	0	0	0	0	1	0	0	0
4:30 PM	1	0	1	1	1	1	0	0
4:45 PM	0	4	2	4	2	0	2	2
5:00 PM	2	0	2	1	0	2	3	0
5:15 PM	0	1	0	1	1	1	4	0
5:30 PM	3	2	1	4	1	2	4	2
5:45 PM	3	0	1	2	6	1	1	1
TOTALS	**10**	**8**	**9**	**13**	**14**	**9**	**17**	**7**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	1	0	0	1	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	1	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	1	1	1	3	0	0	0	0
5:15 PM	0	2	0	0	0	0	1	1	0	0	3	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0
TOTALS	**0**	**4**	**0**	**0**	**3**	**1**	**2**	**7**	**0**	**0**	**3**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-019 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Beryl St			Beryl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	1	0	1	1	0					
7:00 AM	7	352	8	1	150	5	10	6	3	7	14	4	567				
7:15 AM	8	419	7	2	182	5	11	7	2	9	13	6	671				
7:30 AM	10	408	5	3	202	5	12	12	7	6	24	6	700				
7:45 AM	13	413	10	6	249	8	17	19	7	12	31	7	792				
8:00 AM	12	373	7	5	214	7	10	12	7	10	31	7	695				
8:15 AM	13	386	9	3	253	10	13	25	7	10	26	6	761				
8:30 AM	11	385	9	8	240	10	15	21	4	7	29	9	748				
8:45 AM	9	386	7	4	297	15	22	21	11	10	35	6	823				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	83	3122	62	32	1787	65	110	123	48	71	203	51	5757	0	0	0	0
APPROACH %'s :	2.54%	95.56%	1.90%	1.70%	94.85%	3.45%	39.15%	43.77%	17.08%	21.85%	62.46%	15.69%					
PEAK HR START TIME :	800 AM												TOTAL				
PEAK HR VOL :	45	1530	32	20	1004	42	60	79	29	37	121	28	3027				
PEAK HR FACTOR :		0.985			0.843			0.778			0.912		0.920				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-019 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Beryl St			Beryl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	1	0	1	1	0					
4:00 PM	11	261	19	9	385	21	29	42	16	12	44	11	860				
4:15 PM	16	283	20	9	424	18	25	31	9	15	45	9	904				
4:30 PM	12	289	4	11	418	29	28	56	12	12	46	10	927				
4:45 PM	12	283	13	8	417	22	17	52	17	17	50	11	919				
5:00 PM	5	286	15	5	421	17	23	50	23	17	46	9	917				
5:15 PM	10	299	18	8	419	19	26	58	11	10	34	15	927				
5:30 PM	12	278	16	14	404	24	27	45	18	12	40	8	898				
5:45 PM	13	298	14	18	447	18	27	35	18	15	42	12	957				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	91	2277	119	82	3335	168	202	369	124	110	347	85	7309	0	0	0	0
APPROACH %'s :	3.66%	91.56%	4.78%	2.29%	93.03%	4.69%	29.06%	53.09%	17.84%	20.30%	64.02%	15.68%					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	40	1161	63	45	1691	78	103	188	70	54	162	44	3699				
PEAK HR FACTOR :		0.966			0.939			0.940			0.903		0.966				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-019_Peds & Bikes
N/S Street: Pacific Coast Hwy
E/W Street: Beryl St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	2	1	2	0	0	0	0
7:15 AM	0	0	0	0	0	1	1	0
7:30 AM	2	3	0	1	1	2	0	1
7:45 AM	3	1	1	1	1	1	0	3
8:00 AM	1	1	1	2	0	2	0	1
8:15 AM	1	3	1	0	2	0	1	2
8:30 AM	1	1	2	0	0	1	2	1
8:45 AM	1	1	0	5	0	0	3	2
TOTALS	**9**	**12**	**6**	**11**	**4**	**7**	**7**	**10**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	3	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	1
8:00 AM	0	1	0	0	2	0	0	1	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0
8:45 AM	0	0	0	0	0	1	0	0	0	0	0	1
TOTALS	**0**	**1**	**0**	**0**	**7**	**1**	**0**	**3**	**0**	**0**	**2**	**2**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	3	3	2	2	0	0	0	2
4:15 PM	0	1	1	1	1	0	0	1
4:30 PM	1	1	0	3	0	0	0	1
4:45 PM	1	0	0	0	0	0	3	1
5:00 PM	2	0	0	3	2	0	4	0
5:15 PM	5	4	3	1	1	5	1	1
5:30 PM	1	3	2	4	4	0	1	2
5:45 PM	1	3	2	2	2	0	3	1
TOTALS	**14**	**15**	**10**	**16**	**10**	**5**	**12**	**9**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	2	0	0	0	1	1	2	0	0	0	0
4:15 PM	0	3	0	0	1	0	1	0	0	0	2	0
4:30 PM	0	1	0	2	1	0	0	2	0	0	2	0
4:45 PM	0	4	0	0	1	0	0	0	0	0	1	0
5:00 PM	0	1	0	0	1	0	0	3	0	0	3	0
5:15 PM	0	1	0	0	3	0	0	1	0	1	4	0
5:30 PM	0	0	0	0	1	0	1	1	0	0	2	0
5:45 PM	1	0	0	0	0	0	0	0	0	0	3	0
TOTALS	**1**	**12**	**0**	**2**	**8**	**1**	**3**	**9**	**0**	**1**	**17**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-020 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Harbor Dr			Harbor Dr			Pacific Ave			Pacific Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	1.3	0.3	0.3	0	1	0	0	1	1					
7:00 AM	1	0	0	1	0	11	7	0	1	0	1	0	22	0	0	0	0
7:15 AM	0	0	0	1	0	9	0	1	0	0	1	1	13	0	0	0	0
7:30 AM	0	0	0	2	0	13	2	0	0	0	1	2	20	0	0	0	0
7:45 AM	0	0	0	1	0	21	3	0	0	0	1	1	27	0	0	0	0
8:00 AM	0	0	0	2	0	12	5	1	0	0	1	2	23	0	0	1	0
8:15 AM	0	0	0	0	0	20	9	1	0	0	0	3	33	0	0	0	0
8:30 AM	0	0	0	1	0	15	6	0	1	0	1	0	24	0	0	0	0
8:45 AM	0	0	0	1	1	23	6	0	1	0	5	1	38	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	1	0	0	9	1	124	38	3	3	0	11	10	200	0	0	1	0
APPROACH %'s :	100.00%	0.00%	0.00%	6.72%	0.75%	92.54%	86.36%	6.82%	6.82%	0.00%	52.38%	47.62%					

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	0	0	4	1	70	26	2	2	0	7	6	118
PEAK HR FACTOR :	0.000			0.750			0.750			0.542			0.776

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-020 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Harbor Dr			Harbor Dr			Pacific Ave			Pacific Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	1.3	0.3	0.3	0	1	0	0	1	1					
4:00 PM	1	7	0	2	3	17	20	1	5	0	0	0	56	0	0	0	0
4:15 PM	1	7	0	3	0	13	28	1	2	0	2	0	57	0	0	0	0
4:30 PM	3	5	0	0	3	11	31	0	3	0	0	1	57	0	0	1	0
4:45 PM	0	2	0	1	7	15	34	0	3	0	2	1	65	0	0	2	0
5:00 PM	3	2	0	1	3	14	26	1	7	0	0	0	57	0	0	1	0
5:15 PM	3	10	0	1	5	14	29	0	4	0	1	1	68	0	0	0	0
5:30 PM	1	4	0	3	3	12	26	0	6	0	0	0	55	0	0	1	0
5:45 PM	2	6	0	0	3	11	29	1	4	0	1	2	59	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	14	43	0	11	27	107	223	4	34	0	6	5	474	0	0	5	0
APPROACH %'s :	24.56%	75.44%	0.00%	7.59%	18.62%	73.79%	85.44%	1.53%	13.03%	0.00%	54.55%	45.45%					

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	9	19	0	3	18	54	120	1	17	0	3	3	247
PEAK HR FACTOR :		0.538			0.815			0.932			0.500		0.908

CONTROL : 4-Way Stop

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-020
N/S Street: Harbor Dr
E/W Street: Pacific Ave
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	1
7:30 AM	0	2	1	1	0	1	0	0
7:45 AM	2	2	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	1	0
8:45 AM	0	0	0	0	0	0	1	0
TOTALS	**2**	**4**	**1**	**1**	**0**	**1**	**2**	**3**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	2	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	0	1	0	0	0
8:00 AM	1	0	0	0	0	0	1	0	0	0	0	0
8:15 AM	1	0	0	0	0	1	0	0	1	0	0	0
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	3	2	0	0	0	0	0
TOTALS	**2**	**0**	**0**	**0**	**1**	**6**	**5**	**0**	**2**	**0**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	1	0
5:15 PM	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	2	0	0	0	0
TOTALS	**1**	**0**	**0**	**2**	**0**	**0**	**2**	**1**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	2	0	0	0	0	0
4:15 PM	2	1	0	0	0	0	5	0	0	0	0	0
4:30 PM	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
5:00 PM	0	1	0	0	0	2	1	0	0	0	0	0
5:15 PM	1	0	0	0	0	0	2	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	3	1	0	0	0	0
5:45 PM	1	2	0	0	0	0	5	0	1	0	0	0
TOTALS	**4**	**4**	**0**	**0**	**0**	**2**	**18**	**1**	**1**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-020 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Harbor Dr			Harbor Dr			Pacific Ave			Pacific Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	1	1.5	.5	.5	0	1	0	
7:00 AM	0	1	0	0	1	20	12	0	0	0	1	0	35
7:15 AM	0	0	0	0	0	17	9	0	0	0	1	0	27
7:30 AM	0	0	0	0	1	18	5	0	0	0	1	3	28
7:45 AM	0	0	0	0	1	32	16	0	0	0	2	2	53
8:00 AM	0	1	0	0	0	30	19	1	1	0	1	0	53
8:15 AM	1	0	0	2	0	26	10	0	0	0	1	1	41
8:30 AM	0	0	0	0	0	30	10	0	1	0	0	0	41
8:45 AM	2	1	0	1	2	36	20	0	0	0	2	0	64
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	3	0	3	5	209	101	1	2	0	9	6	342
APPROACH %'s :	50.00%	50.00%	0.00%	1.38%	2.30%	96.31%	97.12%	0.96%	1.92%	0.00%	60.00%	40.00%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	3	2	0	3	2	122	59	1	2	0	4	1	199
PEAK HR FACTOR :	0.417			0.814			0.738			0.625			0.777

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-020 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Harbor Dr			Harbor Dr			Pacific Ave			Pacific Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	1	1.5	.5	.5	0	1	0	
4:00 PM	1	5	0	1	6	28	30	0	5	0	0	2	78
4:15 PM	3	8	0	3	3	29	36	1	9	0	0	0	92
4:30 PM	2	9	0	2	8	32	43	0	8	0	0	2	106
4:45 PM	5	7	0	0	5	41	46	0	3	0	3	0	110
5:00 PM	2	4	0	3	3	30	36	0	5	0	1	0	84
5:15 PM	2	7	0	5	7	23	49	2	3	0	1	1	100
5:30 PM	3	4	0	3	2	40	42	0	10	0	1	2	107
5:45 PM	4	7	0	1	3	26	50	0	7	0	1	2	101
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	22	51	0	18	37	249	332	3	50	0	7	9	778
APPROACH %'s :	30.14%	69.86%	0.00%	5.92%	12.17%	81.91%	86.23%	0.78%	12.99%	0.00%	43.75%	56.25%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	12	22	0	11	17	134	173	2	21	0	6	3	401
PEAK HR FACTOR :	0.708			0.880			0.907			0.750			0.911

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : 4-Way Stop

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-020_Peds & Bikes
N/S Street: Harbor Dr
E/W Street: Pacific Ave
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	1	0	0	1	1	0	0
7:15 AM	0	0	0	0	0	0	1	1
7:30 AM	0	0	1	0	0	1	0	0
7:45 AM	0	0	1	1	0	0	2	0
8:00 AM	0	1	2	0	2	0	0	0
8:15 AM	1	0	0	1	0	2	0	0
8:30 AM	0	0	1	0	3	2	1	0
8:45 AM	2	2	0	2	0	1	3	0
TOTALS	**3**	**4**	**5**	**4**	**6**	**7**	**7**	**1**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	3	4	0	0	0	1	0
7:15 AM	0	1	0	0	0	1	0	0	0	0	0	0
7:30 AM	1	0	1	0	0	1	1	0	0	0	0	0
7:45 AM	1	0	0	0	0	2	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	2	4	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	0	1	0	0	0
8:30 AM	0	0	0	0	0	0	1	0	0	0	0	0
8:45 AM	1	1	0	0	0	3	0	0	0	0	0	0
TOTALS	**3**	**2**	**1**	**0**	**0**	**13**	**10**	**0**	**1**	**0**	**1**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	0	0	2	0
4:15 PM	0	3	0	0	0	0	0	0
4:30 PM	1	0	0	2	0	2	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	1	0
5:15 PM	1	3	0	0	2	1	1	0
5:30 PM	0	0	1	0	2	0	3	1
5:45 PM	0	1	0	1	1	0	2	0
TOTALS	**2**	**7**	**1**	**3**	**5**	**3**	**9**	**1**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	1	0	0	0	3	0	1	0	0	0
4:15 PM	2	0	0	0	0	3	0	1	0	0	1	0
4:30 PM	1	0	0	0	0	0	2	0	1	0	0	0
4:45 PM	1	0	0	0	0	0	4	0	0	0	0	0
5:00 PM	2	0	0	0	1	1	2	0	3	0	0	0
5:15 PM	0	0	0	0	0	3	2	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	2	0	0	0	0	0	0	0	4	0	0	0
TOTALS	**8**	**0**	**1**	**0**	**1**	**7**	**13**	**1**	**9**	**0**	**1**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-021 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Carnelian St			Carnelian St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	0	1	3	0	0	1	0	0	1	0					
7:00 AM	1	104	4	3	52	0	1	0	1	1	0	1	168	0	0	0	0
7:15 AM	0	166	4	4	48	1	2	0	3	1	0	0	229	0	1	0	0
7:30 AM	1	218	4	7	67	0	2	1	1	2	0	7	310	0	0	0	0
7:45 AM	0	286	8	4	82	0	1	0	2	7	0	10	400	0	1	0	0
8:00 AM	3	221	6	8	93	0	1	2	2	6	0	12	354	0	1	0	0
8:15 AM	0	193	4	2	94	0	3	1	1	4	1	6	309	0	0	0	0
8:30 AM	0	174	14	6	80	0	0	0	5	4	0	9	292	0	0	0	0
8:45 AM	1	180	8	7	87	1	0	1	1	6	0	7	299	0	2	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	6	1542	52	41	603	2	10	5	16	31	1	52	2361	0	5	0	0
APPROACH %'s :	0.38%	96.38%	3.25%	6.35%	93.34%	0.31%	32.26%	16.13%	51.61%	36.90%	1.19%	61.90%					

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	4	918	22	21	336	0	7	4	6	19	1	35	1373
PEAK HR FACTOR :		0.803			0.884			0.850			0.764		0.858

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-021 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Carnelian St			Carnelian St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	0	1	3	0	0	1	0	0	1	0					
4:00 PM	5	101	11	17	170	1	2	1	2	12	1	5	328	2	5	0	0
4:15 PM	2	142	10	10	168	1	1	0	1	8	0	7	350	0	4	0	0
4:30 PM	5	128	6	15	232	1	1	0	2	11	1	8	410	3	2	0	0
4:45 PM	1	139	5	27	236	1	0	0	1	9	1	5	425	0	5	0	0
5:00 PM	1	128	10	12	271	3	1	0	0	10	0	5	441	1	3	0	0
5:15 PM	4	169	9	19	249	2	1	0	2	10	0	7	472	3	7	0	0
5:30 PM	5	145	12	17	258	3	1	3	1	7	0	5	457	2	2	0	0
5:45 PM	3	171	8	10	212	3	1	0	1	13	1	6	429	1	1	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	26	1123	71	127	1796	15	8	4	10	80	4	48	3312	12	29	0	0
APPROACH %'s :	2.13%	92.05%	5.82%	6.55%	92.67%	0.77%	36.36%	18.18%	45.45%	60.61%	3.03%	36.36%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	13	613	39	58	990	11	4	3	4	40	1	23	1799
PEAK HR FACTOR :		0.913			0.926			0.550			0.800		0.953

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-021
N/S Street: Catalina Ave
E/W Street: Carnelian St
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	1	0	1	0	0
7:15 AM	1	0	2	3	0	2	3	1
7:30 AM	1	1	0	1	1	1	1	1
7:45 AM	4	0	1	1	0	0	2	2
8:00 AM	0	1	1	0	3	0	12	0
8:15 AM	0	0	4	0	2	2	0	2
8:30 AM	3	0	0	0	0	1	3	0
8:45 AM	1	0	1	0	3	2	1	1
TOTALS	**10**	**2**	**9**	**6**	**9**	**9**	**22**	**7**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	4	0	0	1	0	0	0	0	0	0	0
7:15 AM	0	3	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	4	1	0	2	0	0	0	0	0	0	1
7:45 AM	0	2	0	0	4	0	0	0	0	0	0	0
8:00 AM	0	2	0	1	2	0	0	0	0	0	0	0
8:15 AM	0	3	0	0	12	0	0	0	0	0	0	0
8:30 AM	0	2	0	0	1	0	0	0	0	0	0	0
8:45 AM	0	7	0	1	5	0	0	0	0	0	0	1
TOTALS	**0**	**27**	**1**	**2**	**27**	**0**	**0**	**0**	**0**	**0**	**0**	**2**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	4	0	3	0	0	0	0	1
4:15 PM	1	0	1	0	2	2	0	3
4:30 PM	0	2	2	2	0	1	5	0
4:45 PM	1	0	1	1	0	1	0	0
5:00 PM	0	4	0	1	0	1	0	4
5:15 PM	1	4	0	1	0	0	0	2
5:30 PM	2	0	0	0	2	0	2	1
5:45 PM	1	1	1	1	0	0	4	2
TOTALS	**10**	**11**	**8**	**6**	**4**	**5**	**11**	**13**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	2	0	0	3	0	0	0	0	0	0	2
4:15 PM	0	1	0	1	2	0	0	0	0	0	0	0
4:30 PM	0	3	0	0	2	0	0	0	0	0	0	1
4:45 PM	0	1	0	1	2	0	0	0	0	0	0	0
5:00 PM	0	3	0	0	4	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	2	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	5	0	0	0	0	0	0	0
5:45 PM	0	4	0	4	5	0	0	0	0	0	0	0
TOTALS	**0**	**14**	**0**	**6**	**25**	**0**	**0**	**0**	**0**	**0**	**0**	**3**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-021 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Carnelian St			Carnelian St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	0	1	3	0	0	1	0	0	1	0					
7:00 AM	0	126	3	9	44	0	0	0	1	0	1	2	186	0	1	0	0
7:15 AM	1	130	6	4	49	0	0	0	3	1	1	3	198	0	1	0	0
7:30 AM	0	162	3	6	82	0	1	0	0	3	0	7	264	0	0	0	0
7:45 AM	2	175	8	8	113	0	2	1	1	2	0	9	321	2	1	0	0
8:00 AM	0	174	10	11	93	0	1	0	4	3	0	9	305	0	2	0	0
8:15 AM	1	187	8	9	83	0	0	0	2	1	0	17	308	0	3	0	0
8:30 AM	1	180	6	10	98	0	3	1	2	2	0	7	310	0	3	0	0
8:45 AM	2	191	11	7	107	0	1	1	3	3	0	8	334	0	1	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	7	1325	55	64	669	0	8	3	16	15	2	62	2226	2	12	0	0
APPROACH %'s :	0.50%	95.53%	3.97%	8.73%	91.27%	0.00%	29.63%	11.11%	59.26%	18.99%	2.53%	78.48%					
PEAK HR START TIME :	800 AM												TOTAL				
PEAK HR VOL :	4	732	35	37	381	0	5	2	11	9	0	41	1257				
PEAK HR FACTOR :		0.945			0.917			0.750			0.694		0.941				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-021 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Carnelian St			Carnelian St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	0	1	3	0	0	1	0	0	1	0					
4:00 PM	1	179	14	17	202	0	1	0	1	11	1	12	439	1	6	0	0
4:15 PM	3	163	10	25	203	1	1	0	0	5	0	13	424	1	2	0	0
4:30 PM	1	194	11	29	251	0	0	1	0	10	3	13	513	1	7	0	0
4:45 PM	3	188	7	18	225	0	0	1	3	6	2	6	459	1	2	0	0
5:00 PM	3	173	14	13	248	2	0	1	1	10	1	12	478	0	3	0	0
5:15 PM	1	174	9	30	260	3	1	1	1	7	2	9	498	0	4	0	0
5:30 PM	1	163	8	12	259	1	1	0	0	6	0	5	456	0	2	0	0
5:45 PM	1	161	7	10	259	1	1	0	0	5	2	2	449	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	14	1395	80	154	1907	8	5	4	6	60	11	72	3716	4	26	0	0
APPROACH %'s :	0.94%	93.69%	5.37%	7.44%	92.17%	0.39%	33.33%	26.67%	40.00%	41.96%	7.69%	50.35%					

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	8	729	41	90	984	5	1	4	5	33	8	40	1948
PEAK HR FACTOR :		0.944			0.921			0.625			0.779		0.949

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-021_Peds & Bikes
N/S Street: Catalina Ave
E/W Street: Carnelian St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	0	3	0	0	3	2	3
7:15 AM	0	1	2	2	0	1	0	0
7:30 AM	1	3	0	0	4	2	3	2
7:45 AM	0	1	1	0	0	0	4	1
8:00 AM	3	0	0	0	3	0	2	1
8:15 AM	0	0	0	0	0	0	2	3
8:30 AM	0	0	1	0	0	4	2	1
8:45 AM	1	1	0	2	1	0	2	0
TOTALS	**6**	**6**	**7**	**4**	**8**	**10**	**17**	**11**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	5	0	0	5	0	0	0	0	0	0	1
7:15 AM	0	3	0	0	2	0	0	0	0	0	0	1
7:30 AM	0	2	0	0	2	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	2	0	0	0	0	0	0	0
8:00 AM	0	8	0	2	4	0	0	0	0	0	0	0
8:15 AM	0	1	0	1	2	0	0	0	0	0	0	0
8:30 AM	0	2	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	7	0	0	1	0	0	0	0	0	0	1
TOTALS	**0**	**28**	**0**	**3**	**18**	**0**	**0**	**0**	**0**	**0**	**0**	**4**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	1	1	2	0	0	1	1
4:15 PM	0	0	0	4	0	3	6	1
4:30 PM	0	4	0	0	2	0	1	4
4:45 PM	0	1	1	2	1	0	2	3
5:00 PM	1	1	1	2	0	0	0	1
5:15 PM	0	1	2	1	1	1	4	3
5:30 PM	0	2	5	2	0	0	2	2
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**1**	**10**	**10**	**13**	**4**	**4**	**16**	**15**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	4	0	0	0	0	0	0	1
4:15 PM	0	2	0	0	4	0	0	0	0	0	0	0
4:30 PM	0	4	0	0	2	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	3	0	0	0	0	0	0	0
5:00 PM	0	1	0	0	4	0	0	0	0	0	0	0
5:15 PM	0	5	1	1	4	0	0	0	0	0	0	0
5:30 PM	0	1	0	2	2	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**13**	**1**	**3**	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**1**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-022 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Diamond St			Diamond St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	0	1	3	0	0	1	0	0	1	0					
7:00 AM	0	97	9	4	50	0	3	1	0	1	0	5	170	0	0	0	0
7:15 AM	0	161	10	4	48	0	1	0	0	3	0	2	229	0	1	0	0
7:30 AM	1	211	19	10	62	1	6	0	1	7	0	7	325	1	0	0	0
7:45 AM	0	261	16	6	83	1	5	6	1	8	0	23	410	0	0	0	0
8:00 AM	0	218	15	7	94	2	2	2	3	4	0	14	361	0	1	0	0
8:15 AM	1	175	13	3	88	0	4	1	1	10	1	8	305	1	0	0	1
8:30 AM	0	180	18	8	87	0	3	1	2	5	2	5	311	0	1	0	0
8:45 AM	4	169	14	7	87	1	2	2	0	16	0	15	317	2	1	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	6	1472	114	49	599	5	26	13	8	54	3	79	2428	4	4	0	1
APPROACH %'s :	0.38%	92.46%	7.16%	7.50%	91.73%	0.77%	55.32%	27.66%	17.02%	39.71%	2.21%	58.09%					

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	2	865	63	26	327	4	17	9	6	29	1	52	1401
PEAK HR FACTOR :		0.839			0.867			0.667			0.661		0.854

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-022 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Diamond St			Diamond St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	0	1	3	0	0	1	0	0	1	0					
4:00 PM	3	99	7	8	168	5	1	2	1	10	1	9	314	1	1	0	0
4:15 PM	1	131	8	7	175	0	0	0	0	9	1	11	343	1	3	0	0
4:30 PM	3	123	15	12	228	4	1	1	0	12	1	7	407	2	1	0	0
4:45 PM	3	128	11	15	230	2	1	2	3	11	3	14	423	0	0	0	0
5:00 PM	4	132	11	19	260	3	1	2	0	11	1	10	454	3	3	0	0
5:15 PM	1	154	16	17	242	1	1	0	0	9	2	11	454	0	3	0	0
5:30 PM	2	157	8	17	250	1	4	0	0	10	2	11	462	0	2	0	0
5:45 PM	4	149	7	9	213	4	0	1	1	14	2	10	414	2	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	21	1073	83	104	1766	20	9	8	5	86	13	83	3271	9	13	0	0
APPROACH %'s :	1.78%	91.16%	7.05%	5.50%	93.44%	1.06%	40.91%	36.36%	22.73%	47.25%	7.14%	45.60%					

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	10	571	46	68	982	7	7	4	3	41	8	46	1793
PEAK HR FACTOR :		0.917			0.937			0.583			0.848		0.970

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-022
N/S Street: Catalina Ave
E/W Street: Diamond St
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	2	2	0	0	0	0	2
7:15 AM	1	2	0	0	0	1	1	1
7:30 AM	3	5	2	0	5	2	1	1
7:45 AM	1	4	2	2	0	0	0	3
8:00 AM	0	2	2	1	1	0	14	0
8:15 AM	0	4	1	17	1	2	2	0
8:30 AM	1	2	0	2	2	0	1	0
8:45 AM	6	2	0	1	4	3	2	0
TOTALS	**13**	**23**	**9**	**23**	**13**	**8**	**21**	**7**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	3	0	0	1	0	0	0	0	0	0	1
7:15 AM	0	3	1	0	0	0	0	0	0	1	0	0
7:30 AM	0	4	0	0	3	0	0	0	0	0	0	0
7:45 AM	0	2	0	0	2	0	0	0	0	0	0	0
8:00 AM	0	0	0	1	5	0	0	0	0	0	1	1
8:15 AM	0	12	0	1	2	0	0	1	0	1	1	1
8:30 AM	1	2	0	0	1	0	0	0	0	0	0	0
8:45 AM	0	5	0	0	5	0	0	0	0	0	1	1
TOTALS	**1**	**31**	**1**	**2**	**19**	**0**	**0**	**1**	**0**	**2**	**3**	**4**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	2	1	8	0	0	2	3	3
4:15 PM	2	5	3	0	2	3	1	4
4:30 PM	1	5	0	0	0	2	6	0
4:45 PM	1	0	0	2	0	1	6	3
5:00 PM	1	3	3	2	0	1	1	1
5:15 PM	1	0	6	0	0	1	1	7
5:30 PM	7	1	2	3	2	0	0	6
5:45 PM	2	2	2	3	2	1	2	1
TOTALS	**17**	**17**	**24**	**10**	**6**	**11**	**20**	**25**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	0	4	0	0	1	0	0	2	0
4:15 PM	0	1	0	0	2	0	0	0	0	0	1	0
4:30 PM	0	1	1	0	1	0	0	1	0	0	0	0
4:45 PM	0	1	0	2	0	0	0	0	0	0	1	0
5:00 PM	0	3	0	0	4	0	0	0	0	0	1	1
5:15 PM	0	0	2	0	4	0	0	0	0	0	0	0
5:30 PM	0	0	0	1	3	0	0	0	0	0	0	0
5:45 PM	0	3	0	0	3	0	0	3	0	0	0	1
TOTALS	**0**	**10**	**3**	**3**	**21**	**0**	**0**	**5**	**0**	**0**	**5**	**2**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-022

Day: Friday

City: Redondo Beach

Date: 8/23/2013

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Diamond St			Diamond St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	1	1	0					
7:00 AM	2	120	8	4	41	0	2	0	0	1	0	5	183	2	0	0	0
7:15 AM	0	131	12	6	46	1	0	2	2	1	0	5	206	0	0	0	0
7:30 AM	0	160	13	3	79	1	3	2	1	4	1	4	271	0	1	0	0
7:45 AM	3	176	18	11	106	1	1	5	2	6	1	10	340	3	0	0	0
8:00 AM	0	166	15	6	94	0	2	1	1	10	0	18	313	0	0	0	0
8:15 AM	1	175	18	6	82	0	6	1	1	8	0	13	311	0	0	0	0
8:30 AM	1	169	14	7	94	0	2	1	2	5	1	18	314	1	0	0	0
8:45 AM	1	188	11	4	106	1	2	0	1	8	2	12	336	1	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	8	1285	109	47	648	4	18	12	10	43	5	85	2274	7	1	0	0
APPROACH %'s :	0.57%	91.65%	7.77%	6.72%	92.70%	0.57%	45.00%	30.00%	25.00%	32.33%	3.76%	63.91%					

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	5	686	65	30	376	1	11	8	6	29	2	59	1278
PEAK HR FACTOR :		0.959			0.862			0.781			0.804		0.940

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-022

Day: Friday

City: Redondo Beach

Date: 8/23/2013

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Diamond St			Diamond St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	1	1	0					
4:00 PM	6	175	17	10	203	2	4	0	2	9	0	12	440	4	2	0	0
4:15 PM	4	162	10	14	193	4	1	0	1	14	2	16	421	1	2	0	0
4:30 PM	4	187	15	15	239	4	2	0	0	12	0	15	493	1	0	0	0
4:45 PM	0	178	18	21	214	2	1	2	1	10	0	22	469	0	2	0	0
5:00 PM	3	172	12	12	241	2	1	0	1	13	2	13	472	2	0	0	0
5:15 PM	3	180	13	9	255	2	0	0	1	14	2	7	486	3	2	0	0
5:30 PM	3	161	9	12	253	4	4	2	2	7	0	13	470	2	3	0	0
5:45 PM	2	154	16	16	248	3	0	1	1	13	0	13	467	1	1	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	25	1369	110	109	1846	23	13	5	9	92	6	111	3718	14	12	0	0
APPROACH %'s :	1.66%	91.02%	7.31%	5.51%	93.33%	1.16%	48.15%	18.52%	33.33%	44.02%	2.87%	53.11%					
PEAK HR START TIME :	430 PM												TOTAL				
PEAK HR VOL :	10	717	58	57	949	10	4	2	3	49	4	57	1920				
PEAK HR FACTOR :		0.953			0.955			0.563			0.859		0.974				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-022_Peds &
N/S Street: Catalina Ave
E/W Street: Diamond St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	0	0	0	0	3	0	0
7:15 AM	0	3	0	1	2	1	3	0
7:30 AM	1	0	2	0	2	2	0	2
7:45 AM	0	5	0	1	1	1	2	1
8:00 AM	1	0	0	0	0	1	0	0
8:15 AM	3	2	0	0	0	0	3	2
8:30 AM	2	2	0	2	1	4	4	1
8:45 AM	5	0	3	1	0	1	3	3
TOTALS	**13**	**12**	**5**	**5**	**6**	**13**	**15**	**9**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	4	1	0	3	0	0	0	0	2	0	1
7:15 AM	0	2	0	0	3	0	0	0	0	0	0	1
7:30 AM	0	2	0	0	2	0	0	0	0	1	0	0
7:45 AM	0	4	0	0	2	0	0	0	0	0	0	1
8:00 AM	0	6	1	1	2	0	0	0	0	1	0	2
8:15 AM	0	5	0	1	3	0	0	0	0	0	0	0
8:30 AM	0	2	0	0	1	0	0	0	0	1	0	1
8:45 AM	0	5	2	0	1	0	0	0	0	0	0	0
TOTALS	**0**	**30**	**4**	**2**	**17**	**0**	**0**	**0**	**0**	**5**	**0**	**6**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	1	0	1	0	0	0	3
4:15 PM	0	3	0	0	2	1	2	1
4:30 PM	5	5	2	3	2	0	3	3
4:45 PM	6	1	3	1	2	3	5	1
5:00 PM	3	3	2	3	4	0	4	1
5:15 PM	2	0	4	0	1	2	4	4
5:30 PM	1	0	1	0	1	3	2	1
5:45 PM	0	7	1	2	2	4	2	1
TOTALS	**17**	**20**	**13**	**10**	**14**	**13**	**22**	**15**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	3	0	0	0	0	0	0	2
4:15 PM	0	1	1	3	1	0	0	0	0	0	0	1
4:30 PM	0	3	0	0	2	0	0	0	0	0	0	1
4:45 PM	0	1	0	2	5	0	0	0	0	3	0	0
5:00 PM	0	2	0	2	9	0	0	0	0	0	0	0
5:15 PM	0	2	0	0	5	0	0	0	0	0	0	0
5:30 PM	0	3	1	3	0	0	0	0	0	0	0	1
5:45 PM	0	4	0	0	0	0	0	0	0	2	0	2
TOTALS	**0**	**16**	**2**	**10**	**25**	**0**	**0**	**0**	**0**	**5**	**0**	**7**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-023 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Emerald St			Emerald St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	0	1	3	0	0	1	0	0	1	0					
7:00 AM	0	93	3	4	47	1	6	1	4	0	0	4	163	0	3	0	0
7:15 AM	1	148	0	4	45	1	13	3	9	0	1	6	231	0	1	0	0
7:30 AM	1	216	4	10	59	0	10	2	7	4	0	11	324	0	3	0	0
7:45 AM	2	252	10	4	81	0	14	4	4	4	2	16	393	0	1	0	0
8:00 AM	2	190	6	0	94	4	22	2	10	3	1	5	339	0	0	0	0
8:15 AM	1	188	7	3	99	2	11	1	3	4	1	1	321	1	1	0	0
8:30 AM	1	187	4	3	92	1	9	6	7	4	1	8	323	0	3	0	0
8:45 AM	3	172	5	9	94	1	7	4	7	1	0	6	309	0	6	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	11	1446	39	37	611	10	92	23	51	20	6	57	2403	1	18	0	0
APPROACH %'s :	0.74%	96.66%	2.61%	5.62%	92.86%	1.52%	55.42%	13.86%	30.72%	24.10%	7.23%	68.67%					
PEAK HR START TIME :	730 AM												TOTAL				
PEAK HR VOL :	6	846	27	17	333	6	57	9	24	15	4	33	1377				
PEAK HR FACTOR :		0.832			0.856			0.662			0.591		0.876				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-023 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Emerald St			Emerald St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	0	1	3	0	0	1	0	0	1	0					
4:00 PM	2	103	7	4	171	4	5	0	4	4	2	5	311	0	2	0	0
4:15 PM	3	134	2	12	169	7	3	2	5	1	1	6	345	0	5	0	0
4:30 PM	1	123	3	15	220	7	4	1	1	2	2	6	385	0	6	0	0
4:45 PM	2	128	5	5	233	6	5	1	4	2	2	7	400	1	2	0	0
5:00 PM	3	135	6	10	246	18	4	2	5	2	2	6	439	2	4	0	0
5:15 PM	5	165	5	6	236	5	5	2	3	3	1	6	442	0	0	0	0
5:30 PM	6	157	4	10	247	7	3	0	4	5	2	4	449	0	1	0	0
5:45 PM	3	157	2	6	217	9	4	0	6	4	2	3	413	1	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	25	1102	34	68	1739	63	33	8	32	23	14	43	3184	4	20	0	0
APPROACH %'s :	2.15%	94.92%	2.93%	3.64%	92.99%	3.37%	45.21%	10.96%	43.84%	28.75%	17.50%	53.75%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	17	614	17	32	946	39	16	4	18	14	7	19	1743
PEAK HR FACTOR :		0.926			0.928			0.864			0.909		0.970

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-023
N/S Street: Catalina Ave
E/W Street: Emerald St
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	1	0	0	0	0	0	0
7:15 AM	0	2	1	0	0	1	0	2
7:30 AM	1	6	1	0	2	1	2	2
7:45 AM	2	2	2	2	0	1	2	1
8:00 AM	0	0	1	1	2	1	0	1
8:15 AM	1	3	0	0	0	0	0	0
8:30 AM	1	1	1	2	1	1	0	2
8:45 AM	1	3	3	0	4	1	0	0
TOTALS	**8**	**18**	**9**	**5**	**9**	**6**	**4**	**8**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	3	0	1	1	0	0	0	0	0	0	0
7:15 AM	0	4	0	0	1	0	0	0	0	0	0	0
7:30 AM	0	4	0	0	3	0	0	0	0	0	0	0
7:45 AM	0	2	1	0	0	0	0	1	0	0	0	0
8:00 AM	0	1	0	2	1	0	0	0	0	0	0	0
8:15 AM	0	3	1	0	13	0	0	0	0	0	0	0
8:30 AM	0	4	0	0	1	0	0	0	0	1	0	1
8:45 AM	0	4	0	0	4	0	0	0	0	1	0	1
TOTALS	**0**	**25**	**2**	**3**	**24**	**0**	**0**	**1**	**0**	**2**	**0**	**2**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	1	1	1	2	0	0	1
4:15 PM	3	3	0	0	0	0	1	0
4:30 PM	4	3	0	0	0	0	0	0
4:45 PM	2	0	0	2	0	0	4	1
5:00 PM	5	0	2	1	0	0	0	0
5:15 PM	1	3	2	1	1	1	2	2
5:30 PM	1	0	0	2	1	0	0	0
5:45 PM	0	1	2	1	2	0	0	3
TOTALS	**16**	**11**	**7**	**8**	**6**	**1**	**7**	**7**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	1	1	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	2	0	0	0	0	0	0	0
4:30 PM	0	2	0	0	1	0	0	0	0	1	0	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	0	0	4	0	0	0	0	0	0	0
5:15 PM	0	0	1	0	1	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	3	0	0	0	0	0	0	0
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	1
TOTALS	**0**	**8**	**1**	**1**	**12**	**0**	**0**	**0**	**0**	**1**	**0**	**1**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-023 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Emerald St			Emerald St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	0	1	0					
7:00 AM	0	120	7	2	39	1	8	1	1	1	0	3	183	0	1	0	0
7:15 AM	0	130	6	1	45	3	11	2	3	2	0	4	207	0	0	0	0
7:30 AM	0	158	6	4	79	1	8	4	8	0	0	9	277	0	3	0	0
7:45 AM	4	178	4	4	104	6	12	3	4	1	0	5	325	0	2	0	0
8:00 AM	1	168	3	10	95	1	5	2	4	7	0	7	303	0	3	0	0
8:15 AM	7	171	4	5	80	6	16	0	4	1	3	8	305	4	2	0	1
8:30 AM	1	160	3	8	91	2	9	2	6	2	1	16	301	0	2	0	0
8:45 AM	0	187	5	9	106	0	6	0	9	2	1	5	330	0	2	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	13	1272	38	43	639	20	75	14	39	16	5	57	2231	4	15	0	1
APPROACH %'s :	0.98%	96.15%	2.87%	6.13%	91.03%	2.85%	58.59%	10.94%	30.47%	20.51%	6.41%	73.08%					

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	9	686	15	32	372	9	36	4	23	12	5	36	1239
PEAK HR FACTOR :		0.924			0.898			0.788			0.697		0.939

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-023 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Emerald St			Emerald St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	0	1	0					
4:00 PM	4	179	4	9	196	8	7	0	5	3	1	7	423	1	4	0	0
4:15 PM	6	165	5	9	192	7	6	2	1	8	0	8	409	1	3	0	0
4:30 PM	7	190	5	3	243	4	9	0	5	5	2	4	477	2	2	0	0
4:45 PM	6	180	5	7	204	13	7	1	3	6	1	12	445	2	0	0	0
5:00 PM	1	169	3	14	234	6	7	3	4	7	2	5	455	0	1	0	0
5:15 PM	5	180	7	15	250	5	3	2	4	6	1	9	487	1	7	0	0
5:30 PM	0	170	7	12	244	6	4	3	1	5	2	4	458	0	2	0	0
5:45 PM	4	170	3	11	241	9	3	0	4	12	0	2	459	0	4	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	33	1403	39	80	1804	58	46	11	27	52	9	51	3613	7	23	0	0
APPROACH %'s :	2.24%	95.12%	2.64%	4.12%	92.89%	2.99%	54.76%	13.10%	32.14%	46.43%	8.04%	45.54%					

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	19	719	20	39	931	28	26	6	16	24	6	30	1864
PEAK HR FACTOR :		0.938			0.924			0.857			0.789		0.957

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-023_Peds & Bikes
N/S Street: Catalina Ave
E/W Street: Emerald St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	1	0	0	4	0	0	0
7:15 AM	1	0	0	0	2	1	0	0
7:30 AM	2	0	1	0	0	3	0	0
7:45 AM	2	0	0	0	1	0	0	0
8:00 AM	0	3	0	1	0	2	0	0
8:15 AM	0	2	2	1	0	0	0	0
8:30 AM	0	0	0	1	0	2	0	0
8:45 AM	1	0	0	1	3	0	0	0
TOTALS	**6**	**6**	**3**	**4**	**10**	**8**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	5	0	0	4	0	0	0	0	0	0	0
7:15 AM	0	2	0	0	3	0	0	0	0	1	0	0
7:30 AM	0	1	0	0	2	0	0	0	0	0	1	0
7:45 AM	0	2	0	0	3	0	0	0	0	0	0	1
8:00 AM	0	6	0	0	1	0	0	0	0	0	0	1
8:15 AM	0	2	0	0	8	0	0	1	0	0	0	0
8:30 AM	0	1	0	0	2	0	0	0	0	0	0	1
8:45 AM	0	6	0	0	1	0	0	1	0	0	0	1
TOTALS	**0**	**25**	**0**	**0**	**24**	**0**	**0**	**2**	**0**	**1**	**1**	**4**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	3	6	0	2	0	1	0	0
4:15 PM	2	5	0	1	2	0	0	0
4:30 PM	4	1	1	0	1	1	0	0
4:45 PM	2	2	4	1	0	0	0	0
5:00 PM	1	4	3	1	1	0	0	0
5:15 PM	2	3	0	3	0	2	0	0
5:30 PM	2	3	0	1	2	2	0	0
5:45 PM	1	7	0	1	0	1	0	0
TOTALS	**17**	**31**	**8**	**10**	**6**	**7**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	4	0	0	0	0	0	0	0
4:15 PM	0	4	0	0	1	0	0	0	0	0	0	0
4:30 PM	0	4	0	2	2	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	8	0	0	0	0	0	0	0
5:00 PM	0	1	0	1	6	0	0	0	0	1	0	2
5:15 PM	0	4	0	0	4	0	0	0	0	0	0	0
5:30 PM	0	2	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	3	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**19**	**0**	**3**	**25**	**0**	**0**	**0**	**0**	**1**	**0**	**3**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-024 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Garnet St			Garnet St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	1	1	0	1	1	0					
7:00 AM	0	432	1	0	160	1	4	0	5	0	6	10	619				
7:15 AM	0	485	2	1	215	2	1	2	1	0	3	10	722				
7:30 AM	0	445	3	0	237	1	1	1	6	1	4	15	714				
7:45 AM	0	370	4	0	306	4	3	2	7	2	5	11	714				
8:00 AM	1	310	1	0	238	2	3	3	13	3	4	16	594				
8:15 AM	0	359	2	0	254	1	2	3	5	5	5	6	642				
8:30 AM	0	376	2	0	216	2	3	0	8	1	3	14	625				
8:45 AM	0	417	2	1	247	3	2	2	6	1	1	14	696				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	1	3194	17	2	1873	16	19	13	51	13	31	96	5326	0	0	0	0
APPROACH %'s :	0.03%	99.44%	0.53%	0.11%	99.05%	0.85%	22.89%	15.66%	61.45%	9.29%	22.14%	68.57%					
PEAK HR START TIME :	700 AM												TOTAL				
PEAK HR VOL :	0	1732	10	1	918	8	9	5	19	3	18	46	2769				
PEAK HR FACTOR :		0.894			0.748			0.688			0.838		0.959				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-024 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Garnet St			Garnet St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	1	1	0	1	1	0					
4:00 PM	0	297	12	0	414	5	3	6	6	1	2	9	755				
4:15 PM	2	253	8	0	169	5	2	3	4	2	4	11	463				
4:30 PM	2	312	11	1	307	4	4	4	8	2	3	6	664				
4:45 PM	0	286	9	0	394	3	1	6	8	1	4	8	720				
5:00 PM	0	339	8	1	423	6	2	6	7	2	3	9	806				
5:15 PM	0	308	17	2	393	6	2	2	3	0	5	13	751				
5:30 PM	0	308	9	0	423	11	4	5	6	7	4	11	788				
5:45 PM	0	319	9	1	392	7	3	3	6	4	4	8	756				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	4	2422	83	5	2915	47	21	35	48	19	29	75	5703	0	0	0	0
APPROACH %'s :	0.16%	96.53%	3.31%	0.17%	98.25%	1.58%	20.19%	33.65%	46.15%	15.45%	23.58%	60.98%					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	0	1274	43	4	1631	30	11	16	22	13	16	41	3101				
PEAK HR FACTOR :		0.949			0.959			0.817			0.795		0.962				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-024
N/S Street: Pacific Coast Hwy
E/W Street: Garnet St
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	2	0	1	0	1
7:15 AM	0	0	3	0	1	1	0	0
7:30 AM	0	0	0	0	2	0	3	1
7:45 AM	1	2	0	0	0	0	1	0
8:00 AM	2	0	1	1	2	0	0	0
8:15 AM	0	0	1	0	0	0	0	0
8:30 AM	2	0	0	0	1	0	2	1
8:45 AM	0	3	0	0	0	0	1	0
TOTALS	**5**	**5**	**5**	**3**	**6**	**2**	**7**	**3**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	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
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:00 AM	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
8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	2	1	3	1
4:15 PM	1	1	0	2	0	0	2	0
4:30 PM	1	2	0	0	2	1	2	1
4:45 PM	0	0	2	3	0	3	0	2
5:00 PM	0	0	3	0	0	0	1	3
5:15 PM	0	0	2	2	3	1	0	2
5:30 PM	0	1	0	3	2	0	1	2
5:45 PM	0	0	2	0	0	1	0	0
TOTALS	**2**	**4**	**9**	**10**	**9**	**7**	**9**	**11**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	0	0	0	0	1	0	0	0	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	1	1	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0
5:15 PM	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
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0
TOTALS	**0**	**2**	**0**	**0**	**2**	**0**	**1**	**3**	**0**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-024 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Garnet St			Garnet St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	1	1	0	1	1	0					
7:00 AM	0	344	1	0	135	0	1	1	7	1	1	6	497				
7:15 AM	1	395	1	0	182	3	2	0	6	0	1	12	603				
7:30 AM	0	384	1	0	176	5	4	0	9	3	1	6	589				
7:45 AM	0	405	5	1	232	4	7	2	5	2	3	11	677				
8:00 AM	0	354	3	0	231	1	4	6	4	1	2	8	614				
8:15 AM	1	356	1	0	235	4	2	1	10	3	2	12	627				
8:30 AM	0	362	4	0	245	0	2	3	3	0	4	14	637				
8:45 AM	1	400	6	1	297	3	6	4	1	5	2	5	731				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	3	3000	22	2	1733	20	28	17	45	15	16	74	4975	0	0	0	0
APPROACH %'s :	0.10%	99.17%	0.73%	0.11%	98.75%	1.14%	31.11%	18.89%	50.00%	14.29%	15.24%	70.48%					
PEAK HR START TIME :	800 AM												TOTAL				
PEAK HR VOL :	2	1472	14	1	1008	8	14	14	18	9	10	39	2609				
PEAK HR FACTOR :		0.914			0.845			0.821			0.806		0.892				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-024 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Garnet St			Garnet St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	1	1	0	1	1	0	
4:00 PM	0	256	11	1	346	8	2	5	7	0	5	8	649
4:15 PM	0	327	11	0	385	9	2	9	13	2	4	11	773
4:30 PM	1	299	10	2	402	6	4	4	4	2	2	9	745
4:45 PM	0	300	9	1	423	3	4	5	5	0	2	8	760
5:00 PM	0	288	9	1	394	8	3	7	6	2	8	12	738
5:15 PM	0	320	11	1	398	5	5	10	4	1	5	12	772
5:30 PM	1	246	13	1	385	8	3	8	8	4	7	9	693
5:45 PM	0	298	5	0	425	5	6	6	1	1	1	6	754
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	2334	79	7	3158	52	29	54	48	12	34	75	5884
APPROACH %'s :	0.08%	96.65%	3.27%	0.22%	98.17%	1.62%	22.14%	41.22%	36.64%	9.92%	28.10%	61.98%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	1	1214	39	4	1604	26	13	25	28	6	16	40	3016
PEAK HR FACTOR :		0.928			0.957			0.688			0.705		0.975

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-024_Peds & Bikes
N/S Street: Pacific Coast Hwy
E/W Street: Garnet St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	1	0	2	0	1
7:15 AM	1	0	1	1	0	0	0	0
7:30 AM	0	0	0	1	0	0	1	0
7:45 AM	1	0	0	0	3	1	1	0
8:00 AM	0	1	1	1	7	4	0	2
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	2	0	0	0	2	0	2	0
8:45 AM	0	0	2	1	0	3	0	0
TOTALS	**4**	**1**	**4**	**5**	**12**	**10**	**4**	**3**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	2	0	0	0	0	0	0	0
7:30 AM	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
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:15 AM	1	0	0	0	1	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0	0	0	1	0
8:45 AM	0	1	0	0	0	0	0	0	0	0	1	0
TOTALS	**1**	**2**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**2**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	4	1	1	2	0	0	2	2
4:15 PM	0	0	0	1	0	0	1	2
4:30 PM	0	0	1	0	0	0	2	1
4:45 PM	0	0	0	0	3	0	1	1
5:00 PM	1	4	0	1	0	0	1	1
5:15 PM	0	0	2	2	7	1	1	2
5:30 PM	0	1	3	4	0	0	0	0
5:45 PM	2	1	2	2	2	1	0	1
TOTALS	**7**	**7**	**9**	**12**	**12**	**2**	**8**	**10**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	2	0	0	0	0	0	1	0	0	0	0
4:15 PM	0	3	0	0	1	0	0	1	0	0	1	0
4:30 PM	0	3	0	0	1	0	0	0	0	0	2	0
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0
5:00 PM	0	1	0	0	0	0	0	2	0	0	0	0
5:15 PM	0	0	0	0	2	0	0	0	0	0	0	0
5:30 PM	1	0	0	0	0	0	0	1	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**1**	**10**	**0**	**0**	**5**	**0**	**0**	**5**	**0**	**0**	**3**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-025 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	1	1	2	1	1	2	1	1	2	1					
7:00 AM	1	86	20	15	29	8	1	3	1	12	4	15	195	0	0	0	0
7:15 AM	2	126	27	19	28	7	1	3	1	8	6	21	249	1	0	0	0
7:30 AM	1	155	37	23	31	3	2	5	2	6	14	33	312	0	1	0	0
7:45 AM	2	191	33	24	60	10	4	7	1	24	14	57	427	0	2	0	0
8:00 AM	3	127	31	35	58	16	4	8	2	19	10	44	357	1	0	0	0
8:15 AM	4	166	43	27	68	10	4	5	3	18	15	34	397	2	0	0	0
8:30 AM	3	135	49	30	66	7	3	8	3	17	16	27	364	0	1	0	0
8:45 AM	6	156	36	23	62	12	2	7	7	26	21	26	384	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	22	1142	276	196	402	73	21	46	20	130	100	257	2685	4	4	0	0
APPROACH %'s :	1.53%	79.31%	19.17%	29.21%	59.91%	10.88%	24.14%	52.87%	22.99%	26.69%	20.53%	52.77%					

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	12	619	156	116	252	43	15	28	9	78	55	162	1545
PEAK HR FACTOR :		0.871			0.943			0.929			0.776		0.905

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-025 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	1	1	2	1	1	2	1	1	2	1					
4:00 PM	5	66	21	40	119	10	6	27	6	28	26	33	387	1	2	0	1
4:15 PM	4	84	31	33	112	12	13	34	5	13	23	45	409	0	0	1	0
4:30 PM	3	84	22	48	125	17	13	31	3	18	21	38	423	0	2	0	0
4:45 PM	5	87	20	56	169	19	8	20	5	18	35	43	485	0	2	0	0
5:00 PM	6	95	28	52	176	13	10	27	6	24	25	37	499	1	2	0	0
5:15 PM	11	106	24	45	140	11	17	32	8	27	26	46	493	1	1	0	0
5:30 PM	5	98	37	53	171	13	5	20	4	24	32	52	514	1	1	0	0
5:45 PM	5	103	23	45	176	17	10	13	7	24	30	59	512	0	1	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	44	723	206	372	1188	112	82	204	44	176	218	353	3722	4	11	1	1
APPROACH %'s :	4.52%	74.31%	21.17%	22.25%	71.05%	6.70%	24.85%	61.82%	13.33%	23.56%	29.18%	47.26%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	27	402	112	195	663	54	42	92	25	99	113	194	2018
PEAK HR FACTOR :		0.959			0.946			0.697			0.898		0.982

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-025
N/S Street: Catalina Ave
E/W Street: Torrance Blvd
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	3	2	3	1	0	1	3
7:15 AM	0	4	0	3	0	1	1	2
7:30 AM	5	4	1	1	0	0	3	0
7:45 AM	2	2	2	7	0	3	1	3
8:00 AM	0	2	2	1	2	0	14	5
8:15 AM	1	5	4	5	0	1	2	1
8:30 AM	1	4	5	6	0	0	4	21
8:45 AM	4	1	2	4	3	1	5	0
TOTALS	**15**	**25**	**18**	**30**	**6**	**6**	**31**	**35**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	1	0	0	0	0	0	1	0
7:15 AM	0	3	0	0	0	2	1	0	0	0	0	0
7:30 AM	0	1	0	0	4	1	0	1	0	0	1	0
7:45 AM	0	1	0	0	2	2	1	0	1	0	0	0
8:00 AM	1	1	1	0	1	0	1	0	0	0	1	0
8:15 AM	0	0	0	0	12	1	1	1	0	0	0	0
8:30 AM	0	0	0	1	2	0	0	0	0	0	1	0
8:45 AM	0	1	0	0	3	1	0	1	0	0	3	1
TOTALS	**1**	**7**	**1**	**1**	**25**	**7**	**4**	**3**	**1**	**0**	**7**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	3	6	6	0	1	2	3
4:15 PM	5	7	3	1	4	1	2	2
4:30 PM	3	9	0	6	0	0	5	3
4:45 PM	8	11	4	1	0	0	0	0
5:00 PM	4	7	5	0	0	0	2	1
5:15 PM	8	4	10	1	3	0	1	9
5:30 PM	8	6	3	2	0	0	2	3
5:45 PM	5	4	3	2	1	0	3	1
TOTALS	**42**	**51**	**34**	**19**	**8**	**2**	**17**	**22**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	1	0	0	1	0	0	0	0
4:15 PM	0	1	0	0	1	0	0	1	0	0	0	0
4:30 PM	0	0	0	0	1	1	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	2	0	0	0	1
5:00 PM	0	1	0	0	4	0	0	0	0	0	0	0
5:15 PM	0	0	0	1	2	0	0	2	0	0	2	0
5:30 PM	0	0	1	0	1	2	0	0	0	0	1	0
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**3**	**1**	**1**	**10**	**3**	**0**	**6**	**0**	**0**	**3**	**1**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-025 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	1	1	2	1	1	3	1	1	2	1					
7:00 AM	0	101	21	14	22	6	4	2	0	10	11	27	218	0	0	0	0
7:15 AM	2	104	27	16	26	3	0	4	0	14	13	24	233	0	0	0	0
7:30 AM	3	116	36	25	42	6	4	6	0	14	8	27	287	1	1	1	0
7:45 AM	3	126	33	42	60	5	1	4	1	16	14	43	348	0	1	0	0
8:00 AM	1	120	23	40	61	9	5	4	1	14	13	36	327	0	2	0	0
8:15 AM	3	127	32	29	50	6	2	6	1	17	15	41	329	0	1	0	0
8:30 AM	2	128	24	31	61	4	3	5	2	16	16	39	331	0	1	0	0
8:45 AM	3	143	29	40	72	8	3	4	5	18	18	40	383	0	2	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	17	965	225	237	394	47	22	35	10	119	108	277	2456	1	8	1	0
APPROACH %'s :	1.41%	79.95%	18.64%	34.96%	58.11%	6.93%	32.84%	52.24%	14.93%	23.61%	21.43%	54.96%					

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	9	518	108	140	244	27	13	19	9	65	62	156	1370
PEAK HR FACTOR :		0.907			0.856			0.854			0.931		0.894

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-025

Day: Friday

City: Redondo Beach

Date: 8/23/2013

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	1	1	2	1	1	3	1	1	2	1					
4:00 PM	8	106	25	47	146	20	15	30	4	20	21	54	496	2	2	0	0
4:15 PM	1	115	25	47	142	17	13	31	4	18	28	54	495	0	1	0	0
4:30 PM	9	118	37	40	181	8	10	24	5	25	35	68	560	0	0	1	0
4:45 PM	8	126	26	35	143	20	6	27	4	22	39	58	514	0	0	0	0
5:00 PM	7	121	27	49	180	11	5	33	5	32	22	54	546	0	1	0	0
5:15 PM	9	110	20	61	178	15	9	29	9	25	33	62	560	0	2	0	0
5:30 PM	8	114	29	45	181	19	7	24	6	26	37	48	544	2	3	1	0
5:45 PM	7	113	22	59	180	22	8	29	4	16	35	58	553	0	1	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	57	923	211	383	1331	132	73	227	41	184	250	456	4268	4	10	2	1
APPROACH %'s :	4.79%	77.50%	17.72%	20.75%	72.10%	7.15%	21.41%	66.57%	12.02%	20.67%	28.09%	51.24%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	31	458	98	214	719	67	29	115	24	99	127	222	2203
PEAK HR FACTOR :		0.947			0.958			0.894			0.933		0.983

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-025_Peds & Bikes
N/S Street: Catalina Ave
E/W Street: Torrance Blvd
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	6	3	2	3	2	0	3
7:15 AM	2	5	0	1	1	1	2	1
7:30 AM	1	3	0	4	0	0	2	2
7:45 AM	2	4	2	5	1	3	2	0
8:00 AM	1	2	1	3	2	1	1	0
8:15 AM	1	8	4	1	1	0	2	8
8:30 AM	3	0	6	7	1	2	1	3
8:45 AM	2	0	6	2	3	2	0	3
TOTALS	**12**	**28**	**22**	**25**	**12**	**11**	**10**	**20**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	1	0	0	3	1	0	2	0	0	0	3
7:15 AM	0	2	0	0	3	0	0	0	1	0	1	0
7:30 AM	0	2	0	0	2	0	0	0	0	1	1	0
7:45 AM	0	3	0	0	1	1	0	0	0	0	3	0
8:00 AM	0	3	0	1	0	0	0	1	0	0	1	0
8:15 AM	0	2	0	0	8	0	0	1	0	0	1	0
8:30 AM	0	0	0	0	1	0	0	0	0	0	1	0
8:45 AM	0	5	0	1	1	0	0	1	0	0	0	0
TOTALS	**0**	**18**	**0**	**2**	**19**	**2**	**0**	**5**	**1**	**1**	**8**	**3**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	8	6	5	0	1	1	4
4:15 PM	5	10	6	1	1	0	4	5
4:30 PM	4	4	2	9	4	2	4	0
4:45 PM	2	10	3	2	3	0	4	1
5:00 PM	3	11	12	3	1	0	3	5
5:15 PM	6	7	2	2	0	0	2	5
5:30 PM	5	3	4	4	1	2	9	3
5:45 PM	6	11	3	6	1	0	2	4
TOTALS	**32**	**64**	**38**	**32**	**11**	**5**	**29**	**27**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	2	0	0	3	0	0	2	0	1	0	0
4:15 PM	0	3	0	0	1	0	0	4	0	0	0	0
4:30 PM	0	3	0	1	1	0	0	2	0	0	1	0
4:45 PM	0	1	1	0	6	0	0	1	0	0	3	0
5:00 PM	2	0	1	1	6	1	0	1	0	0	2	0
5:15 PM	0	2	0	0	4	0	0	2	0	0	6	0
5:30 PM	1	0	0	0	0	0	1	0	0	1	1	0
5:45 PM	0	2	1	0	0	0	0	5	0	1	1	0
TOTALS	**3**	**13**	**3**	**2**	**21**	**1**	**1**	**17**	**0**	**3**	**14**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-026 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	2	0	1	2	1					
7:00 AM	2	327	11	21	140	4	18	36	7	14	39	71	690	0	0	2	0
7:15 AM	5	394	9	41	181	3	19	35	4	15	44	69	819	0	0	0	0
7:30 AM	8	361	13	43	167	6	11	79	5	19	55	72	839	0	0	0	0
7:45 AM	11	299	18	59	258	5	9	56	8	25	93	73	914	0	0	0	1
8:00 AM	13	277	14	55	213	8	11	74	17	33	85	49	849	0	0	0	1
8:15 AM	7	302	14	58	202	5	8	65	6	23	73	49	812	0	0	0	1
8:30 AM	12	329	20	56	185	3	18	92	6	41	81	56	899	0	0	0	1
8:45 AM	10	340	21	52	221	8	12	62	8	23	73	57	887	0	0	2	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	68	2629	120	385	1567	42	106	499	61	193	543	496	6709	0	0	4	4
APPROACH %'s :	2.41%	93.33%	4.26%	19.31%	78.59%	2.11%	15.92%	74.92%	9.16%	15.67%	44.07%	40.26%					

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	43	1207	66	228	858	21	46	287	37	122	332	227	3474
PEAK HR FACTOR :		0.911			0.859			0.797			0.891		0.950

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-026 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	2	0	1	2	1					
4:00 PM	13	215	29	74	327	14	15	72	18	29	72	61	939	0	0	0	3
4:15 PM	22	198	20	38	171	6	19	98	10	31	88	55	756	0	0	0	2
4:30 PM	13	249	25	55	253	6	18	91	11	27	71	53	872	0	0	2	8
4:45 PM	21	199	16	79	314	7	14	92	22	30	96	77	967	0	0	0	4
5:00 PM	15	245	27	82	369	9	21	91	9	32	86	77	1063	0	0	2	2
5:15 PM	16	231	22	85	335	12	16	95	22	36	117	76	1063	0	0	0	2
5:30 PM	16	239	20	71	360	10	22	93	19	45	117	65	1077	0	0	1	0
5:45 PM	14	227	20	71	346	8	12	87	17	43	104	83	1032	0	0	2	6
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	130	1803	179	555	2475	72	137	719	128	273	751	547	7769	0	0	7	27
APPROACH %'s :	6.16%	85.37%	8.48%	17.89%	79.79%	2.32%	13.92%	73.07%	13.01%	17.38%	47.80%	34.82%					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	61	942	89	309	1410	39	71	366	67	156	424	301	4235				
PEAK HR FACTOR :		0.951			0.955			0.940			0.958		0.983				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-026
N/S Street: Pacific Coast Hwy
E/W Street: Torrance Blvd
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	8	2	5	2	0	3	6
7:15 AM	0	4	1	2	0	1	4	1
7:30 AM	0	4	5	4	1	0	4	6
7:45 AM	0	2	2	1	2	3	2	1
8:00 AM	2	2	0	7	2	0	2	0
8:15 AM	0	5	1	4	4	1	5	1
8:30 AM	0	4	1	6	5	0	4	2
8:45 AM	3	1	4	4	2	1	1	2
TOTALS	**6**	**30**	**16**	**33**	**18**	**6**	**25**	**19**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	1	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	4	0	0	1	0	0	1	0
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	0
8:00 AM	0	0	0	0	2	0	0	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:30 AM	0	2	0	0	1	0	0	0	0	0	1	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	3	1
TOTALS	**0**	**3**	**0**	**0**	**8**	**0**	**0**	**3**	**1**	**0**	**7**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	6	4	3	3	6	0	1	1
4:15 PM	3	2	2	7	1	1	1	1
4:30 PM	0	4	4	9	6	1	1	0
4:45 PM	4	0	1	6	1	3	0	0
5:00 PM	5	2	5	7	0	0	4	1
5:15 PM	10	2	1	4	1	1	1	0
5:30 PM	3	2	21	6	2	0	1	0
5:45 PM	3	6	0	4	2	1	0	1
TOTALS	**34**	**22**	**37**	**46**	**19**	**7**	**9**	**4**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0
4:15 PM	1	0	0	0	0	0	2	1	0	0	1	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	4	0	0	4	0	0	2	0	0	0	1
5:00 PM	0	3	1	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	2	0	0	2	0
5:30 PM	0	1	0	0	0	0	2	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**1**	**9**	**1**	**0**	**4**	**0**	**4**	**6**	**0**	**0**	**4**	**1**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-026 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	2	0	1	2	1					
7:00 AM	6	276	12	26	112	8	20	37	3	15	47	46	608	0	0	1	0
7:15 AM	10	328	10	46	132	6	19	42	7	15	53	56	724	0	0	1	0
7:30 AM	7	303	10	54	133	5	13	63	11	18	54	65	736	0	0	0	0
7:45 AM	7	295	11	50	183	9	13	81	9	34	80	96	868	0	0	2	0
8:00 AM	10	269	19	45	185	9	13	66	10	27	69	70	792	0	0	1	2
8:15 AM	10	273	19	44	193	9	14	67	10	25	69	69	802	0	0	2	0
8:30 AM	9	273	18	54	190	8	21	55	12	25	63	71	799	0	0	2	2
8:45 AM	10	314	27	70	222	8	15	82	6	28	70	76	928	0	0	1	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	69	2331	126	389	1350	62	128	493	68	187	505	549	6257	0	0	10	7
APPROACH %'s :	2.73%	92.28%	4.99%	21.60%	74.96%	3.44%	18.58%	71.55%	9.87%	15.07%	40.69%	44.24%					

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	39	1129	83	213	790	34	63	270	38	105	271	286	3321
PEAK HR FACTOR :		0.891			0.864			0.900			0.951		0.895

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-026 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	2	0	1	2	1					
4:00 PM	22	187	22	60	285	12	24	99	10	33	88	60	902	0	0	0	1
4:15 PM	13	252	27	65	326	13	23	93	14	33	113	56	1028	0	0	0	4
4:30 PM	17	235	12	75	327	11	20	97	13	19	123	59	1008	0	0	3	0
4:45 PM	14	220	19	80	323	17	16	81	19	34	134	70	1027	0	0	1	4
5:00 PM	30	227	32	77	318	11	15	93	12	34	87	49	985	0	0	2	1
5:15 PM	20	256	43	60	330	11	11	96	23	38	114	68	1070	0	0	1	4
5:30 PM	19	202	18	74	316	13	16	83	14	45	113	47	960	0	0	1	3
5:45 PM	12	216	25	68	331	19	18	94	19	30	128	76	1036	0	0	2	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	147	1795	198	559	2556	107	143	736	124	266	900	485	8016	0	0	10	18
APPROACH %'s :	6.87%	83.88%	9.25%	17.35%	79.33%	3.32%	14.26%	73.38%	12.36%	16.11%	54.51%	29.38%					
PEAK HR START TIME :	430 PM												TOTAL				
PEAK HR VOL :	81	938	106	292	1298	50	62	367	67	125	458	246	4090				
PEAK HR FACTOR :		0.882			0.976			0.954			0.871		0.956				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-026_Peds & Bikes
N/S Street: Pacific Coast Hwy
E/W Street: Torrance Blvd
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	1	1	0	0	2	0	2
7:15 AM	2	5	0	3	3	1	0	0
7:30 AM	2	3	2	0	1	1	0	2
7:45 AM	3	3	2	2	3	3	0	1
8:00 AM	5	5	4	3	3	6	1	1
8:15 AM	3	2	2	2	0	1	0	0
8:30 AM	8	1	7	2	1	1	0	5
8:45 AM	6	1	10	1	1	4	1	4
TOTALS	**31**	**21**	**28**	**13**	**12**	**19**	**2**	**15**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	1	0	0	3	0
7:15 AM	0	1	0	0	2	0	0	0	0	0	4	0
7:30 AM	0	0	0	0	0	0	0	0	0	1	3	0
7:45 AM	0	0	0	0	0	0	1	2	0	0	2	0
8:00 AM	0	0	0	0	0	0	0	4	0	0	3	0
8:15 AM	0	0	0	0	0	0	0	1	0	2	2	0
8:30 AM	0	1	0	0	0	0	0	1	0	1	1	0
8:45 AM	0	1	0	0	0	0	0	2	0	0	1	0
TOTALS	**0**	**3**	**0**	**0**	**2**	**0**	**1**	**11**	**0**	**4**	**19**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	6	10	1	2	3	2	1	1
4:15 PM	2	4	4	4	0	1	1	2
4:30 PM	2	3	6	2	3	2	1	2
4:45 PM	4	2	6	1	1	4	0	2
5:00 PM	6	5	7	1	3	1	4	4
5:15 PM	8	3	6	1	1	2	1	0
5:30 PM	2	1	4	7	0	7	3	4
5:45 PM	6	2	3	7	2	3	6	0
TOTALS	**36**	**30**	**37**	**25**	**13**	**22**	**17**	**15**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	0	1	0	0	4	1	0	1	1
4:15 PM	0	1	0	0	2	0	0	0	0	0	2	0
4:30 PM	2	2	0	1	0	0	0	6	0	0	0	0
4:45 PM	3	2	1	0	0	0	0	2	0	0	2	0
5:00 PM	0	0	0	0	0	0	0	5	0	0	0	0
5:15 PM	1	0	0	0	0	0	0	3	0	0	4	0
5:30 PM	0	0	0	1	0	0	0	1	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	4	0	0	1	0
TOTALS	**6**	**6**	**1**	**2**	**3**	**0**	**0**	**25**	**1**	**0**	**11**	**2**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-027 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Helberta Ave/Camino Real			Helberta Ave/Camino Real			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1.5	.5	0	0	1	0	1	2	0	1	2	0					
7:00 AM	33	2	3	1	3	1	0	71	10	4	97	1	226	0	0	0	1
7:15 AM	49	3	5	1	2	6	2	93	12	2	95	0	270	0	0	0	0
7:30 AM	55	27	13	5	13	1	4	122	26	1	117	5	389	0	0	1	0
7:45 AM	62	19	10	6	35	3	6	144	27	10	188	17	527	0	0	0	0
8:00 AM	41	11	7	7	11	6	1	133	23	7	130	2	379	0	0	0	0
8:15 AM	40	6	11	3	8	5	5	124	30	2	116	3	353	0	0	0	1
8:30 AM	38	6	9	5	9	2	8	145	31	10	126	3	392	0	0	1	0
8:45 AM	40	3	3	3	6	7	1	130	17	7	146	2	365	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	358	77	61	31	87	31	27	962	176	43	1015	33	2901	0	0	2	2
APPROACH %'s :	72.18%	15.52%	12.30%	20.81%	58.39%	20.81%	2.32%	82.58%	15.11%	3.94%	93.03%	3.02%					

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	181	42	37	21	63	16	20	546	111	29	560	25	1651
PEAK HR FACTOR :		0.714			0.568			0.920			0.714		0.783

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-027 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Helberta Ave/Camino Real			Helberta Ave/Camino Real			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1.5	.5	0	0	1	0	1	2	0	1	2	0					
4:00 PM	34	3	12	3	10	1	2	154	32	4	135	2	392	0	0	0	0
4:15 PM	41	4	4	3	2	3	3	128	27	7	124	3	349	0	0	1	0
4:30 PM	37	2	9	3	8	2	3	165	28	17	141	3	418	0	0	0	0
4:45 PM	31	4	12	3	3	7	2	155	31	5	171	1	425	0	0	0	0
5:00 PM	42	7	9	3	5	2	1	189	45	11	164	3	481	0	0	0	3
5:15 PM	69	9	4	7	7	2	3	159	33	7	178	2	480	0	0	1	0
5:30 PM	53	5	10	7	3	3	4	151	43	11	169	2	461	0	0	0	0
5:45 PM	51	3	8	4	2	1	4	154	21	6	170	1	425	0	0	1	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	358	37	68	33	40	21	22	1255	260	68	1252	17	3431	0	0	3	3
APPROACH %'s :	77.32%	7.99%	14.69%	35.11%	42.55%	22.34%	1.43%	81.65%	16.92%	5.09%	93.64%	1.27%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	215	24	31	21	17	8	12	653	142	35	681	8	1847
PEAK HR FACTOR :		0.823			0.719			0.859			0.968		0.960

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-027
N/S Street: Helberta Ave/Camino Real
E/W Street: Torrance Blvd
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	2	3	2	0	0	0	1
7:15 AM	6	3	2	2	2	2	0	0
7:30 AM	0	6	0	0	1	0	0	2
7:45 AM	2	3	3	1	0	0	1	8
8:00 AM	0	1	2	3	3	1	0	1
8:15 AM	1	8	4	1	2	1	0	5
8:30 AM	0	4	3	1	3	0	0	4
8:45 AM	3	1	0	0	0	0	2	0
TOTALS	**12**	**28**	**17**	**10**	**11**	**4**	**3**	**21**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	1	0	1	0	0	2	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0
7:30 AM	1	3	0	0	0	0	0	0	0	0	1	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	2	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	4	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0
TOTALS	**1**	**4**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**12**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	2	0	3	1	0	4	1	1
4:15 PM	1	0	1	3	0	1	3	0
4:30 PM	1	1	3	1	2	0	0	0
4:45 PM	1	2	1	2	0	0	1	1
5:00 PM	3	6	0	3	1	0	5	0
5:15 PM	0	1	3	1	0	0	0	1
5:30 PM	2	2	3	5	1	0	1	2
5:45 PM	0	2	2	0	0	0	0	0
TOTALS	**10**	**14**	**16**	**16**	**4**	**5**	**11**	**5**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	1	0	0	2	0	0	2	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	2	0	0	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	0	1	0	0	4	0
5:15 PM	0	0	0	0	0	0	0	3	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	2	0	0	2	0
5:45 PM	0	0	0	0	0	0	0	2	0	0	1	0
TOTALS	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**13**	**0**	**0**	**11**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-027 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Helberta Ave			Helberta Ave			Torrance Blvd			Torrance Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	.5	0	0	1	0	1	2	0	1	2	0	
7:00 AM	31	2	1	0	1	1	3	67	14	2	87	0	209
7:15 AM	34	2	3	3	1	1	2	91	11	6	104	0	258
7:30 AM	35	3	7	0	2	5	3	128	19	5	104	1	312
7:45 AM	59	5	7	3	3	1	4	118	29	6	178	5	418
8:00 AM	48	2	5	2	8	2	6	117	24	7	119	3	343
8:15 AM	50	7	3	1	5	3	1	121	15	7	109	3	325
8:30 AM	40	5	6	5	3	5	5	110	29	10	127	1	346
8:45 AM	48	3	8	3	4	2	1	155	46	6	136	6	418
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	345	29	40	17	27	20	25	907	187	49	964	19	2629
APPROACH %'s :	83.33%	7.00%	9.66%	26.56%	42.19%	31.25%	2.23%	81.05%	16.71%	4.75%	93.41%	1.84%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	186	17	22	11	20	12	13	503	114	30	491	13	1432
PEAK HR FACTOR :		0.938			0.827			0.780			0.902		0.856

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-027 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Helberta Ave			Helberta Ave			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1.5	.5	0	0	1	0	1	2	0	1	2	0					
4:00 PM	38	5	9	6	5	3	5	165	40	8	145	1	430				
4:15 PM	55	8	5	4	4	3	4	173	24	7	145	3	435				
4:30 PM	42	3	5	6	11	4	4	184	32	4	169	2	466				
4:45 PM	63	7	10	5	3	4	4	151	33	12	165	3	460				
5:00 PM	50	7	7	5	6	1	2	176	40	13	137	5	449				
5:15 PM	55	9	9	5	5	4	3	168	43	13	176	1	491				
5:30 PM	46	9	6	4	7	4	4	174	39	10	176	4	483				
5:45 PM	66	5	6	5	10	2	2	154	36	9	166	6	467				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	415	53	57	40	51	25	28	1345	287	76	1279	25	3681	0	0	0	0
APPROACH %'s :	79.05%	10.10%	10.86%	34.48%	43.97%	21.55%	1.69%	81.02%	17.29%	5.51%	92.68%	1.81%					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	217	30	28	19	28	11	11	672	158	45	655	16	1890				
PEAK HR FACTOR :		0.893			0.853			0.964			0.942		0.962				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-027_Peds & Bikes
N/S Street: Helberta Ave
E/W Street: Torrance Blvd
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	1	0	0	0	0	0	0
7:15 AM	1	6	1	1	0	0	0	1
7:30 AM	1	1	2	1	1	0	1	0
7:45 AM	0	1	3	5	1	1	0	4
8:00 AM	2	6	2	3	0	2	1	1
8:15 AM	6	0	3	2	2	2	0	0
8:30 AM	2	2	0	1	0	1	2	0
8:45 AM	2	0	8	2	0	0	0	0
TOTALS	**15**	**17**	**19**	**15**	**4**	**6**	**4**	**6**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	1	0	0	0	0	0	0	1	0	0	2	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	4	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	4	0
7:45 AM	0	1	0	0	0	0	0	1	1	1	1	0
8:00 AM	0	0	0	0	0	0	0	4	0	0	3	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	3	0
8:30 AM	0	0	1	0	0	0	0	1	0	0	2	0
8:45 AM	1	0	0	0	0	0	0	3	0	0	1	0
TOTALS	**2**	**1**	**1**	**0**	**0**	**0**	**0**	**10**	**1**	**1**	**20**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	0	2	0	2	0	0	1
4:15 PM	0	1	1	1	0	0	0	0
4:30 PM	2	1	3	0	1	0	3	3
4:45 PM	0	0	4	0	0	0	0	0
5:00 PM	2	6	3	0	0	0	2	0
5:15 PM	0	0	4	3	2	0	0	0
5:30 PM	5	0	0	4	0	1	3	0
5:45 PM	1	2	0	1	0	1	0	0
TOTALS	**11**	**10**	**17**	**9**	**5**	**2**	**8**	**4**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	1	2	0	0	2	0
4:15 PM	0	1	0	0	0	0	0	2	0	0	3	0
4:30 PM	0	0	0	0	0	1	0	5	0	0	2	0
4:45 PM	0	0	0	0	0	0	0	3	0	0	1	0
5:00 PM	0	0	0	0	0	1	0	3	1	0	1	0
5:15 PM	2	0	0	0	0	0	0	1	1	0	3	0
5:30 PM	0	2	0	0	1	0	0	2	1	0	2	0
5:45 PM	0	0	0	0	0	0	0	2	0	0	1	0
TOTALS	**2**	**3**	**0**	**0**	**1**	**2**	**1**	**20**	**3**	**0**	**15**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-028

Day: Thursday

City: Redondo Beach

Date: 3/20/2014

AM

NS/EW Streets:	Prospect Ave			Prospect Ave			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	2	0	1	2	0					
7:00 AM	4	111	26	17	52	10	5	68	1	14	85	28	421	0	0	0	3
7:15 AM	5	141	40	25	76	8	20	75	2	16	79	42	529	0	0	0	3
7:30 AM	15	204	91	40	122	8	35	131	4	28	115	44	837	0	0	0	10
7:45 AM	23	176	81	81	214	26	19	135	9	60	185	35	1044	0	0	0	38
8:00 AM	10	166	34	41	149	17	24	143	6	46	148	48	832	0	0	0	3
8:15 AM	6	162	35	36	101	14	28	126	3	20	126	41	698	0	0	0	2
8:30 AM	7	155	24	17	100	24	26	152	0	29	128	44	706	0	0	1	3
8:45 AM	9	168	18	47	121	29	28	104	3	24	121	37	709	0	0	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	79	1283	349	304	935	136	185	934	28	237	987	319	5776	0	0	1	65
APPROACH %'s :	4.62%	74.99%	20.40%	22.11%	68.00%	9.89%	16.13%	81.43%	2.44%	15.36%	63.97%	20.67%					

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	54	708	241	198	586	65	106	535	22	154	574	168	3411
PEAK HR FACTOR :		0.809			0.661			0.958			0.800		0.817

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-028 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Prospect Ave			Prospect Ave			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	2	0	1	2	0					
4:00 PM	13	125	23	42	157	19	20	132	7	39	126	30	733	0	0	1	4
4:15 PM	13	80	28	22	136	29	20	134	12	36	121	37	668	0	0	0	3
4:30 PM	10	93	29	46	153	27	26	135	11	39	133	44	746	0	0	0	2
4:45 PM	10	116	18	47	202	26	15	164	10	45	166	35	854	0	0	0	2
5:00 PM	8	131	27	56	195	29	35	146	11	47	159	51	895	0	0	0	3
5:15 PM	12	128	25	51	170	28	22	152	11	30	175	38	842	0	0	0	0
5:30 PM	14	119	29	46	197	42	19	169	7	43	170	36	891	0	0	0	5
5:45 PM	11	138	31	54	180	33	16	139	14	50	156	43	865	0	0	0	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	91	930	210	364	1390	233	173	1171	83	329	1206	314	6494	0	0	1	21
APPROACH %'s :	7.39%	75.55%	17.06%	18.32%	69.95%	11.73%	12.12%	82.06%	5.82%	17.79%	65.22%	16.98%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	45	516	112	207	742	132	92	606	43	170	660	168	3493
PEAK HR FACTOR :		0.935			0.948			0.950			0.971		0.976

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-028
N/S Street: Prospect Ave
E/W Street: Torrance Blvd
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	4	1	1	0	0	1	0
7:15 AM	1	1	2	3	0	0	5	0
7:30 AM	6	4	0	3	10	4	8	1
7:45 AM	1	1	3	0	3	1	5	0
8:00 AM	1	2	0	0	0	2	0	0
8:15 AM	1	1	1	1	0	1	1	0
8:30 AM	1	1	0	1	0	2	3	2
8:45 AM	1	1	0	1	1	0	1	1
TOTALS	**12**	**15**	**7**	**10**	**14**	**10**	**24**	**4**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	1	0	0	0	0	0	0	1	0	0	2	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	10	0	1	0	0	0	0	0	0	2	0
7:45 AM	0	3	0	0	1	0	0	0	0	0	1	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	1	0	0	2	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	1	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0
TOTALS	**1**	**13**	**0**	**1**	**1**	**0**	**0**	**3**	**0**	**0**	**10**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	6	0	4	3	3	19	1	11
3:15 PM	2	1	1	1	0	5	1	8
3:30 PM	3	0	9	3	2	0	0	1
3:45 PM	0	0	2	0	0	0	0	5
4:00 PM	3	3	1	3	2	4	0	3
4:15 PM	9	3	1	1	1	3	6	0
4:30 PM	1	4	3	0	5	7	0	5
4:45 PM	4	0	1	4	0	2	0	0
5:00 PM	4	4	0	1	0	1	0	0
5:15 PM	0	1	1	1	1	1	3	0
5:30 PM	2	2	1	0	0	1	2	1
5:45 PM	1	8	1	0	5	1	0	1
TOTALS	**35**	**26**	**25**	**17**	**19**	**44**	**13**	**35**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
3:00 PM	0	0	1	1	5	0	0	2	1	0	0	0
3:15 PM	0	2	1	0	1	0	0	1	1	0	0	0
3:30 PM	0	0	1	0	1	0	0	5	0	0	1	0
3:45 PM	0	0	0	0	0	1	0	0	0	0	2	0
4:00 PM	0	0	0	0	0	0	0	2	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	1	1	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	0	2	0	1	0	0
5:15 PM	0	0	0	0	1	0	0	1	0	0	1	0
5:30 PM	0	0	0	0	1	0	0	4	0	0	1	0
5:45 PM	0	0	0	0	1	0	0	0	1	2	1	0
TOTALS	**0**	**2**	**3**	**1**	**11**	**2**	**0**	**17**	**3**	**3**	**9**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-028 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Prospect Ave			Prospect Ave			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	2	0	1	2	0					
7:00 AM	5	83	29	20	30	8	7	66	0	7	93	14	362	0	0	0	3
7:15 AM	12	93	42	30	46	12	13	93	4	13	93	20	471	0	0	0	4
7:30 AM	7	99	100	58	50	14	18	116	9	59	113	34	677	0	0	0	50
7:45 AM	15	121	53	52	85	24	18	125	2	45	167	37	744	0	0	0	27
8:00 AM	9	130	28	34	94	25	16	115	5	16	98	34	604	0	0	1	1
8:15 AM	5	121	28	28	85	18	16	125	6	30	101	42	605	0	0	0	5
8:30 AM	11	106	24	31	70	14	19	117	7	27	135	38	599	0	0	0	3
8:45 AM	5	144	36	44	139	24	21	152	6	31	135	42	779	0	0	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	69	897	340	297	599	139	128	909	39	228	935	261	4841	0	0	1	97
APPROACH %'s :	5.28%	68.68%	26.03%	28.70%	57.87%	13.43%	11.90%	84.48%	3.62%	16.01%	65.66%	18.33%					

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	36	471	209	172	314	81	68	481	22	150	479	147	2630
PEAK HR FACTOR :		0.869			0.880			0.971			0.779		0.884

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-028

Day: Friday

City: Redondo Beach

Date: 8/23/2013

PM

NS/EW Streets:	Prospect Ave			Prospect Ave			Torrance Blvd			Torrance Blvd				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	2	0	1	2	0					
4:00 PM	5	109	23	35	114	21	25	167	12	27	144	39	721	0	0	0	3
4:15 PM	9	109	26	60	158	20	21	145	13	40	135	47	783	0	0	1	4
4:30 PM	12	103	19	46	140	25	21	160	11	31	189	46	803	0	0	0	1
4:45 PM	14	99	17	47	142	41	21	159	9	24	162	38	773	0	0	0	1
5:00 PM	5	102	26	53	145	21	23	163	11	29	120	36	734	0	0	0	1
5:15 PM	12	117	19	47	162	36	18	151	15	42	174	53	846	0	0	1	2
5:30 PM	11	98	31	51	169	26	23	156	9	34	186	39	833	0	0	0	2
5:45 PM	10	85	28	49	148	40	20	134	14	39	157	28	752	0	0	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	78	822	189	388	1178	230	172	1235	94	266	1267	326	6245	0	0	2	15
APPROACH %'s :	7.16%	75.48%	17.36%	21.60%	65.59%	12.81%	11.46%	82.28%	6.26%	14.31%	68.15%	17.54%					
PEAK HR START TIME :	445 PM												TOTAL				
PEAK HR VOL :	42	416	93	198	618	124	85	629	44	129	642	166	3186				
PEAK HR FACTOR :		0.931			0.955			0.962			0.871		0.941				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-028_Peds & Bikes
N/S Street: Prospect Ave
E/W Street: Torrance Blvd
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	4	1	0	2	1	0	1
7:15 AM	2	6	2	0	2	1	1	6
7:30 AM	4	1	3	0	2	4	0	2
7:45 AM	0	2	6	1	5	1	0	0
8:00 AM	2	4	1	0	0	0	1	0
8:15 AM	0	1	2	1	2	1	0	1
8:30 AM	0	1	1	1	2	0	1	1
8:45 AM	2	2	2	1	1	0	1	0
TOTALS	**11**	**21**	**18**	**4**	**16**	**8**	**4**	**11**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	1	1	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	5	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	3	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0
8:00 AM	0	1	1	0	1	0	0	3	0	0	2	0
8:15 AM	0	0	0	0	1	0	0	0	0	0	2	0
8:30 AM	0	1	0	0	0	0	0	2	0	0	1	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	1	0
TOTALS	**0**	**3**	**2**	**1**	**2**	**0**	**0**	**6**	**0**	**0**	**16**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	6	5	0	0
4:15 PM	0	1	0	2	1	1	0	2
4:30 PM	1	0	2	1	7	6	0	0
4:45 PM	2	0	2	1	0	0	0	2
5:00 PM	0	0	1	0	7	7	0	1
5:15 PM	0	0	1	0	1	1	0	0
5:30 PM	0	0	0	1	1	3	0	0
5:45 PM	0	2	1	0	1	0	1	0
TOTALS	**3**	**3**	**7**	**5**	**24**	**23**	**1**	**5**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	4	0	0	1	0
4:15 PM	0	0	0	0	1	0	0	2	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	3	0	0	1	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	1	0
5:00 PM	0	0	0	1	2	0	0	4	0	0	1	0
5:15 PM	0	2	1	0	0	0	0	1	0	0	2	0
5:30 PM	0	0	0	0	0	0	0	1	0	0	2	0
5:45 PM	0	1	0	0	0	0	0	2	0	0	0	0
TOTALS	**0**	**3**	**1**	**1**	**3**	**0**	**0**	**18**	**0**	**0**	**9**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-029 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Pearl St			Pearl St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	1.5	.5	0	0	1	0	
7:00 AM	0	70	0	1	19	22	28	2	0	0	0	3	145
7:15 AM	2	123	2	1	18	16	31	4	1	0	1	1	200
7:30 AM	0	143	3	1	25	14	44	1	0	0	3	1	235
7:45 AM	1	177	2	1	49	34	48	3	0	0	2	5	322
8:00 AM	0	140	3	0	50	34	37	0	2	0	4	1	271
8:15 AM	1	141	2	0	44	37	57	3	1	0	3	4	293
8:30 AM	5	138	2	4	46	34	64	6	2	0	3	2	306
8:45 AM	4	106	2	4	46	36	54	1	0	0	2	2	257
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	13	1038	16	12	297	227	363	20	6	0	18	19	2029
APPROACH %'s :	1.22%	97.28%	1.50%	2.24%	55.41%	42.35%	93.32%	5.14%	1.54%	0.00%	48.65%	51.35%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	7	596	9	5	189	139	206	12	5	0	12	12	1192
PEAK HR FACTOR :		0.850			0.991			0.774			0.857		0.925

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-029 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Pearl St			Pearl St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	1.5	.5	0	0	1	0	
4:00 PM	1	60	1	6	109	51	38	4	0	1	1	3	275
4:15 PM	0	59	4	8	85	40	37	2	0	0	2	3	240
4:30 PM	0	72	3	5	119	50	38	5	3	1	4	6	306
4:45 PM	0	68	1	6	140	54	31	2	2	2	0	5	311
5:00 PM	2	68	1	4	136	55	43	6	1	2	2	6	326
5:15 PM	0	100	4	12	141	57	37	2	2	0	3	2	360
5:30 PM	1	74	7	4	142	59	45	4	0	0	2	5	343
5:45 PM	0	94	0	8	126	72	29	4	1	0	0	1	335
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	595	21	53	998	438	298	29	9	6	14	31	2496
APPROACH %'s :	0.65%	95.97%	3.39%	3.56%	67.02%	29.42%	88.69%	8.63%	2.68%	11.76%	27.45%	60.78%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	3	336	12	28	545	243	154	16	4	2	7	14	1364
PEAK HR FACTOR :		0.844			0.971			0.870			0.575		0.947

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-029
N/S Street: Catalina Ave
E/W Street: Pearl St
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	1	1	1	0	0	0	0
7:15 AM	1	2	1	1	0	0	0	0
7:30 AM	1	2	1	1	0	2	0	0
7:45 AM	0	2	1	4	1	1	2	0
8:00 AM	2	8	0	5	2	0	1	1
8:15 AM	3	3	1	4	2	0	4	0
8:30 AM	3	0	0	2	1	0	1	0
8:45 AM	2	3	0	2	1	0	1	0
TOTALS	**13**	**21**	**5**	**20**	**7**	**3**	**9**	**1**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:15 AM	0	4	0	0	0	0	1	0	0	0	1	0
7:30 AM	0	3	0	0	3	0	0	0	0	0	0	0
7:45 AM	0	0	0	1	0	0	1	0	0	0	0	1
8:00 AM	0	3	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	2	0	0	10	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	1	0	3	0	0	0	1	0
8:45 AM	0	2	0	0	2	0	2	0	1	0	1	0
TOTALS	**0**	**15**	**0**	**1**	**17**	**0**	**7**	**0**	**1**	**0**	**3**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	5	3	0	1	1	3	0	0
4:15 PM	2	1	0	0	0	0	0	2
4:30 PM	0	3	3	0	0	3	0	3
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	4	3	1	1	2	2	0	0
5:15 PM	5	0	0	0	1	2	0	3
5:30 PM	0	0	1	3	0	0	3	0
5:45 PM	0	1	0	0	2	0	1	0
TOTALS	**16**	**11**	**5**	**5**	**6**	**10**	**4**	**8**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0
4:15 PM	0	1	0	0	0	1	0	1	0	0	0	0
4:30 PM	0	2	0	0	1	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	1	0
5:00 PM	0	1	0	0	2	0	0	0	0	0	1	0
5:15 PM	0	0	0	0	1	0	2	1	0	0	0	0
5:30 PM	0	1	0	0	0	1	2	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0
TOTALS	**0**	**6**	**0**	**0**	**4**	**2**	**5**	**3**	**0**	**0**	**2**	**1**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-029 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Pearl St			Pearl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	1	1	0	1.5	.5	0	0	1	0					
7:00 AM	0	89	2	2	17	16	35	1	1	0	2	2	167				
7:15 AM	0	92	1	1	18	19	41	3	1	0	1	3	180				
7:30 AM	1	93	2	3	33	18	62	2	0	0	4	2	220				
7:45 AM	0	122	2	4	44	31	37	2	0	0	1	6	249				
8:00 AM	0	107	0	1	43	33	36	3	0	0	0	4	227				
8:15 AM	0	102	6	3	37	30	51	2	1	2	2	5	241				
8:30 AM	1	110	1	3	42	36	44	1	0	1	0	5	244				
8:45 AM	1	102	1	4	51	37	62	2	1	3	0	7	271				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	3	817	15	21	285	220	368	16	4	6	10	34	1799	0	0	0	0
APPROACH %'s :	0.36%	97.84%	1.80%	3.99%	54.18%	41.83%	94.85%	4.12%	1.03%	12.00%	20.00%	68.00%					
PEAK HR START TIME :	800 AM												TOTAL				
PEAK HR VOL :	2	421	8	11	173	136	193	8	2	6	2	21	983				
PEAK HR FACTOR :		0.962			0.870			0.781			0.725		0.907				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-029 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Pearl St			Pearl St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	1	0	1.5	.5	0	0	1	0	
4:00 PM	2	82	3	1	112	59	56	3	1	0	1	4	324
4:15 PM	0	78	3	1	103	57	58	1	1	2	2	3	309
4:30 PM	0	94	0	8	131	75	60	3	0	0	2	6	379
4:45 PM	0	102	2	3	102	65	55	2	0	0	1	6	338
5:00 PM	0	92	1	5	127	82	64	4	0	1	2	2	380
5:15 PM	1	85	2	13	137	58	53	2	0	0	0	4	355
5:30 PM	2	109	3	7	130	76	43	0	3	0	4	2	379
5:45 PM	0	80	3	5	134	58	60	4	0	3	3	5	355
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	722	17	43	976	530	449	19	5	6	15	32	2819
APPROACH %'s :	0.67%	97.04%	2.28%	2.78%	63.01%	34.22%	94.93%	4.02%	1.06%	11.32%	28.30%	60.38%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	3	366	9	30	528	274	220	10	3	4	9	13	1469
PEAK HR FACTOR :		0.829			0.972			0.857			0.591		0.966

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-029_Peds & Bikes
N/S Street: Catalina Ave
E/W Street: Pearl St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	0	1	0	0	0	1	0
7:15 AM	1	6	0	0	0	0	0	0
7:30 AM	0	7	1	4	3	1	0	0
7:45 AM	1	2	1	0	2	0	0	0
8:00 AM	4	1	0	3	0	2	0	0
8:15 AM	0	6	0	3	0	2	9	1
8:30 AM	4	2	1	1	0	1	0	3
8:45 AM	2	3	1	4	1	0	1	1
TOTALS	**14**	**27**	**5**	**15**	**6**	**6**	**11**	**5**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	1	0	1	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	1	1	1	1	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	5	0	0	1	0	0	0	0	0	1	0
8:00 AM	0	4	0	0	0	0	0	0	0	0	0	0
8:15 AM	1	1	0	0	6	0	1	1	0	0	0	0
8:30 AM	0	2	0	0	0	1	0	1	0	0	0	0
8:45 AM	0	3	0	0	0	1	0	0	0	0	0	0
TOTALS	**1**	**17**	**0**	**2**	**8**	**3**	**2**	**3**	**0**	**0**	**1**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	3	2	4	0	0	3	3
4:15 PM	1	1	2	0	0	0	1	1
4:30 PM	1	0	5	3	3	0	0	0
4:45 PM	1	1	0	0	2	0	0	1
5:00 PM	1	1	1	0	0	0	4	1
5:15 PM	3	3	1	2	0	0	0	0
5:30 PM	0	10	6	2	4	1	0	2
5:45 PM	1	7	1	3	3	1	1	0
TOTALS	**8**	**26**	**18**	**14**	**12**	**2**	**9**	**8**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	2	1	0	1	0	0	1	0
4:15 PM	0	2	0	0	1	0	1	2	0	1	0	0
4:30 PM	0	2	0	0	0	1	1	0	0	0	0	0
4:45 PM	1	2	0	0	0	0	0	2	0	0	0	0
5:00 PM	0	4	0	0	0	4	2	0	0	0	0	0
5:15 PM	1	2	0	0	4	0	0	4	0	0	0	0
5:30 PM	0	1	0	0	0	0	0	2	1	0	2	0
5:45 PM	0	5	0	0	1	0	1	1	1	0	0	0
TOTALS	**2**	**18**	**0**	**0**	**8**	**6**	**5**	**12**	**2**	**1**	**3**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-030 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Camino Real			Camino Real			Pearl St			Pearl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	0	1	0	0	1	0					
7:00 AM	6	32	0	1	13	0	1	4	5	0	4	3	69				
7:15 AM	10	53	0	0	14	0	2	5	1	0	2	5	92				
7:30 AM	4	87	2	0	41	1	5	4	8	2	3	9	166				
7:45 AM	10	69	2	4	57	2	3	3	9	1	4	11	175				
8:00 AM	7	54	0	0	30	2	4	6	12	1	2	1	119				
8:15 AM	8	49	0	0	44	1	2	3	18	0	5	3	133				
8:30 AM	4	44	1	1	39	5	5	11	10	1	3	2	126				
8:45 AM	3	42	2	3	27	1	1	1	7	1	2	2	92				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	52	430	7	9	265	12	23	37	70	6	25	36	972	0	0	0	0
APPROACH %'s :	10.63%	87.93%	1.43%	3.15%	92.66%	4.20%	17.69%	28.46%	53.85%	8.96%	37.31%	53.73%					

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	29	259	4	4	172	6	14	16	47	4	14	24	593
PEAK HR FACTOR :		0.785			0.722			0.837			0.656		0.847

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-030 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Camino Real			Camino Real			Pearl St			Pearl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	0	1	0	0	1	0					
4:00 PM	6	34	0	2	45	3	3	10	17	1	6	1	128				
4:15 PM	4	43	0	2	31	3	1	9	9	2	10	5	119				
4:30 PM	7	41	1	0	40	9	5	5	12	1	4	2	127				
4:45 PM	4	36	0	0	32	1	2	8	19	0	10	5	117				
5:00 PM	4	54	0	2	58	2	5	4	14	1	5	3	152				
5:15 PM	3	72	0	0	48	0	2	10	18	2	7	1	163				
5:30 PM	7	53	1	1	53	5	2	8	13	0	10	6	159				
5:45 PM	4	58	1	0	35	1	2	11	17	2	3	2	136				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	39	391	3	7	342	24	22	65	119	9	55	25	1101	0	0	0	0
APPROACH %'s :	9.01%	90.30%	0.69%	1.88%	91.69%	6.43%	10.68%	31.55%	57.77%	10.11%	61.80%	28.09%					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	18	237	2	3	194	8	11	33	62	5	25	12	610				
PEAK HR FACTOR :		0.857			0.827			0.883			0.656		0.936				

CONTROL : 4-Way Stop

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-030
N/S Street: Camino Real
E/W Street: Pearl St
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	0	0	1	2	0	0	0
7:15 AM	1	0	0	1	0	1	0	0
7:30 AM	0	0	0	0	0	0	1	1
7:45 AM	0	2	0	0	0	1	1	1
8:00 AM	1	2	0	0	0	0	0	0
8:15 AM	0	0	0	1	0	0	2	1
8:30 AM	1	2	0	0	0	0	1	1
8:45 AM	0	0	1	1	1	0	0	2
TOTALS	**5**	**6**	**1**	**4**	**3**	**2**	**5**	**6**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	1	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	4	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	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
8:15 AM	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
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	0	1	0	0
4:15 PM	1	0	0	0	0	1	0	0
4:30 PM	0	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	1	0	0	0	0
5:15 PM	0	2	2	0	0	0	1	2
5:30 PM	2	0	0	1	0	1	0	2
5:45 PM	0	2	0	0	1	0	0	0
TOTALS	**3**	**4**	**3**	**2**	**1**	**3**	**1**	**5**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	1	1	0	0	1	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	0	0	0	0	1	0	0	0
4:30 PM	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
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:30 PM	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
TOTALS	**1**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-030 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Helberta Ave			Helberta Ave			Pearl St			Pearl St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	0	1	0	0	1	0					
7:00 AM	6	37	0	1	19	0	0	4	5	0	6	3	81				
7:15 AM	3	34	0	1	11	1	0	5	7	0	3	2	67				
7:30 AM	7	41	0	0	24	0	3	4	6	0	4	3	92				
7:45 AM	10	66	1	0	34	1	2	2	8	1	2	2	129				
8:00 AM	6	48	0	0	32	1	1	6	12	0	2	1	109				
8:15 AM	6	50	0	2	21	3	1	4	10	0	6	1	104				
8:30 AM	7	39	0	0	30	3	1	5	10	0	4	7	106				
8:45 AM	7	48	0	3	50	1	1	9	5	0	6	4	134				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	52	363	1	7	221	10	9	39	63	1	33	23	822	0	0	0	0
APPROACH %'s :	12.50%	87.26%	0.24%	2.94%	92.86%	4.20%	8.11%	35.14%	56.76%	1.75%	57.89%	40.35%					

PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	26	185	0	5	133	8	4	24	37	0	18	13	453
PEAK HR FACTOR :		0.942			0.676			0.855			0.705		0.845

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-030 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Helberta Ave			Helberta Ave			Pearl St			Pearl St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	1	0	0	1	0	
4:00 PM	5	54	0	0	51	1	3	7	13	0	10	1	145
4:15 PM	7	50	2	3	32	0	3	8	6	1	5	7	124
4:30 PM	8	53	3	1	37	1	3	10	14	1	8	0	139
4:45 PM	5	59	1	0	45	3	3	11	10	2	8	3	150
5:00 PM	5	54	1	4	49	2	0	6	16	1	2	3	143
5:15 PM	8	65	1	1	54	2	4	12	10	3	3	5	168
5:30 PM	3	53	0	1	41	4	3	9	13	3	4	3	137
5:45 PM	4	74	1	2	44	2	2	9	10	3	6	4	161
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	45	462	9	12	353	15	21	72	92	14	46	26	1167
APPROACH %'s :	8.72%	89.53%	1.74%	3.16%	92.89%	3.95%	11.35%	38.92%	49.73%	16.28%	53.49%	30.23%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	20	246	3	8	188	10	9	36	49	10	15	15	609
PEAK HR FACTOR :		0.851			0.904			0.904			0.769		0.906

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : 4-Way Stop

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-030_Peds & Bikes
N/S Street: Helberta Ave
E/W Street: Pearl St
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	0	1	0	2	0
7:30 AM	0	0	0	0	2	0	0	0
7:45 AM	1	0	0	0	0	0	0	0
8:00 AM	0	0	3	0	3	0	0	0
8:15 AM	0	0	0	0	0	3	2	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	1	0	0	1	0
TOTALS	**2**	**0**	**3**	**1**	**6**	**3**	**5**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	1	1	0	0	0	0
7:15 AM	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
7:45 AM	0	0	0	2	0	0	0	0	0	0	0	0
8:00 AM	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
8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:45 AM	0	3	0	0	0	1	0	1	0	0	0	0
TOTALS	**0**	**3**	**0**	**2**	**1**	**1**	**1**	**2**	**0**	**0**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	0	0	0	2	0	0	0
4:15 PM	1	0	1	0	1	1	0	0
4:30 PM	0	2	0	0	0	0	1	1
4:45 PM	0	1	0	4	0	4	0	1
5:00 PM	0	0	0	2	0	0	0	0
5:15 PM	1	1	0	0	0	0	1	0
5:30 PM	0	0	0	0	1	1	1	0
5:45 PM	0	3	0	0	1	0	0	0
TOTALS	**3**	**7**	**1**	**6**	**5**	**6**	**3**	**2**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	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	2	0
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0
5:30 PM	0	2	0	0	0	0	0	2	0	0	1	0
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0
TOTALS	**0**	**2**	**0**	**1**	**1**	**0**	**0**	**3**	**0**	**0**	**4**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-031 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Sapphire St/Francisca Ave			Sapphire St/Francisca Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	0	1	0					
7:00 AM	3	378	0	4	143	1	3	1	3	0	0	1	537				
7:15 AM	3	385	1	1	183	1	3	0	4	0	0	3	584				
7:30 AM	7	402	0	2	195	2	3	3	2	0	3	4	623				
7:45 AM	6	309	2	8	253	0	2	2	6	3	2	3	596				
8:00 AM	3	307	0	9	251	2	7	7	4	2	5	5	602				
8:15 AM	8	295	1	3	188	2	6	2	6	1	5	6	523				
8:30 AM	5	367	2	0	211	7	8	1	7	0	3	2	613				
8:45 AM	4	344	0	1	224	2	6	0	7	0	3	2	593				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	39	2787	6	28	1648	17	38	16	39	6	21	26	4671	0	0	0	0
APPROACH %'s :	1.38%	98.41%	0.21%	1.65%	97.34%	1.00%	40.86%	17.20%	41.94%	11.32%	39.62%	49.06%					
PEAK HR START TIME :	715 AM												TOTAL				
PEAK HR VOL :	19	1403	3	20	882	5	15	12	16	5	10	15	2405				
PEAK HR FACTOR :		0.871			0.865			0.597			0.625		0.965				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-031 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Sapphire St/Francisca Ave			Sapphire St/Francisca Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	0	1	0					
4:00 PM	4	237	1	7	304	1	8	7	7	0	2	1	579				
4:15 PM	6	247	1	3	231	2	7	3	5	0	4	2	511				
4:30 PM	5	270	3	5	246	1	6	3	6	1	1	0	547				
4:45 PM	5	235	1	5	334	8	6	4	3	2	2	3	608				
5:00 PM	3	268	0	4	361	3	6	5	9	0	3	4	666				
5:15 PM	5	268	3	7	370	1	9	4	7	1	4	3	682				
5:30 PM	7	259	1	9	373	0	13	4	7	1	2	5	681				
5:45 PM	7	253	0	6	369	3	11	4	13	3	2	2	673				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	42	2037	10	46	2588	19	66	34	57	8	20	20	4947	0	0	0	0
APPROACH %'s :	2.01%	97.51%	0.48%	1.73%	97.55%	0.72%	42.04%	21.66%	36.31%	16.67%	41.67%	41.67%					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	22	1048	4	26	1473	7	39	17	36	5	11	14	2702				
PEAK HR FACTOR :		0.973			0.986			0.821			0.938		0.990				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-031
N/S Street: Pacific Coast Hwy
E/W Street: Sapphire St/Francisca Ave
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	1	0	1	1	0	1	1
7:15 AM	0	0	1	0	0	0	0	1
7:30 AM	0	0	3	0	0	0	0	0
7:45 AM	0	0	1	0	1	0	0	2
8:00 AM	0	0	1	1	0	0	0	0
8:15 AM	0	0	1	0	2	0	0	1
8:30 AM	1	0	0	3	0	4	1	2
8:45 AM	1	0	0	0	0	0	1	1
TOTALS	**3**	**1**	**7**	**5**	**4**	**4**	**3**	**8**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	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
7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:45 AM	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
8:15 AM	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
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	1	0	1	0	0	1	1
4:15 PM	1	2	0	1	3	0	1	2
4:30 PM	1	2	1	4	0	0	5	2
4:45 PM	0	1	5	1	2	2	1	3
5:00 PM	0	3	2	1	2	1	3	2
5:15 PM	0	0	0	0	1	0	0	1
5:30 PM	1	0	0	0	0	0	1	0
5:45 PM	0	2	0	1	1	0	1	3
TOTALS	**3**	**11**	**8**	**9**	**9**	**3**	**13**	**14**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	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
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	2	1	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	1	0	1	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	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
TOTALS	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**1**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-031 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Sapphire St/Francisca Ave			Sapphire St/Francisca Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	0	0	1					
7:00 AM	0	302	0	2	111	1	3	0	1	0	1	2	423				
7:15 AM	2	332	1	1	147	1	2	0	3	0	1	0	490				
7:30 AM	5	358	0	0	189	1	4	1	6	1	0	0	565				
7:45 AM	2	282	1	7	218	2	5	1	3	1	0	1	523				
8:00 AM	5	291	1	2	208	1	5	3	3	2	2	1	524				
8:15 AM	0	309	2	3	196	1	1	1	5	1	0	3	522				
8:30 AM	4	299	1	2	193	7	8	2	2	0	4	2	524				
8:45 AM	9	294	1	5	207	1	10	5	7	3	0	4	546				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	27	2467	7	22	1469	15	38	13	30	8	8	13	4117	0	0	0	0
APPROACH %'s :	1.08%	98.64%	0.28%	1.46%	97.54%	1.00%	46.91%	16.05%	37.04%	27.59%	27.59%	44.83%					
PEAK HR START TIME :	730 AM												TOTAL				
PEAK HR VOL :	12	1240	4	12	811	5	15	6	17	5	2	5	2134				
PEAK HR FACTOR :		0.865			0.912			0.864			0.600		0.944				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-031 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Sapphire St/Francisca Ave			Sapphire St/Francisca Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	0	1	0	0	0	1	
4:00 PM	5	250	2	6	301	3	5	5	6	0	1	1	585
4:15 PM	4	266	0	5	324	4	6	3	8	1	2	2	625
4:30 PM	2	283	1	4	346	8	10	5	7	1	1	3	671
4:45 PM	10	250	0	4	355	7	1	2	8	1	2	4	644
5:00 PM	4	270	1	7	329	5	11	5	6	0	2	2	642
5:15 PM	8	267	1	6	341	6	12	2	11	1	5	3	663
5:30 PM	7	265	1	5	354	3	8	6	7	0	6	2	664
5:45 PM	7	252	3	3	348	5	7	4	7	4	5	4	649
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	47	2103	9	40	2698	41	60	32	60	8	24	21	5143
APPROACH %'s :	2.18%	97.41%	0.42%	1.44%	97.09%	1.48%	39.47%	21.05%	39.47%	15.09%	45.28%	39.62%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	24	1070	3	21	1371	26	34	14	32	3	10	12	2620
PEAK HR FACTOR :		0.959			0.969			0.800			0.694		0.976

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-031_Peds & Bikes
N/S Street: Pacific Coast Hwy
E/W Street: Sapphire St/Francisca Ave
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	1	1
7:15 AM	0	0	0	1	0	0	0	0
7:30 AM	0	0	0	1	0	0	0	2
7:45 AM	0	0	0	1	0	1	0	0
8:00 AM	2	0	1	0	1	1	1	0
8:15 AM	1	0	0	1	2	6	2	2
8:30 AM	0	0	2	0	0	2	1	3
8:45 AM	0	2	2	0	3	2	2	2
TOTALS	**3**	**2**	**5**	**4**	**6**	**12**	**7**	**10**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	1	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	2	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
8:15 AM	0	1	0	0	2	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	2	0
8:45 AM	0	0	0	0	1	0	0	0	1	0	0	0
TOTALS	**0**	**4**	**0**	**0**	**4**	**0**	**0**	**1**	**1**	**0**	**2**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	4	0	0	0	0	0	0	1
4:15 PM	0	1	0	0	0	0	2	0
4:30 PM	3	1	0	0	0	0	1	0
4:45 PM	0	0	0	3	2	2	0	1
5:00 PM	4	0	1	1	1	0	1	0
5:15 PM	0	4	0	2	0	0	5	1
5:30 PM	1	1	0	0	0	1	6	2
5:45 PM	1	1	3	1	1	1	0	0
TOTALS	**13**	**8**	**4**	**7**	**4**	**4**	**15**	**5**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	1	0	1	0	0	0	1
5:00 PM	0	2	0	0	2	0	0	0	0	0	1	0
5:15 PM	1	1	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	2	0	0	0	0	0	2	0
5:45 PM	0	1	0	0	0	0	0	1	0	0	0	0
TOTALS	**1**	**7**	**0**	**0**	**5**	**1**	**0**	**2**	**0**	**0**	**4**	**1**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-131 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Sapphire St/Francisca Ave			Sapphire St/Francisca Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	0	0	1					
7:00 AM	0	0	5	0	0	0	0	0	0	0	0	0	5				
7:15 AM	0	0	3	1	0	0	0	4	0	0	0	0	8				
7:30 AM	0	0	13	2	0	0	0	9	0	0	0	1	25				
7:45 AM	0	0	8	1	0	0	0	6	0	0	0	2	17				
8:00 AM	0	0	10	2	0	0	0	5	0	0	0	1	18				
8:15 AM	0	0	4	1	0	0	0	2	0	0	0	0	7				
8:30 AM	0	0	1	1	0	0	0	0	0	0	0	0	2				
8:45 AM	0	0	7	0	0	0	0	4	0	0	0	0	11				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	51	8	0	0	0	30	0	0	0	4	93	0	0	0	0
APPROACH %'s :	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%					
PEAK HR START TIME :	715 AM												TOTAL				
PEAK HR VOL :	0	0	34	6	0	0	0	24	0	0	0	4	68				
PEAK HR FACTOR :	0.654			0.750			0.667			0.500			0.680				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-131 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Sapphire St/Francisca Ave			Sapphire St/Francisca Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	0	0	1					
4:00 PM	0	0	8	2	0	0	0	3	0	0	0	1	14				
4:15 PM	0	0	3	0	0	0	0	4	0	0	0	1	8				
4:30 PM	0	0	7	0	0	0	0	2	0	0	0	3	12				
4:45 PM	0	0	2	1	0	0	0	1	0	0	0	1	5				
5:00 PM	0	0	10	2	0	0	0	4	0	0	0	2	18				
5:15 PM	0	0	2	1	0	0	0	6	0	1	0	0	10				
5:30 PM	0	0	5	3	0	0	0	4	0	1	0	1	14				
5:45 PM	0	0	6	2	0	0	0	6	0	0	0	2	16				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	43	11	0	0	0	30	0	2	0	11	97	0	0	0	0
APPROACH %'s :	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	15.38%	0.00%	84.62%					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	0	0	23	8	0	0	0	20	0	2	0	5	58				
PEAK HR FACTOR :	0.575			0.667			0.833			0.875			0.806				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-131
N/S Street: Pacific Coast Hwy
E/W Street: Sapphire St/Francisca Ave
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	2	0	0	0
7:15 AM	0	0	0	0	1	0	0	0
7:30 AM	0	0	0	0	1	0	0	0
7:45 AM	0	0	0	0	1	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	1	0	0	0
8:30 AM	0	0	0	0	0	2	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**6**	**2**	**0**	**0**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	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
7:30 AM	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
8:00 AM	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
8:30 AM	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
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	2	0	0	0
4:15 PM	0	0	0	0	3	1	0	0
4:30 PM	0	0	0	0	0	3	0	0
4:45 PM	0	0	0	0	1	1	0	0
5:00 PM	0	0	0	0	2	1	0	0
5:15 PM	0	0	0	0	1	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	1	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**10**	**6**	**0**	**0**

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	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
4:30 PM	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
5:00 PM	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
5:30 PM	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
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-131 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Sapphire St/Francisca Ave			Sapphire St/Francisca Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	0	1	0	0	0	1	
7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	2	2	0	0	0	1	0	0	0	0	5
7:30 AM	0	0	6	0	0	0	0	4	0	0	0	0	10
7:45 AM	0	0	2	0	0	0	0	3	0	0	0	0	5
8:00 AM	0	0	3	1	0	0	0	2	0	0	0	1	7
8:15 AM	0	0	6	1	0	0	0	0	0	0	0	1	8
8:30 AM	0	0	4	0	0	0	0	1	0	0	0	2	7
8:45 AM	0	0	3	1	0	0	0	1	0	0	0	0	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	27	5	0	0	0	12	0	0	0	4	48
APPROACH %'s :	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	17	2	0	0	0	9	0	0	0	2	30
PEAK HR FACTOR :	0.708			0.500			0.563			0.500			0.750

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-131 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Sapphire St/Francisca Ave			Sapphire St/Francisca Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	0	1	0	0	0	1					
4:00 PM	0	0	6	1	0	0	0	2	0	0	0	4	13				
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	2				
4:30 PM	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				
5:00 PM	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				
5:30 PM	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				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	6	1	0	0	0	2	0	0	0	6	15	0	0	0	0
APPROACH %'s :	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%					
PEAK HR START TIME :	400 PM												TOTAL				
PEAK HR VOL :	0	0	6	1	0	0	0	2	0	0	0	6	15				
PEAK HR FACTOR :	0.250			0.250			0.250			0.375			0.288				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-131-Extra Leg_Peds & Bikes
N/S Street: Pacific Coast Hwy
E/W Street: Sapphire St/Francisca Ave
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	1	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	1	2	0	0
8:15 AM	0	0	0	0	0	4	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	5	1	0	0
TOTALS	**0**	**0**	**0**	**0**	**6**	**8**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	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
7:30 AM	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
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	1	2	0	0
4:45 PM	0	0	0	0	2	2	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	3	0	0	0
5:30 PM	0	0	0	0	0	1	0	0
5:45 PM	0	0	0	0	0	1	0	0
TOTALS	**0**	**0**	**0**	**0**	**6**	**6**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	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
4:30 PM	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
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0
5:15 PM	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
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-032 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Esplanade			Esplanade			Knob Hill Ave			Knob Hill Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	0	1	0	0	0	0	1	0	1					
7:00 AM	0	20	9	2	9	0	0	0	0	3	0	1	44				
7:15 AM	0	29	23	1	16	0	0	0	0	6	0	2	77				
7:30 AM	0	30	23	4	10	0	0	0	0	4	0	6	77				
7:45 AM	0	26	25	7	22	0	0	0	0	15	0	7	102				
8:00 AM	0	24	23	4	16	0	0	0	0	23	0	4	94				
8:15 AM	0	34	22	5	30	0	0	0	0	13	0	8	112				
8:30 AM	0	32	21	5	27	0	0	0	0	27	0	4	116				
8:45 AM	0	37	18	7	25	0	0	0	0	13	0	2	102				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	232	164	35	155	0	0	0	0	104	0	34	724	0	0	0	0
APPROACH %'s :	0.00%	58.59%	41.41%	18.42%	81.58%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	75.36%	0.00%	24.64%					
PEAK HR START TIME :	800 AM												TOTAL				
PEAK HR VOL :	0	127	84	21	98	0	0	0	0	76	0	18	424				
PEAK HR FACTOR :		0.942			0.850			0.000			0.758		0.914				

CONTROL : 3-Way Stop NB/SB/WB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-032 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Esplanade			Esplanade			Knob Hill Ave			Knob Hill Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	0	1	0	0	0	0	1	0	1					
4:00 PM	0	30	13	5	42	0	0	0	0	20	0	5	115				
4:15 PM	0	26	12	2	41	0	0	0	0	18	0	3	102				
4:30 PM	0	25	11	7	42	0	0	0	0	16	0	4	105				
4:45 PM	0	30	14	3	56	0	0	0	0	15	0	6	124				
5:00 PM	0	29	15	3	60	0	0	0	0	17	0	5	129				
5:15 PM	0	33	18	5	62	0	0	0	0	14	0	2	134				
5:30 PM	0	37	14	1	51	0	0	0	0	19	0	7	129				
5:45 PM	0	35	15	1	62	0	0	0	0	23	0	3	139				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	245	112	27	416	0	0	0	0	142	0	35	977	0	0	0	0
APPROACH %'s :	0.00%	68.63%	31.37%	6.09%	93.91%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	80.23%	0.00%	19.77%					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	0	134	62	10	235	0	0	0	0	73	0	17	531				
PEAK HR FACTOR :		0.961			0.914			0.000			0.865		0.955				

CONTROL : 3-Way Stop NB/SB/WB

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-032
N/S Street: Esplanade
E/W Street: Knob Hill Ave
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	3	1	0	0	0	0	0	0
7:15 AM	0	4	0	0	1	0	0	0
7:30 AM	1	1	0	1	0	1	0	0
7:45 AM	2	6	0	0	1	1	0	0
8:00 AM	4	3	0	2	3	2	0	0
8:15 AM	3	10	2	0	1	2	0	0
8:30 AM	5	13	0	1	6	2	0	0
8:45 AM	4	3	1	1	1	1	0	0
TOTALS	**22**	**41**	**3**	**5**	**13**	**9**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	1	0	0	2	0	0	0	0	1	0	0
7:15 AM	0	4	4	0	2	0	0	0	0	0	0	0
7:30 AM	0	6	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	2	0	3	0	0	0	0	1	0	0
8:00 AM	0	0	1	0	1	0	0	0	0	3	0	1
8:15 AM	0	1	2	0	0	0	0	0	0	1	0	0
8:30 AM	0	5	0	0	3	0	0	0	0	2	0	0
8:45 AM	0	1	2	0	1	0	0	0	0	1	0	0
TOTALS	**0**	**19**	**11**	**0**	**12**	**0**	**0**	**0**	**0**	**9**	**0**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	4	7	0	0	2	4	0	0
4:15 PM	3	2	0	0	0	0	0	0
4:30 PM	4	1	1	2	2	0	0	0
4:45 PM	3	2	0	0	1	3	0	0
5:00 PM	4	6	1	1	1	3	0	0
5:15 PM	2	6	0	2	4	0	0	0
5:30 PM	10	5	0	0	2	1	0	0
5:45 PM	1	7	0	1	0	3	0	0
TOTALS	**31**	**36**	**2**	**6**	**12**	**14**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	1	0	4	0	0	0	0	0	0	0
4:15 PM	0	2	1	0	3	0	0	0	0	2	0	0
4:30 PM	0	0	2	0	1	0	0	0	0	0	0	0
4:45 PM	0	3	0	0	0	0	0	0	0	1	0	0
5:00 PM	0	0	3	0	0	0	0	0	0	0	0	0
5:15 PM	0	2	1	0	1	0	0	0	0	2	0	0
5:30 PM	0	2	1	0	2	0	0	0	0	1	0	0
5:45 PM	0	0	0	0	1	0	0	0	0	3	0	0
TOTALS	**0**	**10**	**9**	**0**	**12**	**0**	**0**	**0**	**0**	**9**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-032 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Esplanade			Esplanade			Knob Hill Ave			Knob Hill Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	1	0	1	1	0	0	0	0	1	0	1					
7:00 AM	0	23	15	6	10	0	0	0	0	13	0	0	67				
7:15 AM	0	19	15	3	14	0	0	0	0	12	0	5	68				
7:30 AM	0	23	14	4	18	0	0	0	0	14	0	3	76				
7:45 AM	0	18	27	7	22	0	0	0	0	12	0	4	90				
8:00 AM	0	26	13	3	25	0	0	0	0	18	0	5	90				
8:15 AM	0	25	22	5	28	0	0	0	0	10	0	4	94				
8:30 AM	0	35	23	5	21	0	0	0	0	10	0	4	98				
8:45 AM	0	31	20	7	25	0	0	0	0	23	0	4	110				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	200	149	40	163	0	0	0	0	112	0	29	693	0	0	0	0
APPROACH %'s :	0.00%	57.31%	42.69%	19.70%	80.30%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	79.43%	0.00%	20.57%					
PEAK HR START TIME :	800 AM												TOTAL				
PEAK HR VOL :	0	117	78	20	99	0	0	0	0	61	0	17	392				
PEAK HR FACTOR :		0.841			0.902			0.000			0.722		0.891				

CONTROL : 3-Way Stop NB/SB/WB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-032 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Esplanade			Esplanade			Knob Hill Ave			Knob Hill Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	1	0	0	0	0	1	0	1	
4:00 PM	0	36	24	7	53	0	0	0	0	21	0	7	148
4:15 PM	0	38	25	8	55	0	0	0	0	24	0	10	160
4:30 PM	0	44	19	11	52	0	0	0	0	16	0	7	149
4:45 PM	0	43	26	5	50	0	0	0	0	18	0	9	151
5:00 PM	0	46	17	5	67	0	0	0	0	21	0	8	164
5:15 PM	0	37	17	8	50	0	0	0	0	22	0	9	143
5:30 PM	0	37	15	9	70	0	0	0	0	23	0	13	167
5:45 PM	0	39	12	5	57	0	0	0	0	33	0	4	150
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	320	155	58	454	0	0	0	0	178	0	67	1232
APPROACH %'s :	0.00%	67.37%	32.63%	11.33%	88.67%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	72.65%	0.00%	27.35%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	163	75	27	237	0	0	0	0	84	0	39	625
PEAK HR FACTOR :		0.862			0.835			0.000			0.854		0.936

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : 3-Way Stop NB/SB/WB

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-032_Peds & Bikes
N/S Street: Esplanade
E/W Street: Knob Hill Ave
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	1	0	1	0	1	0	0
7:15 AM	3	4	2	1	0	2	0	0
7:30 AM	4	3	0	1	4	0	0	0
7:45 AM	2	3	0	2	2	2	0	0
8:00 AM	6	9	2	3	6	3	0	0
8:15 AM	7	6	0	2	3	1	0	0
8:30 AM	9	6	0	1	1	4	0	0
8:45 AM	3	20	0	1	9	0	0	0
TOTALS	**36**	**52**	**4**	**12**	**25**	**13**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0
7:15 AM	0	3	2	0	4	0	0	0	0	1	0	0
7:30 AM	0	3	1	0	2	0	0	0	0	0	0	1
7:45 AM	0	2	4	0	0	0	0	0	0	1	0	0
8:00 AM	0	1	2	0	0	0	0	0	0	1	0	0
8:15 AM	0	2	0	0	1	0	0	0	0	8	0	0
8:30 AM	0	0	2	0	6	0	0	0	0	3	0	0
8:45 AM	0	2	0	0	1	0	0	0	0	1	0	0
TOTALS	**0**	**14**	**11**	**0**	**15**	**0**	**0**	**0**	**0**	**15**	**0**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	12	17	0	1	2	1	0	0
4:15 PM	7	9	2	1	5	0	0	0
4:30 PM	15	10	3	0	1	1	0	0
4:45 PM	9	2	0	3	0	1	0	0
5:00 PM	10	4	0	0	0	4	0	0
5:15 PM	10	12	1	3	2	0	0	0
5:30 PM	8	9	0	2	0	0	0	0
5:45 PM	10	7	2	2	0	2	0	0
TOTALS	**81**	**70**	**8**	**12**	**10**	**9**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	5	0	0	5	0	0	0	0	0	0	1
4:15 PM	0	6	1	0	1	0	0	0	0	1	0	0
4:30 PM	0	1	1	0	5	0	0	0	0	3	0	0
4:45 PM	0	1	3	0	7	0	0	0	0	0	0	0
5:00 PM	0	3	1	0	4	0	0	0	0	1	0	0
5:15 PM	0	1	3	1	3	0	0	0	0	0	0	0
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0
5:45 PM	0	3	2	0	1	0	0	0	0	4	0	0
TOTALS	**0**	**20**	**12**	**1**	**26**	**0**	**0**	**0**	**0**	**9**	**0**	**1**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-033 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Knob Hill Ave			Knob Hill Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	1	1	0	1	1	0					
7:00 AM	0	45	7	2	11	2	4	8	0	3	3	1	86				
7:15 AM	2	81	21	4	12	2	16	8	1	3	6	1	157				
7:30 AM	1	104	15	4	24	0	10	18	1	2	7	3	189				
7:45 AM	1	118	13	6	43	4	18	13	3	5	17	9	250				
8:00 AM	3	89	17	6	33	10	11	17	1	11	20	6	224				
8:15 AM	1	103	4	6	42	4	7	20	1	6	15	6	215				
8:30 AM	2	88	17	6	40	9	8	15	1	11	19	8	224				
8:45 AM	0	77	14	8	39	4	10	16	1	6	11	6	192				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	10	705	108	42	244	35	84	115	9	47	98	40	1537	0	0	0	0
APPROACH %'s :	1.22%	85.66%	13.12%	13.08%	76.01%	10.90%	40.38%	55.29%	4.33%	25.41%	52.97%	21.62%					
PEAK HR START TIME :	745 AM												TOTAL				
PEAK HR VOL :	7	398	51	24	158	27	44	65	6	33	71	29	913				
PEAK HR FACTOR :		0.864			0.950			0.846			0.875		0.913				

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-033 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Knob Hill Ave			Knob Hill Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	1	1	0	1	1	0					
4:00 PM	2	57	15	8	64	7	4	14	0	7	16	8	202				
4:15 PM	2	61	14	7	77	3	4	10	0	14	17	5	214				
4:30 PM	1	53	14	9	78	7	3	14	2	12	13	4	210				
4:45 PM	1	56	16	12	90	5	2	15	2	23	13	6	241				
5:00 PM	0	72	18	9	85	8	4	13	1	21	17	6	254				
5:15 PM	2	76	15	10	104	4	9	14	2	21	12	2	271				
5:30 PM	4	85	21	15	82	7	3	12	1	26	17	10	283				
5:45 PM	0	60	19	4	99	9	3	15	0	18	17	12	256				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	12	520	132	74	679	50	32	107	8	142	122	53	1931	0	0	0	0
APPROACH %'s :	1.81%	78.31%	19.88%	9.22%	84.56%	6.23%	21.77%	72.79%	5.44%	44.79%	38.49%	16.72%					

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	6	293	73	38	370	28	19	54	4	86	63	30	1064
PEAK HR FACTOR :		0.845			0.924			0.770			0.844		0.940

CONTROL : 4-Way Stop

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-033
N/S Street: Catalina Ave
E/W Street: Knob Hill Ave
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	3	0	2	1	2	0	1	1
7:15 AM	0	4	2	1	1	0	0	1
7:30 AM	2	1	1	0	2	4	0	1
7:45 AM	5	4	0	1	0	3	1	0
8:00 AM	2	4	2	3	0	0	0	0
8:15 AM	0	6	2	0	1	0	0	2
8:30 AM	3	13	0	0	0	0	2	1
8:45 AM	4	2	2	0	2	1	2	0
TOTALS	**19**	**34**	**11**	**6**	**8**	**8**	**6**	**6**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	4	0	0	1	0	0
7:30 AM	0	2	2	0	0	0	0	1	0	0	0	0
7:45 AM	0	0	2	0	2	1	0	2	0	1	0	0
8:00 AM	1	2	0	0	0	0	0	0	0	2	2	0
8:15 AM	0	1	1	0	2	0	0	2	0	1	0	0
8:30 AM	0	1	0	0	10	1	0	0	0	0	1	1
8:45 AM	0	1	0	0	4	0	1	0	0	2	1	0
TOTALS	**1**	**7**	**5**	**0**	**18**	**3**	**5**	**5**	**0**	**7**	**4**	**1**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	2	6	0	2	1	1	0	1
4:15 PM	2	0	0	1	0	2	0	0
4:30 PM	9	2	2	1	1	1	0	3
4:45 PM	5	3	0	0	0	1	0	1
5:00 PM	1	4	2	1	0	1	1	0
5:15 PM	0	2	0	0	1	0	0	0
5:30 PM	7	9	3	1	1	0	2	2
5:45 PM	0	4	1	0	2	1	0	0
TOTALS	**26**	**30**	**8**	**6**	**6**	**7**	**3**	**7**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	1	0	1	1	0	0	0	0
4:15 PM	0	0	5	0	1	1	0	1	0	0	1	0
4:30 PM	0	0	1	0	2	0	2	0	0	0	0	0
4:45 PM	1	2	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	2	0	0	1	1	2	3	0	0	0	0
5:15 PM	0	0	1	0	2	1	0	0	0	0	1	0
5:30 PM	0	1	0	2	1	1	1	0	0	1	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	4	2
TOTALS	**1**	**5**	**7**	**2**	**8**	**4**	**6**	**5**	**0**	**1**	**6**	**2**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-033 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Catalina Ave			Catalina Ave			Knob Hill Ave			Knob Hill Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	1	1	0	1	1	0	
7:00 AM	3	48	20	6	11	1	9	12	0	2	9	0	121
7:15 AM	1	52	12	5	16	2	9	10	0	6	14	3	130
7:30 AM	1	59	10	6	31	1	11	7	1	4	16	3	150
7:45 AM	3	62	18	6	32	3	17	17	1	8	10	4	181
8:00 AM	3	66	15	3	31	6	5	10	1	6	13	2	161
8:15 AM	0	68	13	5	32	4	8	17	2	6	10	7	172
8:30 AM	2	75	11	6	27	4	8	19	0	4	9	5	170
8:45 AM	1	71	13	5	36	6	9	15	3	10	20	9	198
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	14	501	112	42	216	27	76	107	8	46	101	33	1283
APPROACH %'s :	2.23%	79.90%	17.86%	14.74%	75.79%	9.47%	39.79%	56.02%	4.19%	25.56%	56.11%	18.33%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	6	280	52	19	126	20	30	61	6	26	52	23	701
PEAK HR FACTOR :		0.960			0.878			0.898			0.647		0.885

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-033 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Catalina Ave			Catalina Ave			Knob Hill Ave			Knob Hill Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0	2	0	0	2	0	1	1	0	1	1	0					
4:00 PM	3	63	18	6	78	9	5	25	0	15	16	9	247				
4:15 PM	2	55	15	7	69	9	12	20	1	17	22	9	238				
4:30 PM	1	76	17	4	87	7	4	21	5	10	15	7	254				
4:45 PM	3	84	19	12	83	3	10	18	3	20	21	4	280				
5:00 PM	3	78	23	8	67	7	4	16	2	8	19	5	240				
5:15 PM	4	74	16	9	97	10	8	16	1	23	17	10	285				
5:30 PM	5	82	14	11	101	8	8	14	2	18	23	11	297				
5:45 PM	1	73	21	10	80	11	3	11	3	10	24	6	253				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	22	585	143	67	662	64	54	141	17	121	157	61	2094	0	0	0	0
APPROACH %'s :	2.93%	78.00%	19.07%	8.45%	83.48%	8.07%	25.47%	66.51%	8.02%	35.69%	46.31%	17.99%					
PEAK HR START TIME :	445 PM												TOTAL				
PEAK HR VOL :	15	318	72	40	348	28	30	64	8	69	80	30	1102				
PEAK HR FACTOR :		0.955			0.867			0.823			0.861		0.928				

CONTROL : 4-Way Stop

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-033_Peds & Bikes
N/S Street: Catalina Ave
E/W Street: Knob Hill Ave
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	1	1	2	0	0	0	0
7:15 AM	1	5	2	2	0	0	0	0
7:30 AM	3	1	3	2	0	0	0	0
7:45 AM	5	5	3	2	0	0	0	0
8:00 AM	5	6	0	4	0	0	0	0
8:15 AM	5	2	2	2	0	0	0	0
8:30 AM	7	5	1	8	0	0	0	0
8:45 AM	0	8	3	2	0	0	0	0
TOTALS	**28**	**33**	**15**	**24**	**0**	**0**	**0**	**0**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	1	0	1	0	0	0	0	0	0	0	0
7:15 AM	0	0	1	0	1	1	2	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	1	0	0	1	0
7:45 AM	0	1	0	0	0	1	4	1	0	0	1	0
8:00 AM	0	0	1	0	0	0	2	1	0	0	1	0
8:15 AM	0	2	0	0	0	6	0	0	0	1	2	0
8:30 AM	0	1	0	0	0	0	2	0	0	2	4	0
8:45 AM	0	0	2	0	0	0	0	0	0	0	1	2
TOTALS	**0**	**5**	**4**	**1**	**1**	**8**	**10**	**3**	**0**	**3**	**10**	**2**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	14	9	7	4	0	0	0	0
4:15 PM	9	6	1	5	0	0	0	0
4:30 PM	13	6	3	2	0	0	0	0
4:45 PM	8	2	3	3	0	0	0	1
5:00 PM	11	3	1	1	0	0	0	0
5:15 PM	10	8	0	2	0	0	0	0
5:30 PM	16	7	4	2	0	0	0	0
5:45 PM	4	8	9	1	0	0	0	0
TOTALS	**85**	**49**	**28**	**20**	**0**	**0**	**0**	**1**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	1	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	1	0	1	1	3	1	0	1	0	0
4:30 PM	0	1	0	0	0	0	0	2	0	0	3	0
4:45 PM	0	0	1	0	0	0	2	0	0	0	0	0
5:00 PM	0	3	1	0	0	0	0	1	0	0	2	0
5:15 PM	0	0	0	0	2	0	2	2	0	0	0	0
5:30 PM	0	0	0	0	2	0	1	0	0	0	0	0
5:45 PM	0	3	0	0	0	1	1	3	0	0	3	2
TOTALS	**0**	**7**	**4**	**0**	**5**	**2**	**9**	**9**	**0**	**1**	**9**	**2**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-034 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Knob Hill Ave			Knob Hill Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	1	1	0	
7:00 AM	4	376	4	3	152	2	11	4	5	2	2	8	573
7:15 AM	3	348	4	6	172	6	18	14	6	11	7	11	606
7:30 AM	7	394	5	8	196	4	12	17	9	11	7	14	684
7:45 AM	9	283	8	18	234	7	15	18	6	10	14	13	635
8:00 AM	6	286	18	19	235	15	10	31	9	22	23	20	694
8:15 AM	4	291	6	14	185	11	5	24	8	22	23	11	604
8:30 AM	11	337	5	17	192	11	23	13	8	12	17	10	656
8:45 AM	6	319	6	15	204	11	21	26	7	9	17	8	649
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	50	2634	56	100	1570	67	115	147	58	99	110	95	5101
APPROACH %'s :	1.82%	96.13%	2.04%	5.76%	90.39%	3.86%	35.94%	45.94%	18.13%	32.57%	36.18%	31.25%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	25	1311	35	51	837	32	55	80	30	54	51	58	2619
PEAK HR FACTOR :		0.844			0.855			0.825			0.627		0.943

UTURNS

NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5156-034 **Day:** Thursday

City: Redondo Beach **Date:** 3/20/2014

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Knob Hill Ave			Knob Hill Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	1	1	1	1	0					
4:00 PM	12	199	11	12	275	12	23	21	20	17	17	16	635				
4:15 PM	12	236	3	14	227	6	11	17	15	17	19	11	588				
4:30 PM	10	254	16	14	215	8	12	21	11	14	19	12	606				
4:45 PM	8	222	16	11	320	11	5	23	15	17	18	14	680				
5:00 PM	12	266	20	18	348	10	10	24	13	18	29	12	780				
5:15 PM	5	237	15	19	344	10	8	19	16	20	15	17	725				
5:30 PM	17	238	11	22	341	5	10	27	15	18	30	15	749				
5:45 PM	14	239	13	15	359	5	13	18	11	16	27	16	746				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	90	1891	105	125	2429	67	92	170	116	137	174	113	5509	0	0	0	0
APPROACH %'s :	4.31%	90.65%	5.03%	4.77%	92.67%	2.56%	24.34%	44.97%	30.69%	32.31%	41.04%	26.65%					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	48	980	59	74	1392	30	41	88	55	72	101	60	3000				
PEAK HR FACTOR :		0.912			0.987			0.885			0.925		0.962				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5156-034
N/S Street: Pacific Coast Hwy
E/W Street: Knob Hill Ave
DATE: 3/20/2014 DAY: Thursday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	0	1	1	1	0	0	0
7:15 AM	1	0	1	1	1	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	3	2	0	2	0	0	0	1
8:00 AM	5	3	4	1	0	0	2	0
8:15 AM	0	4	3	1	2	0	0	0
8:30 AM	1	2	0	0	0	0	0	0
8:45 AM	1	2	2	5	1	3	1	1
TOTALS	**12**	**13**	**11**	**11**	**5**	**3**	**3**	**2**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	1	0	0	0	0	0	1	0
7:45 AM	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	1	0
8:15 AM	0	0	0	0	1	0	0	2	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0
TOTALS	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**2**	**0**	**0**	**4**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	5	0	0	2	0	1	2
4:15 PM	1	1	1	1	1	1	1	1
4:30 PM	4	3	3	0	0	0	1	7
4:45 PM	1	3	1	4	0	3	0	0
5:00 PM	1	1	1	0	1	0	0	0
5:15 PM	0	2	0	0	0	1	0	2
5:30 PM	5	2	1	1	2	2	0	2
5:45 PM	0	4	1	0	4	2	0	0
TOTALS	**12**	**21**	**8**	**6**	**10**	**9**	**3**	**14**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	1	0	0	0	0	0	0	1	0	0	0	0
4:15 PM	0	0	0	0	0	0	4	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	2	0	0	1	0	0	0	0
5:00 PM	0	0	0	1	0	0	0	3	0	0	1	0
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0
5:30 PM	0	1	0	0	0	0	0	2	0	0	0	0
5:45 PM	0	0	0	0	0	1	0	0	0	0	4	0
TOTALS	**1**	**1**	**0**	**1**	**2**	**1**	**4**	**8**	**0**	**0**	**5**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-034 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Knob Hill Ave			Knob Hill Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	1	1	1	1	0					
7:00 AM	4	298	5	2	120	1	12	9	3	2	7	8	471				
7:15 AM	1	327	2	9	146	5	10	14	7	8	7	11	547				
7:30 AM	4	347	7	14	202	5	12	12	12	8	10	9	642				
7:45 AM	8	296	11	22	214	9	6	22	8	15	16	13	640				
8:00 AM	10	289	18	16	198	11	13	30	13	15	21	8	642				
8:15 AM	6	301	4	5	182	11	10	25	4	21	29	19	617				
8:30 AM	4	293	9	16	178	8	14	17	8	15	16	16	594				
8:45 AM	8	279	10	9	193	7	21	19	13	12	18	12	601				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	45	2430	66	93	1433	57	98	148	68	96	124	96	4754	0	0	0	0
APPROACH %'s :	1.77%	95.63%	2.60%	5.87%	90.52%	3.60%	31.21%	47.13%	21.66%	30.38%	39.24%	30.38%					
PEAK HR START TIME :	730 AM												TOTAL				
PEAK HR VOL :	28	1233	40	57	796	36	41	89	37	59	76	49	2541				
PEAK HR FACTOR :		0.909			0.907			0.746			0.667		0.989				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-5425-034 **Day:** Friday

City: Redondo Beach **Date:** 8/23/2013

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Knob Hill Ave			Knob Hill Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	1	1	1	1	0					
4:00 PM	7	238	20	11	304	14	12	24	15	18	23	15	701				
4:15 PM	16	258	14	14	320	7	11	22	11	23	33	8	737				
4:30 PM	15	277	6	21	306	8	12	25	14	19	17	11	731				
4:45 PM	6	237	18	11	327	7	16	21	8	15	27	7	700				
5:00 PM	14	260	20	13	306	4	14	23	18	21	32	5	730				
5:15 PM	11	268	18	17	338	12	11	19	20	21	37	12	784				
5:30 PM	14	255	11	16	325	8	13	23	17	17	27	23	749				
5:45 PM	13	257	21	16	347	5	9	26	10	24	31	18	777				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	96	2050	128	119	2573	65	98	183	113	158	227	99	5909	0	0	0	0
APPROACH %'s :	4.22%	90.15%	5.63%	4.32%	93.33%	2.36%	24.87%	46.45%	28.68%	32.64%	46.90%	20.45%					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	52	1040	70	62	1316	29	47	91	65	83	127	58	3040				
PEAK HR FACTOR :		0.978			0.956			0.923			0.918		0.969				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 13-5425-034_Peds & Bikes
N/S Street: Pacific Coast Hwy
E/W Street: Knob Hill Ave
DATE: 8/23/2013 DAY: Friday
CITY: Redondo Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	3	2	1	0	0	0	0
7:15 AM	1	1	2	3	2	0	0	0
7:30 AM	3	2	1	2	3	0	3	2
7:45 AM	6	4	0	0	1	1	0	0
8:00 AM	3	1	6	0	2	1	1	1
8:15 AM	1	9	2	3	1	1	0	0
8:30 AM	5	6	4	2	1	1	2	0
8:45 AM	3	0	1	1	0	0	1	1
TOTALS	**22**	**26**	**18**	**12**	**10**	**4**	**7**	**4**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	1	0	0	0	0	0	1	0
8:15 AM	0	2	0	0	1	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	1	0	0	0	0	0	2	0
8:45 AM	0	0	0	0	1	0	0	0	0	0	1	0
TOTALS	**0**	**3**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**6**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	2	2	3	1	2	0	0
4:15 PM	4	3	3	0	2	4	5	1
4:30 PM	2	2	0	2	0	1	0	1
4:45 PM	3	4	2	1	3	1	3	0
5:00 PM	3	2	0	1	0	1	0	0
5:15 PM	1	0	0	1	0	0	0	0
5:30 PM	1	1	2	3	1	1	0	1
5:45 PM	2	2	0	2	0	3	2	2
TOTALS	**16**	**16**	**9**	**13**	**7**	**13**	**10**	**5**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	0	0	0	1	0	0	0	0	0
4:15 PM	0	1	0	0	1	0	0	0	0	0	1	0
4:30 PM	0	3	0	0	1	0	0	0	2	0	2	0
4:45 PM	0	1	0	0	0	0	1	0	1	1	0	0
5:00 PM	1	0	0	0	1	0	1	2	1	0	1	0
5:15 PM	0	3	0	0	1	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	0	0	1	2	0	2	0
5:45 PM	2	4	0	0	0	0	0	1	0	0	0	0
TOTALS	**3**	**13**	**0**	**0**	**5**	**0**	**3**	**4**	**6**	**1**	**6**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_005 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

AM

NS/EW Streets:	Palos Verdes Blvd			Palos Verdes Blvd			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	118	88	25	4	26	10	13	101	36	13	166	10	610
7:15 AM	112	114	15	4	52	18	12	144	39	21	202	10	743
7:30 AM	112	108	28	9	65	21	12	134	67	21	203	13	793
7:45 AM	82	135	36	16	91	22	17	118	54	43	211	23	848
8:00 AM	102	150	51	19	97	28	17	116	61	45	195	21	902
8:15 AM	99	122	37	11	107	24	12	142	63	46	201	20	884
8:30 AM	99	137	37	8	77	24	19	117	41	36	169	10	774
8:45 AM	76	125	42	7	105	27	8	128	61	52	212	21	864
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	800	979	271	78	620	174	110	1000	422	277	1559	128	6418
APPROACH %'s :	39.02%	47.76%	13.22%	8.94%	71.10%	19.95%	7.18%	65.27%	27.55%	14.10%	79.38%	6.52%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	395	515	152	55	360	95	58	510	245	155	810	77	3427
PEAK HR FACTOR :		0.876			0.885			0.937			0.940		0.950

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_005 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

PM

NS/EW Streets:	Palos Verdes Blvd			Palos Verdes Blvd			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	54	78	43	18	71	40	27	203	77	44	160	11	826
4:15 PM	70	93	48	16	88	30	18	196	79	53	183	19	893
4:30 PM	50	93	39	21	101	22	23	217	85	46	195	13	905
4:45 PM	53	94	50	20	112	32	14	216	78	52	188	21	930
5:00 PM	54	90	49	21	128	35	22	234	84	52	198	19	986
5:15 PM	56	102	42	19	123	26	22	210	74	57	217	20	968
5:30 PM	40	92	41	24	87	33	23	235	99	55	240	14	983
5:45 PM	67	99	43	18	100	36	22	203	80	54	193	14	929
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	444	741	355	157	810	254	171	1714	656	413	1574	131	7420
APPROACH %'s :	28.83%	48.12%	23.05%	12.86%	66.34%	20.80%	6.73%	67.45%	25.82%	19.50%	74.32%	6.19%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	203	378	182	84	450	126	81	895	335	216	843	74	3867
PEAK HR FACTOR :		0.954			0.897			0.918			0.917		0.980

CONTROL :

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 11-5370-005
N/S Street: Palos Verdes Blvd
E/W Street: Pacific Coast Hwy
DATE: 9/27/11 DAY: 9/27/11
CITY: Redondo Beach

A M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	4	3	6	1	1	2	3	3
7:15 AM	3	1	5	2	1	3	2	1
7:30 AM	3	3	1	2	1	0	3	0
7:45 AM	2	1	5	0	1	0	2	0
8:00 AM	9	1	5	1	0	0	0	8
8:15 AM	5	4	0	0	1	0	13	3
8:30 AM	4	3	0	0	0	1	1	8
8:45 AM	4	2	2	6	0	2	1	5
TOTALS	**34**	**18**	**24**	**12**	**5**	**8**	**25**	**28**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	1	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	3	1	2	3	2	2	7	4
4:15 PM	4	0	0	1	1	0	0	4
4:30 PM	2	0	0	1	0	1	1	1
4:45 PM	3	6	1	0	4	0	3	2
5:00 PM	3	2	3	3	2	0	8	5
5:15 PM	2	12	0	0	0	5	8	16
5:30 PM	2	3	2	1	5	0	3	4
5:45 PM	2	0	0	2	0	2	2	1
TOTALS	**21**	**24**	**8**	**11**	**14**	**10**	**32**	**37**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	1	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	2	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**2**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_005 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

AM

NS/EW Streets:	Palos Verdes Blvd			Palos Verdes Blvd			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM													
7:15 AM		1						0			0		1
7:30 AM		0						1			0		1
7:45 AM													
8:00 AM		2						1			0		3
8:15 AM		0						3			1		4
8:30 AM		0						1			1		2
8:45 AM		0						0			1		1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	3	0	0	0	0	0	6	0	0	3	0	12
APPROACH %'s :	0.00%	100.00%	0.00%				0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	2	0	0	0	0	0	5	0	0	3	0	10
PEAK HR FACTOR :		0.250			0.000			0.417			0.750		0.625

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_005 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

PM

NS/EW Streets:	Palos Verdes Blvd			Palos Verdes Blvd			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	1	3		0		0	1	0			1		6
4:15 PM	0	0		0		2	0	0			0		2
4:30 PM	0	0		0		0	0	0			2		2
4:45 PM	0	0		0		2	0	0			2		4
5:00 PM	0	0		0		1	0	0			2		3
5:15 PM	0	0		1		0	0	1			1		3
5:30 PM	0	0		0		0	0	1			0		1
5:45 PM	0	1		0		0	0	1			3		5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	4	0	1	0	5	1	3	0	0	11	0	26
APPROACH %'s :	20.00%	80.00%	0.00%	16.67%	0.00%	83.33%	25.00%	75.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	1	3	0	0	0	4	1	0	0	0	5	0	14
PEAK HR FACTOR :		0.250			0.500			0.250			0.625		0.583

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_005 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

AM

NS/EW Streets:	Palos Verdes Blvd			Palos Verdes Blvd			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM													
7:15 AM								1			1		2
7:30 AM								2			1		3
7:45 AM								1			0		1
8:00 AM								1			2		3
8:15 AM								1			1		2
8:30 AM								1			0		1
8:45 AM								1			0		1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	8	0	0	5	0	13
APPROACH %'s :							0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	5	0	0	4	0	9
PEAK HR FACTOR :		0.000			0.000			0.625			0.500		0.750

CONTROL : 0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_005 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

PM

NS/EW Streets:	Palos Verdes Blvd			Palos Verdes Blvd			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	1							2	0		2		5
4:15 PM	0							1	0		1		2
4:30 PM	0							1	0		1		2
4:45 PM	0							3	1		1		5
5:00 PM	0							1	0		0		1
5:15 PM													
5:30 PM	0							1	0		0		1
5:45 PM	0							1	0		0		1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	0	10	1	0	5	0	17
APPROACH %'s :	100.00%	0.00%	0.00%				0.00%	90.91%	9.09%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	7	1	0	5	0	14
PEAK HR FACTOR :		0.250			0.000			0.500			0.625		0.700

CONTROL : 0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_005 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

AM

NS/EW Streets:	Palos Verdes Blvd			Palos Verdes Blvd			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0		0	0			0	1	0	0	0	0	1
7:15 AM	0		0	0			0	0	0	2	0	0	2
7:30 AM	0		0	0			1	1	0	2	1	0	5
7:45 AM	0		0	0			0	0	0	1	0	0	1
8:00 AM	0		0	0			0	0	0	1	1	0	2
8:15 AM	0		0	1			1	0	0	0	1	0	3
8:30 AM	0		1	0			0	1	0	0	0	0	2
8:45 AM	1		1	0			1	1	1	0	1	0	6
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	0	2	1	0	0	3	4	1	6	4	0	22
APPROACH %'s :	33.33%	0.00%	66.67%	100.00%	0.00%	0.00%	37.50%	50.00%	12.50%	60.00%	40.00%	0.00%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	1	0	2	1	0	0	2	2	1	1	3	0	13
PEAK HR FACTOR :		0.375			0.250			0.417			0.500		0.542

CONTROL : 0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_005 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

PM

NS/EW Streets:	Palos Verdes Blvd			Palos Verdes Blvd			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM													
4:15 PM		0	1	0	0				0			0	1
4:30 PM		0	0	0	0				1			0	1
4:45 PM		0	0	1	1				0			0	2
5:00 PM													
5:15 PM													
5:30 PM		0	0	0	1				0			0	1
5:45 PM		1	0	0	0				0			0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	1	1	2	0	0	0	1	0	0	0	6
APPROACH %'s :	0.00%	50.00%	50.00%	33.33%	66.67%	0.00%	0.00%	0.00%	100.00%				
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	1	1	1	0	0	0	1	0	0	0	4
PEAK HR FACTOR :		0.250			0.250			0.250			0.000		0.500

CONTROL : 0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5524-006

Day: Wednesday

City: Hermosa Beach

Date: 9/10/2014

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			2nd St			2nd St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	0	0	3	0	0	1	0	0	1	0					
7:00 AM	1	713	0	0	212	3	17	0	5	2	0	1	954	0	0	0	0
7:15 AM	2	659	0	0	274	11	21	0	1	1	1	7	977	0	0	0	0
7:30 AM	0	593	1	0	304	6	29	0	7	3	0	8	951	0	0	0	0
7:45 AM	7	391	1	0	267	14	22	0	4	5	1	4	716	0	0	0	0
8:00 AM	8	395	1	0	244	17	33	0	11	3	3	11	726	0	0	0	0
8:15 AM	2	430	0	0	292	15	18	0	5	3	1	7	773	0	0	0	0
8:30 AM	5	443	0	2	311	6	24	0	5	0	1	0	797	0	0	0	0
8:45 AM	9	526	1	1	274	11	13	0	5	1	0	4	845	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	34	4150	4	3	2178	83	177	0	43	18	7	42	6739	0	0	0	0
APPROACH %'s :	0.81%	99.09%	0.10%	0.13%	96.20%	3.67%	80.45%	0.00%	19.55%	26.87%	10.45%	62.69%					

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	10	2356	2	0	1057	34	89	0	17	11	2	20	3598
PEAK HR FACTOR :		0.829			0.880			0.736			0.750		0.921

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5524-006

Day: Wednesday

City: Hermosa Beach

Date: 9/10/2014

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			2nd St			2nd St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	0	0	3	0	0	1	0	0	1	0					
4:00 PM	11	347	0	0	492	12	19	0	9	1	0	9	900	0	0	0	0
4:15 PM	8	340	2	1	502	16	15	0	9	3	1	7	904	0	0	0	0
4:30 PM	13	363	0	0	501	15	25	0	6	1	1	3	928	0	0	0	0
4:45 PM	14	385	0	1	551	21	20	0	9	4	0	0	1005	0	0	0	0
5:00 PM	10	359	1	0	540	11	15	0	16	1	2	4	959	0	0	0	0
5:15 PM	11	383	1	0	542	19	28	0	12	7	1	2	1006	1	0	0	0
5:30 PM	6	385	1	0	541	20	27	0	5	2	1	6	994	0	0	0	0
5:45 PM	6	343	2	2	561	17	19	0	12	0	0	7	969	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	79	2905	7	4	4230	131	168	0	78	19	6	38	7665	1	0	0	0
APPROACH %'s :	2.64%	97.12%	0.23%	0.09%	96.91%	3.00%	68.29%	0.00%	31.71%	30.16%	9.52%	60.32%					
PEAK HR START TIME :	445 PM												TOTAL				
PEAK HR VOL :	41	1512	3	1	2174	71	90	0	42	14	4	12	3964				
PEAK HR FACTOR :		0.975			0.980			0.825			0.750		0.985				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5524-006
N/S Street: Pacific Coast Hwy
E/W Street: 2nd St
DATE: 9/10/2014 DAY: Wednesday
CITY: Hermosa Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	1	1	0	0	1
7:15 AM	0	0	1	1	1	0	0	0
7:30 AM	0	0	2	0	4	2	3	1
7:45 AM	0	0	4	1	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	3	0	1	2	0
8:30 AM	0	0	0	3	0	2	1	3
8:45 AM	0	0	1	2	0	2	3	0
TOTALS	**0**	**0**	**8**	**11**	**6**	**7**	**9**	**6**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	2	0	0	0	1	0	0	0
7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	2	0	1	0	0	1	1	0
8:30 AM	0	1	0	0	0	0	0	0	0	1	0	0
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0
TOTALS	**0**	**2**	**0**	**0**	**8**	**0**	**1**	**0**	**1**	**2**	**1**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	2	0	0	0	1
4:15 PM	0	0	2	4	4	0	1	0
4:30 PM	0	0	0	4	1	5	2	1
4:45 PM	0	0	0	0	1	0	1	0
5:00 PM	0	0	1	1	0	2	3	0
5:15 PM	0	0	2	4	1	0	1	4
5:30 PM	0	0	3	3	2	1	1	0
5:45 PM	0	0	3	6	3	1	4	1
TOTALS	**0**	**0**	**11**	**24**	**12**	**9**	**13**	**7**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	1	1	0	0	0	0	0	0
4:15 PM	0	0	0	0	1	0	1	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	2	0	0	0	0	0	0	0
5:00 PM	0	4	0	0	0	0	0	0	0	1	0	0
5:15 PM	0	0	0	0	6	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:45 PM	0	1	0	0	1	0	0	0	0	1	0	0
TOTALS	**0**	**6**	**0**	**0**	**12**	**1**	**1**	**0**	**0**	**2**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5524-001

Day: Wednesday

City: Hermosa Beach

Date: 9/10/2014

AM

NS/EW Streets:	Hermosa Ave			Hermosa Ave			13th St			13th St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	0	2	0	0	1	0	0	0	0					
7:00 AM	9	60	0	1	28	3	1	0	3	0	0	0	105	6	1	0	0
7:15 AM	3	76	0	0	26	3	2	0	2	0	0	0	112	1	0	0	0
7:30 AM	7	102	0	0	35	3	2	0	6	0	0	0	155	4	0	0	0
7:45 AM	9	133	0	0	48	4	0	0	4	0	0	0	198	3	0	0	0
8:00 AM	11	168	0	0	49	7	3	0	1	0	0	0	239	2	0	0	0
8:15 AM	13	171	0	0	64	4	3	0	6	0	0	0	261	3	0	0	0
8:30 AM	11	128	0	0	57	7	5	0	1	0	0	0	209	3	0	0	0
8:45 AM	15	116	0	0	49	5	1	0	3	0	0	0	189	4	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	78	954	0	1	356	36	17	0	26	0	0	0	1468	26	1	0	0
APPROACH %'s :	7.56%	92.44%	0.00%	0.25%	90.59%	9.16%	39.53%	0.00%	60.47%	#DIV/0!	#DIV/0!	#DIV/0!					
PEAK HR START TIME :	745 AM												TOTAL				
PEAK HR VOL :	44	600	0	0	218	22	11	0	12	0	0	0	907				
PEAK HR FACTOR :	0.875			0.882			0.639			0.000			0.869				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5524-001

Day: Wednesday

City: Hermosa Beach

Date: 9/10/2014

PM

NS/EW Streets:	Hermosa Ave			Hermosa Ave			13th St			13th St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	0	2	0	0	1	0	0	0	0					
4:00 PM	10	52	0	0	68	2	4	0	16	0	0	0	152	6	0	0	0
4:15 PM	19	50	0	0	95	7	5	0	6	0	0	0	182	8	0	0	0
4:30 PM	10	69	0	1	93	3	1	0	13	0	0	0	190	6	1	0	0
4:45 PM	15	63	0	0	96	1	5	0	6	0	0	0	186	6	0	0	0
5:00 PM	15	64	0	0	104	0	2	0	17	0	0	0	202	8	0	0	0
5:15 PM	22	85	0	0	101	7	5	0	10	0	0	0	230	7	0	0	0
5:30 PM	23	63	0	0	99	4	10	0	22	0	0	0	221	7	0	0	0
5:45 PM	24	57	0	0	84	2	7	0	18	0	0	0	192	4	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	138	503	0	1	740	26	39	0	108	0	0	0	1555	52	1	0	0
APPROACH %'s :	21.53%	78.47%	0.00%	0.13%	96.48%	3.39%	26.53%	0.00%	73.47%	#DIV/0!	#DIV/0!	#DIV/0!					
PEAK HR START TIME :	500 PM												TOTAL				
PEAK HR VOL :	84	269	0	0	388	13	24	0	67	0	0	0	845				
PEAK HR FACTOR :	0.825			0.928			0.711			0.000			0.918				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5524-001
N/S Street: Hermosa Ave
E/W Street: 13th St
DATE: 9/10/2014 DAY: Wednesday
CITY: Hermosa Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	2	4	4	0	0	12	16
7:15 AM	0	0	4	8	0	0	10	9
7:30 AM	0	1	3	6	0	0	13	14
7:45 AM	1	0	4	2	0	0	14	15
8:00 AM	0	0	3	7	0	0	17	16
8:15 AM	3	2	8	3	0	0	10	19
8:30 AM	3	3	6	3	0	0	11	22
8:45 AM	3	1	6	6	0	0	18	29
TOTALS	**10**	**9**	**38**	**39**	**0**	**0**	**105**	**140**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	1	7	0	0	7	2	0	0	0	0	0	0
7:15 AM	2	4	0	0	6	0	0	0	0	0	0	0
7:30 AM	0	5	0	0	1	2	0	0	0	0	0	0
7:45 AM	4	0	0	0	6	1	0	0	0	0	0	0
8:00 AM	0	3	0	0	7	0	0	0	0	0	0	0
8:15 AM	2	6	0	0	3	0	0	0	0	0	0	0
8:30 AM	1	5	0	0	5	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	10	0	1	0	1	0	0	0
TOTALS	**10**	**31**	**0**	**0**	**45**	**5**	**1**	**0**	**1**	**0**	**0**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	4	4	0	0	9	23
4:15 PM	0	0	8	0	0	0	22	23
4:30 PM	0	0	1	3	0	0	23	23
4:45 PM	0	0	3	12	0	0	27	18
5:00 PM	2	0	1	1	0	0	9	19
5:15 PM	0	1	7	6	0	0	14	14
5:30 PM	0	0	11	9	0	0	41	32
5:45 PM	0	0	3	6	0	0	20	26
TOTALS	**2**	**1**	**38**	**41**	**0**	**0**	**165**	**178**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	4	0	1	11	0	0	0	1	0	0	0
4:15 PM	0	3	0	0	9	0	0	0	0	0	0	0
4:30 PM	1	2	0	0	5	0	1	0	0	0	0	0
4:45 PM	0	2	1	1	8	0	1	0	1	0	0	0
5:00 PM	0	3	0	0	16	0	0	0	1	0	0	0
5:15 PM	0	4	0	0	9	0	0	0	0	0	0	0
5:30 PM	0	8	1	0	9	0	1	0	1	0	0	0
5:45 PM	0	3	0	0	6	1	0	0	0	0	0	0
TOTALS	**1**	**29**	**2**	**2**	**73**	**1**	**3**	**0**	**4**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5524-005

Day: Wednesday

City: Hermosa Beach

Date: 9/10/2014

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Pier Ave			Pier Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	2	3	0	1	3	0	2	0	1	0	1	0					
7:00 AM	39	550	0	0	141	13	50	0	39	0	0	0	832	0	0	0	0
7:15 AM	44	546	0	0	164	14	52	0	33	0	0	0	853	0	0	0	0
7:30 AM	49	431	0	0	164	14	69	0	51	0	0	1	779	0	0	0	0
7:45 AM	51	295	3	0	174	21	61	1	44	0	1	5	656	0	0	0	0
8:00 AM	73	313	1	1	185	30	85	0	49	0	0	1	738	0	1	0	0
8:15 AM	57	359	3	2	191	27	83	0	52	0	0	0	774	0	0	0	0
8:30 AM	57	326	1	0	209	31	70	3	53	0	0	2	752	0	0	0	0
8:45 AM	91	405	2	0	224	31	41	0	40	0	0	2	836	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	461	3225	10	3	1452	181	511	4	361	0	1	11	6220	0	1	0	0
APPROACH %'s :	12.47%	87.26%	0.27%	0.18%	88.75%	11.06%	58.33%	0.46%	41.21%	0.00%	8.33%	91.67%					

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	183	1822	3	0	643	62	232	1	167	0	1	6	3120
PEAK HR FACTOR :		0.851			0.904			0.833			0.292		0.914

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5524-005

Day: Wednesday

City: Hermosa Beach

Date: 9/10/2014

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			Pier Ave			Pier Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	2	3	0	1	3	0	2	0	1	0	1	0					
4:00 PM	89	269	4	1	423	40	48	1	81	0	0	1	957	0	0	0	0
4:15 PM	63	238	1	1	403	28	38	0	69	0	0	3	844	0	0	0	0
4:30 PM	75	245	2	0	438	27	57	0	66	0	0	1	911	0	0	0	0
4:45 PM	89	275	1	1	489	35	50	0	64	0	0	1	1005	0	0	0	0
5:00 PM	59	230	1	1	432	41	55	1	71	0	0	1	892	0	0	0	0
5:15 PM	95	277	4	2	422	39	61	0	48	1	0	5	954	0	1	0	0
5:30 PM	77	282	0	2	461	32	64	0	61	0	0	5	984	0	0	0	0
5:45 PM	89	257	1	1	471	42	42	0	59	0	0	2	964	0	1	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	636	2073	14	9	3539	284	415	2	519	1	0	19	7511	0	2	0	0
APPROACH %'s :	23.36%	76.13%	0.51%	0.23%	92.35%	7.41%	44.34%	0.21%	55.45%	5.00%	0.00%	95.00%					
PEAK HR START TIME :	445 PM												TOTAL				
PEAK HR VOL :	320	1064	6	6	1804	147	230	1	244	1	0	12	3835				
PEAK HR FACTOR :		0.924			0.932			0.935			0.542		0.954				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5524-005
N/S Street: Pacific Coast Hwy
E/W Street: Pier Ave
DATE: 9/10/2014 DAY: Wednesday
CITY: Hermosa Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	2	3	1	1	1	0
7:15 AM	0	0	4	5	3	6	1	0
7:30 AM	0	0	6	2	1	2	1	1
7:45 AM	0	0	3	29	0	4	1	1
8:00 AM	0	0	3	19	3	1	5	4
8:15 AM	0	0	10	2	5	3	0	2
8:30 AM	0	0	2	7	0	2	1	6
8:45 AM	0	0	2	7	0	2	1	2
TOTALS	**0**	**0**	**32**	**74**	**13**	**21**	**11**	**16**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	1	0	0	0	2	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	1	0	0	0	0	0	0	0	3	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	5	0
8:00 AM	0	2	0	0	0	0	1	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	0	1	0	0	1	0
8:30 AM	0	0	1	0	1	0	0	0	1	0	4	0
8:45 AM	0	1	0	0	0	0	0	0	0	1	3	0
TOTALS	**0**	**5**	**2**	**0**	**1**	**0**	**2**	**1**	**1**	**1**	**18**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	2	3	2	1	0	3
4:15 PM	0	0	3	7	0	2	1	1
4:30 PM	0	0	3	2	0	0	1	0
4:45 PM	0	0	1	8	2	5	2	0
5:00 PM	0	0	6	2	0	0	0	6
5:15 PM	0	0	3	8	21	2	2	2
5:30 PM	0	0	16	8	2	1	12	2
5:45 PM	0	0	9	8	0	0	5	1
TOTALS	**0**	**0**	**43**	**46**	**27**	**11**	**23**	**15**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	1	1	0	0	0	0	4	0
4:15 PM	0	0	0	0	2	2	0	0	1	0	0	0
4:30 PM	1	2	0	0	0	0	0	0	0	0	2	0
4:45 PM	1	1	0	0	1	2	2	0	1	0	1	0
5:00 PM	1	1	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	1	0	0	1	2	0	1	0
5:30 PM	0	0	0	0	0	1	0	0	5	0	0	0
5:45 PM	0	0	0	0	1	0	0	1	0	0	3	0
TOTALS	**3**	**4**	**0**	**0**	**6**	**6**	**2**	**2**	**9**	**0**	**11**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5524-007

Day: Wednesday

City: Hermosa Beach

Date: 9/10/2014

AM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			16th St			16th St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	0	1	2	1	1	0	1	1	0	1					
7:00 AM	13	598	1	1	140	26	20	0	12	0	0	1	812	0	0	0	0
7:15 AM	19	527	3	0	174	24	7	0	18	1	0	1	774	0	0	0	0
7:30 AM	17	416	11	3	156	26	14	0	11	2	0	3	659	0	0	0	0
7:45 AM	13	316	9	2	163	31	25	0	18	5	0	2	584	0	0	0	0
8:00 AM	17	392	16	4	201	30	16	0	15	4	0	3	698	2	0	0	0
8:15 AM	19	369	22	4	210	30	29	0	19	10	0	8	720	0	1	0	0
8:30 AM	25	349	5	4	230	48	17	0	18	5	0	9	710	0	1	0	0
8:45 AM	18	466	4	3	228	38	14	0	10	7	0	4	792	1	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	141	3433	71	21	1502	253	142	0	121	34	0	31	5749	3	2	0	0
APPROACH %'s :	3.87%	94.18%	1.95%	1.18%	84.57%	14.25%	53.99%	0.00%	46.01%	52.31%	0.00%	47.69%					
PEAK HR START TIME :	800 AM												TOTAL				
PEAK HR VOL :	79	1576	47	15	869	146	76	0	62	26	0	24	2920				
PEAK HR FACTOR :		0.872			0.913			0.719			0.694		0.922				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 14-5524-007

Day: Wednesday

City: Hermosa Beach

Date: 9/10/2014

PM

NS/EW Streets:	Pacific Coast Hwy			Pacific Coast Hwy			16th St			16th St				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	3	0	1	2	1	1	0	1	1	0	1					
4:00 PM	12	255	5	1	404	61	33	0	27	5	0	1	804	0	0	0	0
4:15 PM	19	263	7	0	455	50	28	0	19	5	0	3	849	0	0	0	0
4:30 PM	33	295	9	3	460	57	32	0	17	4	0	1	911	1	1	0	0
4:45 PM	30	284	4	0	486	47	18	0	21	5	0	2	897	2	0	0	0
5:00 PM	10	265	3	0	475	42	34	0	24	2	0	0	855	0	0	0	0
5:15 PM	29	290	8	0	455	57	27	0	23	5	0	0	894	2	0	0	0
5:30 PM	25	288	3	2	447	58	28	0	28	2	0	1	882	2	1	0	0
5:45 PM	19	270	3	2	467	42	36	0	22	6	0	1	868	1	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	177	2210	42	8	3649	414	236	0	181	34	0	9	6960	8	2	0	0
APPROACH %'s :	7.29%	90.98%	1.73%	0.20%	89.63%	10.17%	56.59%	0.00%	43.41%	79.07%	0.00%	20.93%					
PEAK HR START TIME :	430 PM												TOTAL				
PEAK HR VOL :	102	1134	24	3	1876	203	111	0	85	16	0	3	3557				
PEAK HR FACTOR :		0.935			0.977			0.845			0.679		0.976				

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 14-5524-007
N/S Street: Pacific Coast Hwy
E/W Street: 16th St
DATE: 9/10/2014 DAY: Wednesday
CITY: Hermosa Beach

A M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	2	1	3	0	1	0	2
7:15 AM	0	2	2	1	2	0	0	1
7:30 AM	0	0	0	1	0	0	0	3
7:45 AM	3	5	5	47	1	0	2	0
8:00 AM	5	9	17	22	7	0	3	0
8:15 AM	1	0	10	2	1	2	0	5
8:30 AM	0	3	5	8	3	1	3	1
8:45 AM	1	4	2	2	4	0	0	1
TOTALS	**12**	**25**	**42**	**86**	**18**	**4**	**8**	**13**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	1	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	2	0
7:45 AM	0	0	0	0	1	1	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	1	1	0	0	0	1	0	0	1	0	0	0
8:30 AM	0	0	1	0	1	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**1**	**2**	**1**	**0**	**2**	**2**	**1**	**0**	**1**	**0**	**2**	**0**

P M

PEDESTRIANS

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	3	2	2	1	1	4	2
4:15 PM	2	4	4	1	0	1	0	3
4:30 PM	4	0	1	4	0	0	3	5
4:45 PM	2	1	0	4	0	1	3	2
5:00 PM	2	1	2	4	1	3	0	2
5:15 PM	2	4	2	1	3	0	0	1
5:30 PM	1	1	1	8	3	5	4	6
5:45 PM	0	0	4	5	3	5	3	2
TOTALS	**13**	**14**	**16**	**29**	**11**	**16**	**17**	**23**

BIKES

TIME	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	3	0	0	1	0	0	0	0
4:30 PM	0	2	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	1	0	0	2	0	1	0	0	0	0	0
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0
5:15 PM	0	0	0	0	1	0	0	1	0	0	0	0
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**0**	**3**	**0**	**0**	**8**	**1**	**1**	**2**	**0**	**0**	**1**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_009 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

AM

NS/EW Streets:	Prospect Ave			Prospect Ave			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	1	2	4	24	1	6	7	137	0	0	184	21	387
7:15 AM	3	10	5	32	0	3	9	160	1	3	202	23	451
7:30 AM	3	11	1	54	0	11	13	189	0	2	243	54	581
7:45 AM	1	12	5	55	0	15	27	155	0	1	235	68	574
8:00 AM	4	3	3	43	4	19	16	175	0	1	265	52	585
8:15 AM	0	7	0	78	2	18	11	187	0	0	210	30	543
8:30 AM	1	3	4	33	0	11	9	173	1	1	214	39	489
8:45 AM	4	4	3	39	3	19	15	164	1	0	246	35	533
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	17	52	25	358	10	102	107	1340	3	8	1799	322	4143
APPROACH %'s :	18.09%	55.32%	26.60%	76.17%	2.13%	21.70%	7.38%	92.41%	0.21%	0.38%	84.50%	15.12%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	8	33	9	230	6	63	67	706	0	4	953	204	2283
PEAK HR FACTOR :		0.694			0.763			0.957			0.913		0.976

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_009 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

PM

NS/EW Streets:	Prospect Ave			Prospect Ave			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	5	6	3	56	5	18	11	250	1	4	234	46	639
4:15 PM	0	1	2	65	5	33	20	229	2	4	217	50	628
4:30 PM	3	3	4	57	6	19	23	240	1	2	235	39	632
4:45 PM	0	8	1	60	7	17	14	225	3	0	230	63	628
5:00 PM	0	4	5	82	3	18	12	282	0	2	293	59	760
5:15 PM	0	3	6	57	5	20	15	229	2	5	286	48	676
5:30 PM	3	4	4	71	2	18	11	247	0	1	314	51	726
5:45 PM	2	7	4	49	4	29	14	248	6	5	237	49	654
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	13	36	29	497	37	172	120	1950	15	23	2046	405	5343
APPROACH %'s :	16.67%	46.15%	37.18%	70.40%	5.24%	24.36%	5.76%	93.53%	0.72%	0.93%	82.70%	16.37%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	5	18	19	259	14	85	52	1006	8	13	1130	207	2816
PEAK HR FACTOR :		0.808			0.869			0.906			0.922		0.926

CONTROL :

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 11-5370-009
N/S Street: Prospect Ave
E/W Street: Pacific Coast Hwy
DATE: 9/27/11 DAY: 9/27/11
CITY: Redondo Beach

A M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	1	0	3	0	0	0
7:15 AM	0	0	1	0	2	0	0	1
7:30 AM	0	0	1	0	0	3	5	0
7:45 AM	0	1	1	3	0	2	1	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**1**	**4**	**3**	**5**	**5**	**6**	**1**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	1	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	0	0	1	0	1	2	1
4:15 PM	0	1	0	6	3	4	2	6
4:30 PM	0	0	1	6	0	1	4	0
4:45 PM	0	0	1	6	2	1	2	4
5:00 PM	0	0	0	1	2	1	1	2
5:15 PM	0	0	3	1	7	0	2	1
5:30 PM	0	0	0	2	0	0	1	3
5:45 PM	0	0	1	3	0	0	2	0
TOTALS	**1**	**1**	**6**	**26**	**14**	**8**	**16**	**17**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	0	1	1	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**1**	**1**	**0**	**0**	**0**	**1**	**1**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_009 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

AM

NS/EW Streets:	Prospect Ave			Prospect Ave			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM													
7:15 AM													
7:30 AM													
7:45 AM													
8:00 AM													
8:15 AM								1			2	1	4
8:30 AM								1			1	0	2
8:45 AM								0			0	2	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	2	0	0	3	3	8
APPROACH %'s :							0.00%	100.00%	0.00%	0.00%	50.00%	50.00%	

PEAK HR START TIME :	815 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	2	0	0	3	3	8
PEAK HR FACTOR :		0.000			0.000			0.500			0.500		0.500

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_009 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

PM

NS/EW Streets:	Prospect Ave			Prospect Ave			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM													
4:15 PM													
4:30 PM		1		0	0			0			1		2
4:45 PM		0		0	0			0			2		2
5:00 PM		0		0	0			0			2		2
5:15 PM		0		1	0			0			1		2
5:30 PM		0		0	1			1			1		3
5:45 PM		1		0	0			0			2		3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2	0	1	1	0	0	1	0	0	9	0	14
APPROACH %'s :	0.00%	100.00%	0.00%	50.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	1	0	1	1	0	0	1	0	0	6	0	10
PEAK HR FACTOR :		0.250			0.500			0.250			0.750		0.833

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_009 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

AM

NS/EW Streets:	Prospect Ave			Prospect Ave			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM								1			2		3
7:15 AM								1			1		2
7:30 AM								2			1		3
7:45 AM								1			1		2
8:00 AM								0			1		1
8:15 AM								1			1		2
8:30 AM								1			0		1
8:45 AM								1			0		1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	8	0	0	7	0	15
APPROACH %'s :							0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	5	0	0	5	0	10
PEAK HR FACTOR :		0.000			0.000			0.625			0.625		0.833

CONTROL : 0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_009 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

PM

NS/EW Streets:	Prospect Ave			Prospect Ave			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM		0		1				2			3		6
4:15 PM		0		0				0			2		2
4:30 PM		0		0				2			0		2
4:45 PM		0		0				3			1		4
5:00 PM		0		0				1			0		1
5:15 PM		1		0				1			1		3
5:30 PM		0		0				1			1		2
5:45 PM		0		0				2			1		3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	0	1	0	0	0	12	0	0	9	0	23
APPROACH %'s :	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	0	0	1	0	0	0	7	0	0	6	0	14
PEAK HR FACTOR :		0.000			0.250			0.583			0.500		0.583

CONTROL : 0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_009 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

AM

NS/EW Streets:	Prospect Ave			Prospect Ave			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM						0		1			1		2
7:15 AM						0		0			2		2
7:30 AM						0		0			2		2
7:45 AM													
8:00 AM						1		0			3		4
8:15 AM						1		0			0		1
8:30 AM						0		1			0		1
8:45 AM						0		2			0		2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	2	0	4	0	0	8	0	14
APPROACH %'s :				0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	2	0	3	0	0	3	0	8
PEAK HR FACTOR :		0.000			0.500			0.375			0.250		0.500

CONTROL : 0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_5370_009 **Day:** TUESDAY

City: Redondo Beach **Date:** 9/27/11

PM

NS/EW Streets:	Prospect Ave			Prospect Ave			Pacific Coast Hwy			Pacific Coast Hwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM													
4:15 PM								0			1	0	1
4:30 PM								1			0	0	1
4:45 PM													
5:00 PM													
5:15 PM								1			0	0	1
5:30 PM								0			0	1	1
5:45 PM													
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	2	0	0	1	1	4
APPROACH %'s :							0.00%	100.00%	0.00%	0.00%	50.00%	50.00%	

PEAK HR START TIME :	515 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	1	0	0	0	1	2
PEAK HR FACTOR :		0.000			0.000			0.250			0.250		0.500

CONTROL : 0

APPENDIX X-4: LOS WORKSHEETS

EXISTING

Project Title: **Redondo Beach Waterfront**
Intersection: **4 Harbor Dr/Hermosa Ave & Herondo St**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.281 *
	TH	1.00	127	1,600	0.079	N-S(2):	0.079
	LT	1.00	117	1,600	0.073 *	E-W(1):	0.062
Westbound	RT	1.00	276	1,600	0.136 *	E-W(2):	0.137 *
	TH	0.00	0	0	0.000		
	LT	1.00	99	1,600	0.062	V/C:	0.418
Northbound	RT	0.00	65	0	0.000	Lost Time:	0.100
	TH	1.00	268	1,600	0.208 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.518
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.281 *
	TH	1.00	337	1,600	0.211	N-S(2):	0.212
	LT	1.00	159	1,600	0.099 *	E-W(1):	0.110 *
Westbound	RT	1.00	163	1,600	0.052	E-W(2):	0.052
	TH	0.00	0	0	0.000		
	LT	1.00	176	1,600	0.110 *	V/C:	0.391
Northbound	RT	0.00	114	0	0.000	Lost Time:	0.100
	TH	1.00	176	1,600	0.182 *	ITS:	0.000
	LT	0.00	1	1,600	0.001		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.491
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **7 Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	161	1,600	0.101	N-S(1):	0.557 *
	TH	2.00	900	3,200	0.281	N-S(2):	0.295
	LT	1.00	153	1,600	0.096 *	E-W(1):	0.239 *
Westbound	RT	1.00	401	1,600	0.155	E-W(2):	0.228
	TH	1.00	182	1,600	0.114		
	LT	2.00	250	2,880	0.087 *	V/C:	0.796
Northbound	RT	1.00	115	1,600	0.028	Lost Time:	0.100
	TH	3.00	2,213	4,800	0.461 *	ITS:	0.000
	LT	1.00	23	1,600	0.014		
Eastbound	RT	1.00	56	1,600	0.028	ICU:	0.896
	TH	1.00	243	1,600	0.152 *		
	LT	1.00	116	1,600	0.073	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	502	1,600	0.314	N-S(1):	0.424
	TH	2.00	1,836	3,200	0.574 *	N-S(2):	0.623 *
	LT	1.00	214	1,600	0.134	E-W(1):	0.266 *
Westbound	RT	1.00	266	1,600	0.033	E-W(2):	0.221
	TH	1.00	278	1,600	0.174		
	LT	2.00	296	2,880	0.103 *	V/C:	0.889
Northbound	RT	1.00	216	1,600	0.084	Lost Time:	0.100
	TH	3.00	1,391	4,800	0.290	ITS:	0.000
	LT	1.00	78	1,600	0.049 *		
Eastbound	RT	1.00	96	1,600	0.060	ICU:	0.989
	TH	1.00	261	1,600	0.163 *		
	LT	1.00	75	1,600	0.047	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **8 Prospect Ave & Anita St**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	30	0	0.000	N-S(1):	0.308 *
	TH	2.00	324	3,200	0.111	N-S(2):	0.251
	LT	1.00	62	1,600	0.039 *	E-W(1):	0.258
Westbound	RT	0.00	83	0	0.000	E-W(2):	0.271 *
	TH	2.00	741	3,200	0.258 *		
	LT	1.00	144	1,600	0.090	V/C:	0.579
Northbound	RT	1.00	157	1,600	0.053	Lost Time:	0.100
	TH	1.00	430	1,600	0.269 *	ITS:	0.000
	LT	1.00	224	1,600	0.140		
Eastbound	RT	0.00	59	0	0.000	ICU:	0.679
	TH	2.00	477	3,200	0.168		
	LT	1.00	20	1,600	0.013 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	55	0	0.000	N-S(1):	0.240
	TH	2.00	558	3,200	0.192 *	N-S(2):	0.278 *
	LT	1.00	89	1,600	0.056	E-W(1):	0.286 *
Westbound	RT	0.00	80	0	0.000	E-W(2):	0.258
	TH	2.00	685	3,200	0.239		
	LT	1.00	107	1,600	0.067 *	V/C:	0.564
Northbound	RT	1.00	76	1,600	0.014	Lost Time:	0.100
	TH	1.00	295	1,600	0.184	ITS:	0.000
	LT	1.00	138	1,600	0.086 *		
Eastbound	RT	0.00	105	0	0.000	ICU:	0.664
	TH	2.00	596	3,200	0.219 *		
	LT	1.00	31	1,600	0.019	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **9 Harbor Dr & Yacht Club Way**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.219 *
	TH	1.00	161	1,600	0.114	N-S(2):	0.125
	LT	1.00	6	1,600	0.004 *	E-W(1):	0.033 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.024
	TH	1.00	1	1,600	0.002		
	LT	0.00	2	1,600	0.001 *	V/C:	0.252
Northbound	RT	0.00	1	0	0.000	Lost Time:	0.100
	TH	1.00	343	1,600	0.215 *	ITS:	0.000
	LT	1.00	17	1,600	0.011		
Eastbound	RT	0.00	15	0	0.000	ICU:	0.352
	TH	1.00	1	1,600	0.032 *		
	LT	0.00	35	1,600	0.022	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	50	0	0.000	N-S(1):	0.148
	TH	1.00	456	1,600	0.316 *	N-S(2):	0.330 *
	LT	1.00	11	1,600	0.007	E-W(1):	0.033
Westbound	RT	0.00	41	0	0.000	E-W(2):	0.047 *
	TH	1.00	0	1,600	0.028 *		
	LT	0.00	3	1,600	0.002	V/C:	0.377
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	1.00	223	1,600	0.141	ITS:	0.000
	LT	1.00	23	1,600	0.014 *		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.477
	TH	1.00	0	1,600	0.031		
	LT	0.00	31	1,600	0.019 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **10 Pacific Coast Hwy & Catalina Ave**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000	N-S(1):	0.564 *
	TH	2.00	1,073	3,200	0.336	N-S(2):	0.340
	LT	0.00	0	0	0.000 *	E-W(1):	0.170
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.191 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.755
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,804	3,200	0.564 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.01	4	23	0.170	ICU:	0.855
	TH	0.00	0	0	0.000		
	LT	1.99	547	2,859	0.191 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	2	0	0.000	N-S(1):	0.420
	TH	2.00	2,067	3,200	0.647 *	N-S(2):	0.656 *
	LT	0.00	0	0	0.000	E-W(1):	0.110
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.127 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.783
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,343	3,200	0.420	ITS:	0.000
	LT	1.00	15	1,600	0.009 *		
Eastbound	RT	0.12	22	192	0.110	ICU:	0.883
	TH	0.00	0	0	0.000		
	LT	1.88	345	2,707	0.127 *	LOS:	D

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **11 Harbor Dr & Marina Way**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	76	1,600	0.048	N-S(1):	0.154 *
	TH	1.00	151	1,600	0.094	N-S(2):	0.130
	LT	0.00	0	0	0.000 *	E-W(1):	0.008
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.027 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.181
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	246	1,600	0.154 *	ITS:	0.000
	LT	1.00	57	1,600	0.036		
Eastbound	RT	1.00	42	1,600	0.008	ICU:	0.281
	TH	0.00	0	0	0.000		
	LT	1.00	43	1,600	0.027 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	72	1,600	0.045	N-S(1):	0.156
	TH	1.00	430	1,600	0.269 *	N-S(2):	0.323 *
	LT	0.00	0	0	0.000	E-W(1):	0.017
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.036 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.359
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	250	1,600	0.156	ITS:	0.000
	LT	1.00	87	1,600	0.054 *		
Eastbound	RT	1.00	71	1,600	0.017	ICU:	0.459
	TH	0.00	0	0	0.000		
	LT	1.00	58	1,600	0.036 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **12 Catalina Ave & Gertruda Ave**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	53	0	0.000	N-S(1):	0.161
	TH	2.00	226	3,200	0.087 *	N-S(2):	0.243 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.018
Westbound	RT	0.00	15	0	0.000	E-W(2):	0.028 *
	TH	1.00	3	1,600	0.020 *		
	LT	0.00	14	1,600	0.009	V/C:	0.271
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	483	3,200	0.157	ITS:	0.000
	LT	1.00	249	1,600	0.156 *		
Eastbound	RT	1.00	117	1,600	0.000	ICU:	0.371
	TH	1.00	2	1,600	0.009		
	LT	0.00	13	1,600	0.008 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	69	0	0.000	N-S(1):	0.102
	TH	2.00	610	3,200	0.212 *	N-S(2):	0.308 *
	LT	1.00	5	1,600	0.003	E-W(1):	0.132 *
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.044
	TH	1.00	4	1,600	0.013		
	LT	0.00	6	1,600	0.004 *	V/C:	0.440
Northbound	RT	0.00	7	0	0.000	Lost Time:	0.100
	TH	2.00	309	3,200	0.099	ITS:	0.000
	LT	1.00	153	1,600	0.096 *		
Eastbound	RT	1.00	281	1,600	0.128 *	ICU:	0.540
	TH	1.00	2	1,600	0.033		
	LT	0.00	50	1,600	0.031	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **15 Harbor Dr & Portofino Way/Beryl St**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	NBR, WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	14	1,600	0.005	N-S(1):	0.126 *
	TH	1.00	67	1,600	0.042	N-S(2):	0.046
	LT	1.00	118	1,600	0.074 *	E-W(1):	0.081
Westbound	RT	1.00	251	1,600	0.083 *	E-W(2):	0.091 *
	TH	1.00	64	1,600	0.040		
	LT	1.00	70	1,600	0.044	V/C:	0.217
Northbound	RT	0.00	49	0	0.000	Lost Time:	0.100
	TH	1.00	34	1,600	0.052 *	ITS:	0.000
	LT	1.00	7	1,600	0.004		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.317
	TH	1.00	53	1,600	0.037		
	LT	1.00	12	1,600	0.008 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	39	1,600	0.018	N-S(1):	0.292 *
	TH	1.00	186	1,600	0.116	N-S(2):	0.123
	LT	1.00	274	1,600	0.171 *	E-W(1):	0.200 *
Westbound	RT	1.00	300	1,600	0.016	E-W(2):	0.087
	TH	1.00	118	1,600	0.074		
	LT	1.00	182	1,600	0.114 *	V/C:	0.492
Northbound	RT	0.00	125	0	0.000	Lost Time:	0.100
	TH	1.00	68	1,600	0.121 *	ITS:	0.000
	LT	1.00	11	1,600	0.007		
Eastbound	RT	0.00	24	0	0.000	ICU:	0.592
	TH	1.00	113	1,600	0.086 *		
	LT	1.00	21	1,600	0.013	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **16 Catalina Ave & Beryl St**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	61	0	0.000	N-S(1):	0.193 *
	TH	2.00	219	3,200	0.088	N-S(2):	0.187
	LT	0.00	0	0	0.000 *	E-W(1):	0.043
Westbound	RT	1.00	7	1,600	0.004	E-W(2):	0.081 *
	TH	1.00	99	1,600	0.062 *		
	LT	1.00	24	1,600	0.015	V/C:	0.274
Northbound	RT	0.00	42	0	0.000	Lost Time:	0.100
	TH	2.00	577	3,200	0.193 *	ITS:	0.000
	LT	2.00	285	2,880	0.099		
Eastbound	RT	1.00	110	1,600	0.000	ICU:	0.374
	TH	1.00	44	1,600	0.028		
	LT	1.00	30	1,600	0.019 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	150	0	0.000	N-S(1):	0.127
	TH	2.00	577	3,200	0.228 *	N-S(2):	0.319 *
	LT	0.00	3	1,600	0.002	E-W(1):	0.121
Westbound	RT	1.00	19	1,600	0.011	E-W(2):	0.146 *
	TH	1.00	181	1,600	0.113 *		
	LT	1.00	37	1,600	0.023	V/C:	0.465
Northbound	RT	0.00	61	0	0.000	Lost Time:	0.100
	TH	2.00	339	3,200	0.125	ITS:	0.000
	LT	2.00	262	2,880	0.091 *		
Eastbound	RT	1.00	300	1,600	0.097	ICU:	0.565
	TH	1.00	156	1,600	0.098		
	LT	1.00	53	1,600	0.033 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **19 Pacific Coast Hwy & Beryl St**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	25	0	0.000	N-S(1):	0.542 *
	TH	2.00	1,035	3,200	0.331	N-S(2):	0.355
	LT	1.00	19	1,600	0.012 *	E-W(1):	0.115 *
Westbound	RT	1.00	28	1,600	0.012	E-W(2):	0.075
	TH	1.00	90	1,600	0.056		
	LT	1.00	51	1,600	0.032 *	V/C:	0.657
Northbound	RT	0.00	45	0	0.000	Lost Time:	0.100
	TH	2.00	1,652	3,200	0.530 *	ITS:	0.000
	LT	1.00	39	1,600	0.024		
Eastbound	RT	0.00	23	0	0.000	ICU:	0.757
	TH	1.00	109	1,600	0.083 *		
	LT	1.00	31	1,600	0.019	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	65	0	0.000	N-S(1):	0.418
	TH	2.00	1,883	3,200	0.609 *	N-S(2):	0.632 *
	LT	1.00	41	1,600	0.026	E-W(1):	0.169 *
Westbound	RT	1.00	41	1,600	0.013	E-W(2):	0.161
	TH	1.00	173	1,600	0.108		
	LT	1.00	60	1,600	0.038 *	V/C:	0.801
Northbound	RT	0.00	46	0	0.000	Lost Time:	0.100
	TH	2.00	1,209	3,200	0.392	ITS:	0.000
	LT	1.00	37	1,600	0.023 *		
Eastbound	RT	0.00	54	0	0.000	ICU:	0.901
	TH	1.00	155	1,600	0.131 *		
	LT	1.00	84	1,600	0.053	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **21 Catalina Ave & Carnelian St**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	0	1,600	0.000	N-S(1):	0.300 *
	TH	2.00	336	3,200	0.105	N-S(2):	0.108
	LT	1.00	21	1,600	0.013 *	E-W(1):	0.023
Westbound	RT	0.00	35	0	0.000	E-W(2):	0.038 *
	TH	1.00	1	1,600	0.034 *		
	LT	0.00	19	1,600	0.012	V/C:	0.338
Northbound	RT	1.00	22	1,600	0.008	Lost Time:	0.100
	TH	2.00	918	3,200	0.287 *	ITS:	0.000
	LT	1.00	4	1,600	0.003		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.438
	TH	1.00	4	1,600	0.011		
	LT	0.00	7	1,600	0.004 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	5	1,600	0.003	N-S(1):	0.284
	TH	2.00	984	3,200	0.308 *	N-S(2):	0.313 *
	LT	1.00	90	1,600	0.056	E-W(1):	0.027
Westbound	RT	0.00	40	0	0.000	E-W(2):	0.052 *
	TH	1.00	8	1,600	0.051 *		
	LT	0.00	33	1,600	0.021	V/C:	0.365
Northbound	RT	1.00	41	1,600	0.015	Lost Time:	0.100
	TH	2.00	729	3,200	0.228	ITS:	0.000
	LT	1.00	8	1,600	0.005 *		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.465
	TH	1.00	4	1,600	0.006		
	LT	0.00	1	1,600	0.001 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **22 Catalina Ave & Diamond St**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	4	1,600	0.000	N-S(1):	0.286 *
	TH	2.00	327	3,200	0.102	N-S(2):	0.103
	LT	1.00	26	1,600	0.016 *	E-W(1):	0.038
Westbound	RT	0.00	52	0	0.000	E-W(2):	0.044 *
	TH	1.00	1	1,600	0.033 *		
	LT	1.00	29	1,600	0.018	V/C:	0.330
Northbound	RT	1.00	63	1,600	0.030	Lost Time:	0.100
	TH	2.00	865	3,200	0.270 *	ITS:	0.000
	LT	1.00	2	1,600	0.001		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.430
	TH	1.00	9	1,600	0.020		
	LT	0.00	17	1,600	0.011 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.005	N-S(1):	0.260
	TH	2.00	949	3,200	0.297 *	N-S(2):	0.303 *
	LT	1.00	57	1,600	0.036	E-W(1):	0.037
Westbound	RT	0.00	57	0	0.000	E-W(2):	0.041 *
	TH	1.00	4	1,600	0.038 *		
	LT	1.00	49	1,600	0.031	V/C:	0.344
Northbound	RT	1.00	58	1,600	0.021	Lost Time:	0.100
	TH	2.00	717	3,200	0.224	ITS:	0.000
	LT	1.00	10	1,600	0.006 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.444
	TH	1.00	2	1,600	0.006		
	LT	0.00	4	1,600	0.003 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **23 Catalina Ave & Emerald St**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	6	1,600	0.000	N-S(1):	0.284 *
	TH	2.00	333	3,200	0.104	N-S(2):	0.108
	LT	1.00	17	1,600	0.011 *	E-W(1):	0.065
Westbound	RT	0.00	33	0	0.000	E-W(2):	0.069 *
	TH	1.00	4	1,600	0.033 *		
	LT	0.00	15	1,600	0.009	V/C:	0.353
Northbound	RT	0.00	27	0	0.000	Lost Time:	0.100
	TH	2.00	846	3,200	0.273 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.00	24	0	0.000	ICU:	0.453
	TH	1.00	9	1,600	0.056		
	LT	0.00	57	1,600	0.036 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	28	1,600	0.009	N-S(1):	0.255
	TH	2.00	931	3,200	0.291 *	N-S(2):	0.303 *
	LT	1.00	39	1,600	0.024	E-W(1):	0.045
Westbound	RT	0.00	30	0	0.000	E-W(2):	0.054 *
	TH	1.00	6	1,600	0.038 *		
	LT	0.00	24	1,600	0.015	V/C:	0.357
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	719	3,200	0.231	ITS:	0.000
	LT	1.00	19	1,600	0.012 *		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.457
	TH	1.00	6	1,600	0.030		
	LT	0.00	26	1,600	0.016 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **24 Pacific Coast Hwy & Garnet St**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	8	0	0.000	N-S(1):	0.545 *
	TH	2.00	918	3,200	0.290	N-S(2):	0.290
	LT	0.00	1	1,600	0.001 *	E-W(1):	0.017
Westbound	RT	0.00	46	0	0.000	E-W(2):	0.046 *
	TH	1.00	18	1,600	0.040 *		
	LT	1.00	3	1,600	0.002	V/C:	0.591
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	1,732	3,200	0.544 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.691
	TH	1.00	5	1,600	0.015		
	LT	1.00	9	1,600	0.006 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	30	0	0.000	N-S(1):	0.415
	TH	2.00	1,631	3,200	0.520 *	N-S(2):	0.520 *
	LT	0.00	4	1,600	0.003	E-W(1):	0.032
Westbound	RT	0.00	41	0	0.000	E-W(2):	0.043 *
	TH	1.00	16	1,600	0.036 *		
	LT	1.00	13	1,600	0.008	V/C:	0.563
Northbound	RT	0.00	43	0	0.000	Lost Time:	0.100
	TH	2.00	1,274	3,200	0.412	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.663
	TH	1.00	16	1,600	0.024		
	LT	1.00	11	1,600	0.007 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **25 Catalina Ave & Torrance Blvd**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	43	1,600	0.022	N-S(1):	0.266 *
	TH	2.00	252	3,200	0.079	N-S(2):	0.087
	LT	1.00	116	1,600	0.073 *	E-W(1):	0.058 *
Westbound	RT	1.00	162	1,600	0.029	E-W(2):	0.038
	TH	2.00	55	3,200	0.017		
	LT	1.00	78	1,600	0.049 *	V/C:	0.324
Northbound	RT	1.00	156	1,600	0.073	Lost Time:	0.100
	TH	2.00	619	3,200	0.193 *	ITS:	0.000
	LT	1.00	12	1,600	0.008		
Eastbound	RT	1.00	9	1,600	0.002	ICU:	0.424
	TH	2.00	28	3,200	0.009 *		
	LT	1.00	15	1,600	0.009	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	67	1,600	0.033	N-S(1):	0.277 *
	TH	2.00	719	3,200	0.225	N-S(2):	0.244
	LT	1.00	214	1,600	0.134 *	E-W(1):	0.098 *
Westbound	RT	1.00	222	1,600	0.005	E-W(2):	0.058
	TH	2.00	127	3,200	0.040		
	LT	1.00	99	1,600	0.062 *	V/C:	0.375
Northbound	RT	1.00	98	1,600	0.030	Lost Time:	0.100
	TH	2.00	458	3,200	0.143 *	ITS:	0.000
	LT	1.00	31	1,600	0.019		
Eastbound	RT	1.00	24	1,600	0.005	ICU:	0.475
	TH	2.00	115	3,200	0.036 *		
	LT	1.00	29	1,600	0.018	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **26 Pacific Coast Hwy & Torrance Blvd**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.541 *
	TH	2.00	858	3,200	0.275	N-S(2):	0.302
	LT	1.00	228	1,600	0.143 *	E-W(1):	0.177 *
Westbound	RT	1.00	227	1,600	0.071	E-W(2):	0.133
	TH	2.00	332	3,200	0.104		
	LT	1.00	122	1,600	0.076 *	V/C:	0.718
Northbound	RT	0.00	66	0	0.000	Lost Time:	0.100
	TH	2.00	1,207	3,200	0.398 *	ITS:	0.000
	LT	1.00	43	1,600	0.027		
Eastbound	RT	0.00	37	0	0.000	ICU:	0.818
	TH	2.00	287	3,200	0.101 *		
	LT	1.00	46	1,600	0.029	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	39	0	0.000	N-S(1):	0.515 *
	TH	2.00	1,410	3,200	0.453	N-S(2):	0.491
	LT	1.00	309	1,600	0.193 *	E-W(1):	0.233 *
Westbound	RT	1.00	301	1,600	0.092	E-W(2):	0.177
	TH	2.00	424	3,200	0.133		
	LT	1.00	156	1,600	0.098 *	V/C:	0.748
Northbound	RT	0.00	89	0	0.000	Lost Time:	0.100
	TH	2.00	942	3,200	0.322 *	ITS:	0.000
	LT	1.00	61	1,600	0.038		
Eastbound	RT	0.00	67	0	0.000	ICU:	0.848
	TH	2.00	366	3,200	0.135 *		
	LT	1.00	71	1,600	0.044	LOS:	D

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **27 Helberta Ave/Camino Real & Torrance Blvd**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	16	0	0.000	N-S(1):	0.153 *
	TH	1.00	63	1,600	0.063 *	N-S(2):	0.000
	LT	0.00	21	1,600	0.013	E-W(1):	0.223 *
Westbound	RT	0.00	25	0	0.000	E-W(2):	0.196
	TH	2.00	560	3,200	0.183		
	LT	1.00	29	1,600	0.018 *	V/C:	0.376
Northbound	RT	0.00	37	0	0.000	Lost Time:	0.100
	TH	0.61	42	972	0.081	ITS:	0.000
	LT	1.39	181	2,005	0.090 *		
Eastbound	RT	0.00	111	0	0.000	ICU:	0.476
	TH	2.00	546	3,200	0.205 *		
	LT	1.00	20	1,600	0.013	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	11	0	0.000	N-S(1):	0.131 *
	TH	1.00	28	1,600	0.036 *	N-S(2):	0.000
	LT	0.00	19	1,600	0.012	E-W(1):	0.287 *
Westbound	RT	0.00	16	0	0.000	E-W(2):	0.217
	TH	2.00	655	3,200	0.210		
	LT	1.00	45	1,600	0.028 *	V/C:	0.418
Northbound	RT	0.00	28	0	0.000	Lost Time:	0.100
	TH	0.42	30	675	0.086	ITS:	0.000
	LT	1.58	217	2,273	0.095 *		
Eastbound	RT	0.00	158	0	0.000	ICU:	0.518
	TH	2.00	672	3,200	0.259 *		
	LT	1.00	11	1,600	0.007	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **28 Prospect Ave & Torrance Blvd**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	65	0	0.000	N-S(1):	0.421 *
	TH	2.00	586	3,200	0.203	N-S(2):	0.237
	LT	1.00	198	1,600	0.124 *	E-W(1):	0.270
Westbound	RT	0.00	168	0	0.000	E-W(2):	0.298 *
	TH	2.00	574	3,200	0.232 *		
	LT	1.00	154	1,600	0.096	V/C:	0.719
Northbound	RT	0.00	241	0	0.000	Lost Time:	0.100
	TH	2.00	708	3,200	0.297 *	ITS:	0.000
	LT	1.00	54	1,600	0.034		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.819
	TH	2.00	535	3,200	0.174		
	LT	1.00	106	1,600	0.066 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	132	0	0.000	N-S(1):	0.325 *
	TH	2.00	742	3,200	0.273	N-S(2):	0.301
	LT	1.00	207	1,600	0.129 *	E-W(1):	0.309
Westbound	RT	0.00	168	0	0.000	E-W(2):	0.317 *
	TH	2.00	660	3,200	0.259 *		
	LT	1.00	170	1,600	0.106	V/C:	0.642
Northbound	RT	0.00	112	0	0.000	Lost Time:	0.100
	TH	2.00	516	3,200	0.196 *	ITS:	0.000
	LT	1.00	45	1,600	0.028		
Eastbound	RT	0.00	43	0	0.000	ICU:	0.742
	TH	2.00	606	3,200	0.203		
	LT	1.00	92	1,600	0.058 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **29 Catalina Ave & Pearl St**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	139	1,600	0.048	N-S(1):	0.194 *
	TH	2.00	189	3,200	0.061	N-S(2):	0.065
	LT	0.00	5	1,600	0.003 *	E-W(1):	0.092 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	12	1,600	0.015 *		
	LT	0.00	0	0	0.000	V/C:	0.286
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	596	3,200	0.191 *	ITS:	0.000
	LT	0.00	7	1,600	0.004		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.386
	TH	0.15	12	244	0.070		
	LT	1.85	206	2,660	0.077 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	274	1,600	0.131	N-S(1):	0.137
	TH	2.00	528	3,200	0.174 *	N-S(2):	0.176 *
	LT	0.00	30	1,600	0.019	E-W(1):	0.097 *
Westbound	RT	0.00	13	0	0.000	E-W(2):	0.000
	TH	1.00	9	1,600	0.016 *		
	LT	0.00	4	1,600	0.003	V/C:	0.273
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	366	3,200	0.118	ITS:	0.000
	LT	0.00	3	1,600	0.002 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.373
	TH	0.11	10	179	0.073		
	LT	1.89	220	2,719	0.081 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **31 Pacific Coast Hwy & Sapphire St/Francisca Ave**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	5	0	0.000	N-S(1):	0.466 *
	TH	2.00	882	3,200	0.277	N-S(2):	0.289
	LT	1.00	26	1,600	0.016 *	E-W(1):	0.045 *
Westbound	RT	0.00	19	0	0.000	E-W(2):	0.030
	TH	1.00	10	1,600	0.021		
	LT	0.00	5	1,600	0.003 *	V/C:	0.511
Northbound	RT	0.00	37	0	0.000	Lost Time:	0.100
	TH	2.00	1,403	3,200	0.450 *	ITS:	0.000
	LT	1.00	19	1,600	0.012		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.611
	TH	1.00	36	1,600	0.042 *		
	LT	0.00	15	1,600	0.009	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	7	0	0.000	N-S(1):	0.357
	TH	2.00	1,473	3,200	0.463 *	N-S(2):	0.477 *
	LT	1.00	34	1,600	0.021	E-W(1):	0.073 *
Westbound	RT	0.00	21	0	0.000	E-W(2):	0.047
	TH	1.00	11	1,600	0.023		
	LT	0.00	5	1,600	0.003 *	V/C:	0.550
Northbound	RT	0.00	27	0	0.000	Lost Time:	0.100
	TH	2.00	1,048	3,200	0.336	ITS:	0.000
	LT	1.00	22	1,600	0.014 *		
Eastbound	RT	0.00	36	0	0.000	ICU:	0.650
	TH	1.00	37	1,600	0.070 *		
	LT	0.00	39	1,600	0.024	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **34 Pacific Coast Hwy & Knob Hill Ave**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	32	0	0.000	N-S(1):	0.453 *
	TH	2.00	837	3,200	0.272	N-S(2):	0.288
	LT	1.00	51	1,600	0.032 *	E-W(1):	0.084
Westbound	RT	0.00	58	0	0.000	E-W(2):	0.102 *
	TH	1.00	51	1,600	0.068 *		
	LT	1.00	54	1,600	0.034	V/C:	0.555
Northbound	RT	0.00	35	0	0.000	Lost Time:	0.100
	TH	2.00	1,311	3,200	0.421 *	ITS:	0.000
	LT	1.00	25	1,600	0.016		
Eastbound	RT	1.00	30	1,600	0.011	ICU:	0.655
	TH	1.00	80	1,600	0.050		
	LT	1.00	55	1,600	0.034 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	29	0	0.000	N-S(1):	0.386
	TH	2.00	1,316	3,200	0.420 *	N-S(2):	0.453 *
	LT	1.00	62	1,600	0.039	E-W(1):	0.109
Westbound	RT	0.00	58	0	0.000	E-W(2):	0.145 *
	TH	1.00	127	1,600	0.116 *		
	LT	1.00	83	1,600	0.052	V/C:	0.598
Northbound	RT	0.00	70	0	0.000	Lost Time:	0.100
	TH	2.00	1,040	3,200	0.347	ITS:	0.000
	LT	1.00	52	1,600	0.033 *		
Eastbound	RT	1.00	65	1,600	0.024	ICU:	0.698
	TH	1.00	91	1,600	0.057		
	LT	1.00	47	1,600	0.029 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **36 Pacific Coast Hwy & Palos Verdes Blvd**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	257	0	0.000	N-S(1):	0.302
	TH	2.00	537	3,200	0.248 *	N-S(2):	0.348 *
	LT	1.00	62	1,600	0.039	E-W(1):	0.252
Westbound	RT	0.00	98	0	0.000	E-W(2):	0.402 *
	TH	2.00	372	3,200	0.147 *		
	LT	1.00	58	1,600	0.036	V/C:	0.750
Northbound	RT	1.00	79	1,600	0.031	Lost Time:	0.100
	TH	2.00	843	3,200	0.263	ITS:	0.000
	LT	1.00	160	1,600	0.100 *		
Eastbound	RT	0.00	157	0	0.000	ICU:	0.850
	TH	2.00	534	3,200	0.216		
	LT	1.00	408	1,600	0.255 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	348	0	0.000	N-S(1):	0.327
	TH	2.00	932	3,200	0.400 *	N-S(2):	0.539 *
	LT	1.00	85	1,600	0.053	E-W(1):	0.237
Westbound	RT	0.00	135	0	0.000	E-W(2):	0.318 *
	TH	2.00	464	3,200	0.187 *		
	LT	1.00	89	1,600	0.056	V/C:	0.857
Northbound	RT	1.00	76	1,600	0.020	Lost Time:	0.100
	TH	2.00	876	3,200	0.274	ITS:	0.000
	LT	1.00	223	1,600	0.139 *		
Eastbound	RT	0.00	188	0	0.000	ICU:	0.957
	TH	2.00	390	3,200	0.181		
	LT	1.00	209	1,600	0.131 *	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **37 Pacific Coast Hwy & 2nd St**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	34	0	0.000	N-S(1):	0.491 *
	TH	3.00	1,057	4,800	0.227	N-S(2):	0.233
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.104 *
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.000
	TH	1.00	2	1,600	0.021 *		
	LT	0.00	11	1,600	0.007	V/C:	0.595
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	3.00	2,356	4,800	0.491 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.32	42	509	0.079	ICU:	0.695
	TH	0.00	0	0	0.000		
	LT	0.68	90	1,091	0.083 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	71	0	0.000	N-S(1):	0.317
	TH	3.00	2,174	4,800	0.468 *	N-S(2):	0.494 *
	LT	1.00	1	1,600	0.001	E-W(1):	0.102 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	4	1,600	0.019 *		
	LT	0.00	14	1,600	0.009	V/C:	0.596
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,512	4,800	0.316	ITS:	0.000
	LT	1.00	41	1,600	0.026 *		
Eastbound	RT	0.32	42	509	0.070	ICU:	0.696
	TH	0.00	0	0	0.000		
	LT	0.68	90	1,091	0.083 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **38 Pacific Coast Hwy & 10th/Aviation**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.498 *
	TH	3.00	656	4,800	0.137	N-S(2):	0.143
	LT	1.00	139	1,600	0.087 *	E-W(1):	0.179 *
Westbound	RT	1.00	155	1,600	0.010	E-W(2):	0.161
	TH	0.01	3	19	0.161		
	LT	1.99	511	2,863	0.178 *	V/C:	0.677
Northbound	RT	1.00	661	1,600	0.324	Lost Time:	0.100
	TH	3.00	1,972	4,800	0.411 *	ITS:	0.000
	LT	1.00	9	1,600	0.006		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.777
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.373
	TH	3.00	1,812	4,800	0.378 *	N-S(2):	0.386 *
	LT	1.00	222	1,600	0.139	E-W(1):	0.257 *
Westbound	RT	1.00	218	1,600	0.000	E-W(2):	0.231
	TH	0.03	10	43	0.231		
	LT	1.97	728	2,841	0.256 *	V/C:	0.643
Northbound	RT	1.00	518	1,600	0.196	Lost Time:	0.100
	TH	3.00	1,123	4,800	0.234	ITS:	0.000
	LT	1.00	13	1,600	0.008 *		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.743
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **39 Pacific Coast Hwy & Pier/14th St**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	62	0	0.000	N-S(1):	0.380 *
	TH	3.00	643	4,800	0.147	N-S(2):	0.211
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.085 *
Westbound	RT	1.00	6	1,600	0.004 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	V/C:	0.465
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,822	4,800	0.380 *	ITS:	0.000
	LT	2.00	183	2,880	0.064		
Eastbound	RT	1.00	168	1,600	0.041	ICU:	0.565
	TH	0.00	0	0	0.000		
	LT	2.00	232	2,880	0.081 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	147	0	0.000	N-S(1):	0.227
	TH	3.00	1,804	4,800	0.406 *	N-S(2):	0.517 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.086 *
Westbound	RT	1.00	12	1,600	0.006 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001	V/C:	0.603
Northbound	RT	0.00	6	0	0.000	Lost Time:	0.100
	TH	3.00	1,064	4,800	0.223	ITS:	0.000
	LT	2.00	320	2,880	0.111 *		
Eastbound	RT	1.00	245	1,600	0.042	ICU:	0.703
	TH	0.00	0	0	0.000		
	LT	2.00	230	2,880	0.080 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **40 Pacific Coast Hwy & 16th St**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	146	1,600	0.068	N-S(1):	0.347 *
	TH	3.00	869	4,800	0.181	N-S(2):	0.230
	LT	1.00	15	1,600	0.009 *	E-W(1):	0.079 *
Westbound	RT	0.48	24	768	0.027	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.52	26	832	0.031 *	V/C:	0.426
Northbound	RT	0.00	47	0	0.000	Lost Time:	0.100
	TH	3.00	1,576	4,800	0.338 *	ITS:	0.000
	LT	1.00	79	1,600	0.049		
Eastbound	RT	1.00	62	1,600	0.014	ICU:	0.526
	TH	0.00	0	0	0.000		
	LT	1.00	76	1,600	0.048 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	203	1,600	0.092	N-S(1):	0.243
	TH	3.00	1,876	4,800	0.391 *	N-S(2):	0.455 *
	LT	1.00	3	1,600	0.002	E-W(1):	0.081 *
Westbound	RT	0.16	3	253	0.011	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.84	16	1,347	0.012 *	V/C:	0.536
Northbound	RT	0.00	24	0	0.000	Lost Time:	0.100
	TH	3.00	1,134	4,800	0.241	ITS:	0.000
	LT	1.00	102	1,600	0.064 *		
Eastbound	RT	1.00	85	1,600	0.021	ICU:	0.636
	TH	0.00	0	0	0.000		
	LT	1.00	111	1,600	0.069 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **41 Pacific Coast Hwy & Prospect Ave**
Description: **Existing**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	67	1,600	0.020	N-S(1):	0.184 *
	TH	1.00	6	1,600	0.152 *	N-S(2):	0.000
	LT	0.00	237	1,600	0.148	E-W(1):	0.233
Westbound	RT	0.00	212	0	0.000	E-W(2):	0.420 *
	TH	2.00	995	3,200	0.377 *		
	LT	1.00	4	1,600	0.003	V/C:	0.604
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	1.00	34	1,600	0.032 *	ITS:	0.000
	LT	0.00	8	1,600	0.005		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.704
	TH	2.00	735	3,200	0.230		
	LT	1.00	69	1,600	0.043 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	88	1,600	0.038	N-S(1):	0.207 *
	TH	1.00	15	1,600	0.178 *	N-S(2):	0.000
	LT	0.00	269	1,600	0.168	E-W(1):	0.337
Westbound	RT	0.00	215	0	0.000	E-W(2):	0.468 *
	TH	2.00	1,175	3,200	0.434 *		
	LT	1.00	13	1,600	0.008	V/C:	0.675
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	1.00	21	1,600	0.029 *	ITS:	0.000
	LT	0.00	5	1,600	0.003		
Eastbound	RT	0.00	8	0	0.000	ICU:	0.775
	TH	2.00	1,045	3,200	0.329		
	LT	1.00	54	1,600	0.034 *	LOS:	C

* - Denotes critical movement

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	6	12	5	0	25	8	26	0	51	482	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	13	5	0	27	9	28	0	55	524	82
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.2	9.4	12
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	17%	0%	26%	42%	44%	0%
Vol Thru, %	83%	76%	52%	14%	56%	98%
Vol Right, %	0%	24%	22%	44%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	292	316	23	59	161	92
LT Vol	241	241	12	8	90	90
Through Vol	0	75	5	26	0	2
RT Vol	51	0	6	25	71	0
Lane Flow Rate	317	343	25	64	175	100
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.453	0.466	0.041	0.101	0.274	0.15
Departure Headway (Hd)	5.138	4.883	5.849	5.663	5.642	5.404
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	698	735	607	628	634	660
Service Time	2.886	2.631	3.935	3.737	3.406	3.168
HCM Lane V/C Ratio	0.454	0.467	0.041	0.102	0.276	0.152
HCM Control Delay	12.1	11.9	9.2	9.4	10.5	9.1
HCM Lane LOS	B	B	A	A	B	A
HCM 95th-tile Q	2.4	2.5	0.1	0.3	1.1	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	71	180	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	77	196	2
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	21	104	21	0	12	34	12	0	12	48	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	23	113	23	0	13	37	13	0	13	52	67
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.6	8	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	14%	21%	38%
Vol Thru, %	39%	71%	59%	48%
Vol Right, %	51%	14%	21%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	122	146	58	94
LT Vol	48	104	34	45
Through Vol	62	21	12	13
RT Vol	12	21	12	36
Lane Flow Rate	133	159	63	102
Geometry Grp	1	1	1	1
Degree of Util (X)	0.158	0.198	0.08	0.13
Departure Headway (Hd)	4.283	4.481	4.566	4.589
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	838	801	784	782
Service Time	2.307	2.505	2.595	2.615
HCM Lane V/C Ratio	0.159	0.199	0.08	0.13
HCM Control Delay	8.1	8.6	8	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.7	0.3	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	36	45	13
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	39	49	14
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.3
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	82	121	62	0	15	48	25	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	89	132	67	0	16	52	27	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9.8	8.2
HCM LOS	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	17%	10%
Vol Thru, %	46%	55%	75%
Vol Right, %	23%	28%	15%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	265	88	164
LT Vol	121	48	123
Through Vol	62	25	24
RT Vol	82	15	17
Lane Flow Rate	288	96	178
Geometry Grp	1	1	1
Degree of Util (X)	0.352	0.121	0.234
Departure Headway (Hd)	4.404	4.553	4.727
Convergence, Y/N	Yes	Yes	Yes
Cap	818	786	759
Service Time	2.43	2.586	2.761
HCM Lane V/C Ratio	0.352	0.122	0.235
HCM Control Delay	9.8	8.2	9.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.6	0.4	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	17	123	24
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	18	134	26
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.2
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	22	160	382	54	68	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	174	415	59	74	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	474	0	-	0	667	445
Stage 1	-	-	-	-	445	-
Stage 2	-	-	-	-	222	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1088	-	-	-	424	613
Stage 1	-	-	-	-	646	-
Stage 2	-	-	-	-	815	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1088	-	-	-	415	613
Mov Cap-2 Maneuver	-	-	-	-	415	-
Stage 1	-	-	-	-	646	-
Stage 2	-	-	-	-	797	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1088	-	-	-	441
HCM Lane V/C Ratio	0.022	-	-	-	0.205
HCM Control Delay (s)	8.4	-	-	-	15.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

Intersection	
Intersection Delay, s/veh	16
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	190	45	0	47	251	0	0	163	0	59
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	207	49	0	51	273	0	0	177	0	64
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	14.8	17.7	18.6
HCM LOS	B	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	73%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	27%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	222	190	45	47	251	137	76	22
LT Vol	0	190	0	0	251	0	76	0
Through Vol	59	0	45	0	0	0	0	22
RT Vol	163	0	0	47	0	137	0	0
Lane Flow Rate	241	207	49	51	273	149	83	24
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.518	0.432	0.093	0.111	0.554	0.317	0.164	0.043
Departure Headway (Hd)	7.729	7.53	6.814	7.822	7.312	7.662	7.151	6.435
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	466	477	525	458	494	469	501	555
Service Time	5.487	5.287	4.571	5.578	5.067	5.419	4.907	4.191
HCM Lane V/C Ratio	0.517	0.434	0.093	0.111	0.553	0.318	0.166	0.043
HCM Control Delay	18.6	15.9	10.3	11.6	18.8	14	11.3	9.5
HCM Lane LOS	C	C	B	B	C	B	B	A
HCM 95th-tile Q	2.9	2.1	0.3	0.4	3.3	1.3	0.6	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	137	76	22
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	149	83	24
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12.7
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	2	0	1	5	3	35	23	714	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	1	5	3	38	25	776	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	841	1230	188	1041	1243	390	376	0	0
Stage 1	401	401	-	828	828	-	-	-	-
Stage 2	440	829	-	213	415	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	258	176	822	184	173	609	1179	-	-
Stage 1	597	599	-	332	384	-	-	-	-
Stage 2	566	383	-	769	591	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	230	168	822	177	165	609	1179	-	-
Mov Cap-2 Maneuver	230	168	-	177	165	-	-	-	-
Stage 1	584	585	-	325	376	-	-	-	-
Stage 2	515	375	-	750	577	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	17	14.8	0.3
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1179	-	-	303	414	834	-	-
HCM Lane V/C Ratio	0.021	-	-	0.011	0.113	0.023	-	-
HCM Control Delay (s)	8.1	-	-	17	14.8	9.4	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0.4	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	18	320	26
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	20	348	28

Major/Minor	Major2		
Conflicting Flow All	779	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	834	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	834	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.5
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	0	1	1	1	108	1	617	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	1	1	1	117	1	671	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	704	1040	152	888	1039	336	303	0	0
Stage 1	366	366	-	673	673	-	-	-	-
Stage 2	338	674	-	215	366	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	324	229	867	238	229	660	1255	-	-
Stage 1	626	621	-	411	452	-	-	-	-
Stage 2	650	452	-	767	621	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	258	221	867	231	221	660	1255	-	-
Mov Cap-2 Maneuver	258	221	-	231	221	-	-	-	-
Stage 1	625	599	-	411	452	-	-	-	-
Stage 2	533	452	-	739	599	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	18.1	11.9	0
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1255	-	-	283	638	915	-	-
HCM Lane V/C Ratio	0.001	-	-	0.031	0.187	0.034	-	-
HCM Control Delay (s)	7.9	0	-	18.1	11.9	9.1	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	29	279	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	32	303	0

Major/Minor	Major2		
Conflicting Flow All	672	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	915	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	915	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.9
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	76	6	15	105	11	22	102	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	83	7	16	114	12	24	111	50

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	126	0	0	89	0	0	257	247	86
Stage 1	-	-	-	-	-	-	88	88	-
Stage 2	-	-	-	-	-	-	169	159	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1460	-	-	1506	-	-	696	655	973
Stage 1	-	-	-	-	-	-	920	822	-
Stage 2	-	-	-	-	-	-	833	766	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1460	-	-	1506	-	-	664	648	973
Mov Cap-2 Maneuver	-	-	-	-	-	-	664	648	-
Stage 1	-	-	-	-	-	-	919	821	-
Stage 2	-	-	-	-	-	-	789	758	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.8	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	715	1460	-	-	1506	-	-	653
HCM Lane V/C Ratio	0.258	0.001	-	-	0.011	-	-	0.053
HCM Control Delay (s)	11.8	7.5	-	-	7.4	-	-	10.8
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1	0	-	-	0	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	2	28	2
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	2	30	2

Major/Minor	Minor2		
Conflicting Flow All	321	244	120
Stage 1	153	153	-
Stage 2	168	91	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	632	658	931
Stage 1	849	771	-
Stage 2	834	820	-
Platoon blocked, %			
Mov Cap-1 Maneuver	516	651	931
Mov Cap-2 Maneuver	516	651	-
Stage 1	848	763	-
Stage 2	684	819	-

Approach	SB
HCM Control Delay, s	10.8
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	116	18	52	126	17	9	13	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	126	20	57	137	18	10	14	58

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	155	0	0	146	0	0	421	419	136
Stage 1	-	-	-	-	-	-	151	151	-
Stage 2	-	-	-	-	-	-	270	268	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1425	-	-	1436	-	-	543	525	913
Stage 1	-	-	-	-	-	-	851	772	-
Stage 2	-	-	-	-	-	-	736	687	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1425	-	-	1436	-	-	509	501	913
Mov Cap-2 Maneuver	-	-	-	-	-	-	509	501	-
Stage 1	-	-	-	-	-	-	846	768	-
Stage 2	-	-	-	-	-	-	687	660	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	2	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	738	1425	-	-	1436	-	-	532
HCM Lane V/C Ratio	0.11	0.005	-	-	0.039	-	-	0.061
HCM Control Delay (s)	10.5	7.5	-	-	7.6	-	-	12.2
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	11	13	6
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	12	14	7

Major/Minor	Minor2		
Conflicting Flow All	446	420	146
Stage 1	259	259	-
Stage 2	187	161	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	523	525	901
Stage 1	746	694	-
Stage 2	815	765	-
Platoon blocked, %			
Mov Cap-1 Maneuver	463	501	901
Mov Cap-2 Maneuver	463	501	-
Stage 1	742	666	-
Stage 2	745	761	-

Approach	SB
HCM Control Delay, s	12.2
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	59	1	2	0	0	4	1	0	3	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	64	1	2	0	0	4	1	0	3	2	0
Number of Lanes	0	1	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	8.2	7.8	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	60%	100%	90%	0%	60%	0%
Vol Thru, %	40%	0%	3%	80%	40%	0%
Vol Right, %	0%	0%	6%	20%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	31	31	5	5	122
LT Vol	2	0	1	4	2	0
Through Vol	0	0	2	1	0	122
RT Vol	3	31	28	0	3	0
Lane Flow Rate	5	33	34	5	5	133
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.008	0.049	0.049	0.007	0.007	0.146
Departure Headway (Hd)	4.987	5.285	5.193	4.715	4.962	3.961
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	722	673	685	748	714	894
Service Time	2.987	3.05	2.957	2.812	2.74	1.739
HCM Lane V/C Ratio	0.007	0.049	0.05	0.007	0.007	0.149
HCM Control Delay	8	8.3	8.2	7.8	7.8	7.4
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0	0.2	0.2	0	0	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	2	122
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	2	133
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	7.4
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	14	16	47	0	4	14	24	0	29	259	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	17	51	0	4	15	26	0	32	282	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.5	8.3	9.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	18%	0%	18%	10%	4%	0%
Vol Thru, %	82%	97%	21%	33%	96%	93%
Vol Right, %	0%	3%	61%	57%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	159	134	77	42	90	92
LT Vol	130	130	16	14	86	86
Through Vol	0	4	47	24	0	6
RT Vol	29	0	14	4	4	0
Lane Flow Rate	172	145	84	46	98	100
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.245	0.202	0.112	0.062	0.14	0.142
Departure Headway (Hd)	5.122	5.009	4.833	4.895	5.168	5.1
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	701	715	740	729	693	702
Service Time	2.859	2.746	2.875	2.943	2.909	2.84
HCM Lane V/C Ratio	0.245	0.203	0.114	0.063	0.141	0.142
HCM Control Delay	9.5	9	8.5	8.3	8.8	8.7
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	1	0.8	0.4	0.2	0.5	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	4	172	6
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	187	7
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.7
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	76	18	0	127	84	0	21	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	83	20	0	138	91	0	23	107
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.1	9.4	8.6
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	60%	0%	0%	0%	100%
Vol Right, %	40%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	211	76	18	21	98
LT Vol	127	0	0	0	98
Through Vol	84	0	18	0	0
RT Vol	0	76	0	21	0
Lane Flow Rate	229	83	20	23	107
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.289	0.135	0.025	0.035	0.148
Departure Headway (Hd)	4.543	5.881	4.674	5.513	5.01
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	794	610	766	651	717
Service Time	2.562	3.611	2.404	3.235	2.732
HCM Lane V/C Ratio	0.288	0.136	0.026	0.035	0.149
HCM Control Delay	9.4	9.5	7.5	8.4	8.6
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	1.2	0.5	0.1	0.1	0.5

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	44	65	6	0	33	71	29	0	7	398	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	48	71	7	0	36	77	32	0	8	433	55
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	10.5	10.6	12
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	3%	0%	100%	0%	100%	0%	23%	0%
Vol Thru, %	97%	80%	0%	92%	0%	71%	77%	75%
Vol Right, %	0%	20%	0%	8%	0%	29%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	206	250	44	71	33	100	103	106
LT Vol	199	199	0	65	0	71	79	79
Through Vol	0	51	0	6	0	29	0	27
RT Vol	7	0	44	0	33	0	24	0
Lane Flow Rate	224	272	48	77	36	109	112	115
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.357	0.421	0.095	0.141	0.071	0.194	0.192	0.188
Departure Headway (Hd)	5.745	5.584	7.157	6.588	7.124	6.409	6.18	5.881
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	627	644	500	544	503	560	580	610
Service Time	3.48	3.319	4.904	4.335	4.868	4.153	3.922	3.623
HCM Lane V/C Ratio	0.357	0.422	0.096	0.142	0.072	0.195	0.193	0.189
HCM Control Delay	11.7	12.3	10.7	10.4	10.4	10.7	10.4	10
HCM Lane LOS	B	B	B	B	B	B	B	A
HCM 95th-tile Q	1.6	2.1	0.3	0.5	0.2	0.7	0.7	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	24	158	27
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	26	172	29
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.2
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	129	62	0
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	140	67	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	207	34	67	0	-	0
Stage 1	67	-	-	-	-	-
Stage 2	140	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.14	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.22	-	-	-
Pot Cap-1 Maneuver	772	1032	1533	-	-	-
Stage 1	948	-	-	-	-	-
Stage 2	886	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	772	1032	1533	-	-	-
Mov Cap-2 Maneuver	772	-	-	-	-	-
Stage 1	948	-	-	-	-	-
Stage 2	886	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1533	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	7	8	6	0	35	10	35	0	26	286	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	9	7	0	38	11	38	0	28	311	34
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.2	9.6	10.1
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	15%	0%	33%	44%	11%	0%
Vol Thru, %	85%	82%	38%	12%	89%	97%
Vol Right, %	0%	18%	29%	44%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	174	21	80	243	224
LT Vol	143	143	8	10	217	217
Through Vol	0	31	6	35	0	7
RT Vol	26	0	7	35	26	0
Lane Flow Rate	184	189	23	87	264	243
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.276	0.274	0.038	0.136	0.385	0.35
Departure Headway (Hd)	5.413	5.21	5.925	5.612	5.251	5.176
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	659	685	608	633	681	691
Service Time	3.186	2.982	3.925	3.697	3.019	2.943
HCM Lane V/C Ratio	0.279	0.276	0.038	0.137	0.388	0.352
HCM Control Delay	10.3	10	9.2	9.6	11.3	10.7
HCM Lane LOS	B	A	A	A	B	B
HCM 95th-tile Q	1.1	1.1	0.1	0.5	1.8	1.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	26	434	7
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	28	472	8
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	11
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	3	81	2	0	29	84	44	0	11	144	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	88	2	0	32	91	48	0	12	157	105
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.1	9.5	10.1
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	3%	18%	40%
Vol Thru, %	57%	94%	54%	57%
Vol Right, %	38%	2%	28%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	252	86	157	145
LT Vol	144	81	84	82
Through Vol	97	2	44	5
RT Vol	11	3	29	58
Lane Flow Rate	274	93	171	158
Geometry Grp	1	1	1	1
Degree of Util (X)	0.348	0.134	0.234	0.218
Departure Headway (Hd)	4.572	5.171	4.939	4.979
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	781	686	720	716
Service Time	2.633	3.254	3.013	3.05
HCM Lane V/C Ratio	0.351	0.136	0.237	0.221
HCM Control Delay	10.1	9.1	9.5	9.5
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.6	0.5	0.9	0.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	58	82	5
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	63	89	5
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.5
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	19.3
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	70	100	54	0	36	121	91	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	76	109	59	0	39	132	99	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	12.7	13
HCM LOS	B	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	15%	9%
Vol Thru, %	45%	49%	80%
Vol Right, %	24%	37%	11%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	224	248	491
LT Vol	100	121	391
Through Vol	54	91	54
RT Vol	70	36	46
Lane Flow Rate	243	270	534
Geometry Grp	1	1	1
Degree of Util (X)	0.395	0.427	0.79
Departure Headway (Hd)	5.845	5.698	5.331
Convergence, Y/N	Yes	Yes	Yes
Cap	614	628	678
Service Time	3.908	3.76	3.377
HCM Lane V/C Ratio	0.396	0.43	0.788
HCM Control Delay	12.7	13	25.5
HCM Lane LOS	B	B	D
HCM 95th-tile Q	1.9	2.1	7.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	46	391	54
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	50	425	59
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	25.5
HCM LOS	D

Lane

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	21	245	337	283	78	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	266	366	308	85	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	674	0	-	0	832	520
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	312	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	917	-	-	-	339	556
Stage 1	-	-	-	-	597	-
Stage 2	-	-	-	-	742	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	917	-	-	-	330	556
Mov Cap-2 Maneuver	-	-	-	-	330	-
Stage 1	-	-	-	-	597	-
Stage 2	-	-	-	-	723	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	19.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	917	-	-	-	350
HCM Lane V/C Ratio	0.025	-	-	-	0.283
HCM Control Delay (s)	9	-	-	-	19.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.1

Intersection	
Intersection Delay, s/veh	41.7
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	252	69	0	34	390	0	0	207	0	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	274	75	0	37	424	0	0	225	0	47
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	29.8	72.2	37.4
HCM LOS	D	F	E

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	83%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	17%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	250	252	69	34	390	138	258	44
LT Vol	0	252	0	0	390	0	258	0
Through Vol	43	0	69	0	0	0	0	44
RT Vol	207	0	0	34	0	138	0	0
Lane Flow Rate	272	274	75	37	424	150	280	48
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.75	0.728	0.185	0.102	1	0.386	0.682	0.107
Departure Headway (Hd)	9.938	9.565	8.863	9.953	9.432	9.261	8.761	8.061
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	364	378	404	362	390	389	412	444
Service Time	7.717	7.33	6.628	7.653	7.132	7.015	6.515	5.815
HCM Lane V/C Ratio	0.747	0.725	0.186	0.102	1.087	0.386	0.68	0.108
HCM Control Delay	37.4	34.2	13.6	13.8	77.3	17.8	28.4	11.8
HCM Lane LOS	E	D	B	B	F	C	D	B
HCM 95th-tile Q	5.9	5.6	0.7	0.3	12	1.8	4.9	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	138	258	44
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	150	280	48
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	23.4
HCM LOS	C

Lane

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	10	0	2	0	3	60	19	396	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	2	0	3	65	21	430	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1268	1483	455	1027	1495	216	910	0	0
Stage 1	1010	1010	-	472	472	-	-	-	-
Stage 2	258	473	-	555	1023	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	125	124	552	189	122	789	744	-	-
Stage 1	257	316	-	542	557	-	-	-	-
Stage 2	724	557	-	484	311	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	106	114	552	177	113	789	744	-	-
Mov Cap-2 Maneuver	106	114	-	177	113	-	-	-	-
Stage 1	250	300	-	527	541	-	-	-	-
Stage 2	642	541	-	458	295	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	38	11.6	0.5
HCM LOS	E	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	744	-	-	122	614	1124	-	-
HCM Lane V/C Ratio	0.028	-	-	0.107	0.112	0.05	-	-
HCM Control Delay (s)	10	-	-	38	11.6	8.4	-	-
HCM Lane LOS	A	-	-	E	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.4	0.2	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	52	814	23
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	57	885	25

Major/Minor	Major2		
Conflicting Flow All	432	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1124	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1124	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.5
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	6	0	3	0	0	42	1	375	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	3	0	0	46	1	408	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1115	1322	411	909	1320	205	822	0	0
Stage 1	909	909	-	411	411	-	-	-	-
Stage 2	206	413	-	498	909	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	163	155	590	230	156	802	803	-	-
Stage 1	296	352	-	589	593	-	-	-	-
Stage 2	777	592	-	523	352	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	149	149	590	222	150	802	803	-	-
Mov Cap-2 Maneuver	149	149	-	222	150	-	-	-	-
Stage 1	295	339	-	588	592	-	-	-	-
Stage 2	731	591	-	501	339	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	24.1	9.8	0
HCM LOS	C	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	803	-	-	198	802	1144	-	-
HCM Lane V/C Ratio	0.001	-	-	0.049	0.057	0.038	-	-
HCM Control Delay (s)	9.5	0	-	24.1	9.8	8.3	-	-
HCM Lane LOS	A	A	-	C	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	40	756	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	43	822	0

Major/Minor	Major2		
Conflicting Flow All	411	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1144	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1144	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	5	197	13	37	206	7	23	5	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	214	14	40	224	8	25	5	59

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	232	0	0	228	0	0	546	544	221
Stage 1	-	-	-	-	-	-	232	232	-
Stage 2	-	-	-	-	-	-	314	312	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1336	-	-	1340	-	-	448	446	819
Stage 1	-	-	-	-	-	-	771	713	-
Stage 2	-	-	-	-	-	-	697	658	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1336	-	-	1340	-	-	429	431	819
Mov Cap-2 Maneuver	-	-	-	-	-	-	429	431	-
Stage 1	-	-	-	-	-	-	768	710	-
Stage 2	-	-	-	-	-	-	665	638	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	1.1	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	625	1336	-	-	1340	-	-	508
HCM Lane V/C Ratio	0.143	0.004	-	-	0.03	-	-	0.036
HCM Control Delay (s)	11.7	7.7	-	-	7.8	-	-	12.4
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	6	4	7
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	7	4	8

Major/Minor	Minor2		
Conflicting Flow All	572	547	228
Stage 1	308	308	-
Stage 2	264	239	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	431	445	811
Stage 1	702	660	-
Stage 2	741	708	-
Platoon blocked, %			
Mov Cap-1 Maneuver	386	430	811
Mov Cap-2 Maneuver	386	430	-
Stage 1	699	640	-
Stage 2	680	705	-

Approach	SB
HCM Control Delay, s	12.4
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	13	214	30	69	219	21	28	28	123
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	233	33	75	238	23	30	30	134

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	261	0	0	265	0	0	701	688	249
Stage 1	-	-	-	-	-	-	277	277	-
Stage 2	-	-	-	-	-	-	424	411	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1303	-	-	1299	-	-	353	369	790
Stage 1	-	-	-	-	-	-	729	681	-
Stage 2	-	-	-	-	-	-	608	595	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1303	-	-	1299	-	-	303	344	790
Mov Cap-2 Maneuver	-	-	-	-	-	-	303	344	-
Stage 1	-	-	-	-	-	-	721	674	-
Stage 2	-	-	-	-	-	-	527	561	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	1.8	15.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	543	1303	-	-	1299	-	-	340
HCM Lane V/C Ratio	0.358	0.011	-	-	0.058	-	-	0.192
HCM Control Delay (s)	15.3	7.8	-	-	7.9	-	-	18.1
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.6	0	-	-	0.2	-	-	0.7

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	15	34	11
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	16	37	12

Major/Minor	Minor2		
Conflicting Flow All	758	692	249
Stage 1	399	399	-
Stage 2	359	293	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	324	367	790
Stage 1	627	602	-
Stage 2	659	670	-
Platoon blocked, %			
Mov Cap-1 Maneuver	238	342	790
Mov Cap-2 Maneuver	238	342	-
Stage 1	620	567	-
Stage 2	517	663	-

Approach	SB
HCM Control Delay, s	18.1
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	173	2	21	0	0	6	3	0	12	22	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	188	2	23	0	0	7	3	0	13	24	0
Number of Lanes	0	1	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	9.2	8.2	8.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	35%	100%	76%	0%	39%	0%
Vol Thru, %	65%	0%	2%	67%	61%	0%
Vol Right, %	0%	0%	22%	33%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	99	97	9	28	134
LT Vol	22	0	2	6	17	0
Through Vol	0	0	21	3	0	134
RT Vol	12	99	74	0	11	0
Lane Flow Rate	37	107	106	10	30	146
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.055	0.165	0.155	0.014	0.045	0.181
Departure Headway (Hd)	5.392	5.546	5.276	5.107	5.371	4.471
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	665	647	681	700	668	804
Service Time	3.418	3.275	3.005	3.142	3.089	2.189
HCM Lane V/C Ratio	0.056	0.165	0.156	0.014	0.045	0.182
HCM Control Delay	8.7	9.4	9	8.2	8.3	8.2
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.6	0.5	0	0.1	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	11	17	134
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	12	18	146
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	8.2
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	11	33	62	0	5	25	12	0	18	237	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	36	67	0	5	27	13	0	20	258	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.8	8.5	9.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	13%	0%	10%	12%	3%	0%
Vol Thru, %	87%	98%	31%	60%	97%	92%
Vol Right, %	0%	2%	58%	29%	0%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	137	121	106	42	100	105
LT Vol	119	119	33	25	97	97
Through Vol	0	2	62	12	0	8
RT Vol	18	0	11	5	3	0
Lane Flow Rate	148	131	115	46	109	114
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.215	0.187	0.154	0.065	0.157	0.163
Departure Headway (Hd)	5.209	5.131	4.821	5.107	5.216	5.147
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	687	697	741	698	685	694
Service Time	2.957	2.879	2.871	3.165	2.967	2.898
HCM Lane V/C Ratio	0.215	0.188	0.155	0.066	0.159	0.164
HCM Control Delay	9.4	9.1	8.8	8.5	8.9	8.9
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.8	0.7	0.5	0.2	0.6	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	194	8
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	211	9
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.9
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	84	39	0	163	75	0	27	237
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	91	42	0	177	82	0	29	258
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.6	10.6	10.7
HCM LOS	A	B	B

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	68%	0%	0%	0%	100%
Vol Right, %	32%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	84	39	27	237
LT Vol	163	0	0	0	237
Through Vol	75	0	39	0	0
RT Vol	0	84	0	27	0
Lane Flow Rate	259	91	42	29	258
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.351	0.161	0.06	0.046	0.369
Departure Headway (Hd)	4.88	6.342	5.131	5.656	5.153
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	735	563	693	632	696
Service Time	2.926	4.11	2.899	3.402	2.898
HCM Lane V/C Ratio	0.352	0.162	0.061	0.046	0.371
HCM Control Delay	10.6	10.3	8.2	8.7	10.9
HCM Lane LOS	B	B	A	A	B
HCM 95th-tile Q	1.6	0.6	0.2	0.1	1.7

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	30	64	8	0	69	80	30	0	15	318	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	33	70	9	0	75	87	33	0	16	346	78
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.2	11.7	12.8
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	9%	0%	100%	0%	100%	0%	19%	0%
Vol Thru, %	91%	69%	0%	89%	0%	73%	81%	86%
Vol Right, %	0%	31%	0%	11%	0%	27%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	174	231	30	72	69	110	214	202
LT Vol	159	159	0	64	0	80	174	174
Through Vol	0	72	0	8	0	30	0	28
RT Vol	15	0	30	0	69	0	40	0
Lane Flow Rate	189	251	33	78	75	120	233	220
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.331	0.421	0.07	0.156	0.158	0.228	0.408	0.374
Departure Headway (Hd)	6.296	6.031	7.773	7.182	7.577	6.871	6.321	6.128
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	569	595	458	497	472	520	568	584
Service Time	4.059	3.794	5.558	4.966	5.353	4.647	4.084	3.891
HCM Lane V/C Ratio	0.332	0.422	0.072	0.157	0.159	0.231	0.41	0.377
HCM Control Delay	12.2	13.2	11.1	11.3	11.8	11.7	13.4	12.5
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.4	2.1	0.2	0.5	0.6	0.9	2	1.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	40	348	28
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	43	378	30
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	152	196	0
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	165	213	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	378	107	213	0	-	0
Stage 1	213	-	-	-	-	-
Stage 2	165	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.14	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.22	-	-	-
Pot Cap-1 Maneuver	610	927	1355	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	610	927	1355	-	-	-
Mov Cap-2 Maneuver	610	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	864	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1355	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

CUMULATIVE BASE

Project Title: **Redondo Beach Waterfront**
Intersection: **4 Harbor Dr/Hermosa Ave & Herondo St**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.288 *
	TH	1.00	130	1,600	0.081	N-S(2):	0.081
	LT	1.00	120	1,600	0.075 *	E-W(1):	0.064
Westbound	RT	1.00	282	1,600	0.139 *	E-W(2):	0.140 *
	TH	0.00	0	0	0.000		
	LT	1.00	102	1,600	0.064	V/C:	0.428
Northbound	RT	0.00	67	0	0.000	Lost Time:	0.100
	TH	1.00	274	1,600	0.213 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.528
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.288 *
	TH	1.00	344	1,600	0.215	N-S(2):	0.216
	LT	1.00	162	1,600	0.101 *	E-W(1):	0.116 *
Westbound	RT	1.00	167	1,600	0.054	E-W(2):	0.054
	TH	0.00	0	0	0.000		
	LT	1.00	185	1,600	0.116 *	V/C:	0.404
Northbound	RT	0.00	118	0	0.000	Lost Time:	0.100
	TH	1.00	180	1,600	0.187 *	ITS:	0.000
	LT	0.00	1	1,600	0.001		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.504
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **7 Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	167	1,600	0.104	N-S(1):	0.573 *
	TH	2.00	931	3,200	0.291	N-S(2):	0.305
	LT	1.00	156	1,600	0.098 *	E-W(1):	0.245 *
Westbound	RT	1.00	410	1,600	0.159	E-W(2):	0.234
	TH	1.00	187	1,600	0.117		
	LT	2.00	256	2,880	0.089 *	V/C:	0.818
Northbound	RT	1.00	117	1,600	0.029	Lost Time:	0.100
	TH	3.00	2,281	4,800	0.475 *	ITS:	0.000
	LT	1.00	23	1,600	0.014		
Eastbound	RT	1.00	57	1,600	0.028	ICU:	0.918
	TH	1.00	249	1,600	0.156 *		
	LT	1.00	120	1,600	0.075	LOS:	E

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	523	1,600	0.327	N-S(1):	0.438
	TH	2.00	1,915	3,200	0.598 *	N-S(2):	0.648 *
	LT	1.00	219	1,600	0.137	E-W(1):	0.274 *
Westbound	RT	1.00	272	1,600	0.033	E-W(2):	0.232
	TH	1.00	289	1,600	0.181		
	LT	2.00	306	2,880	0.106 *	V/C:	0.922
Northbound	RT	1.00	223	1,600	0.086	Lost Time:	0.100
	TH	3.00	1,445	4,800	0.301	ITS:	0.000
	LT	1.00	80	1,600	0.050 *		
Eastbound	RT	1.00	98	1,600	0.061	ICU:	1.022
	TH	1.00	269	1,600	0.168 *		
	LT	1.00	81	1,600	0.051	LOS:	F

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **8 Prospect Ave & Anita St**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	31	0	0.000	N-S(1):	0.313 *
	TH	2.00	331	3,200	0.113	N-S(2):	0.256
	LT	1.00	63	1,600	0.039 *	E-W(1):	0.264
Westbound	RT	0.00	85	0	0.000	E-W(2):	0.276 *
	TH	2.00	758	3,200	0.263 *		
	LT	1.00	147	1,600	0.092	V/C:	0.589
Northbound	RT	1.00	160	1,600	0.054	Lost Time:	0.100
	TH	1.00	439	1,600	0.274 *	ITS:	0.000
	LT	1.00	229	1,600	0.143		
Eastbound	RT	0.00	60	0	0.000	ICU:	0.689
	TH	2.00	489	3,200	0.172		
	LT	1.00	20	1,600	0.013 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	56	0	0.000	N-S(1):	0.245
	TH	2.00	570	3,200	0.196 *	N-S(2):	0.284 *
	LT	1.00	91	1,600	0.057	E-W(1):	0.294 *
Westbound	RT	0.00	82	0	0.000	E-W(2):	0.267
	TH	2.00	707	3,200	0.247		
	LT	1.00	109	1,600	0.068 *	V/C:	0.578
Northbound	RT	1.00	78	1,600	0.015	Lost Time:	0.100
	TH	1.00	301	1,600	0.188	ITS:	0.000
	LT	1.00	141	1,600	0.088 *		
Eastbound	RT	0.00	107	0	0.000	ICU:	0.678
	TH	2.00	615	3,200	0.226 *		
	LT	1.00	32	1,600	0.020	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **9 Harbor Dr & Yacht Club Way**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.224 *
	TH	1.00	165	1,600	0.116	N-S(2):	0.127
	LT	1.00	6	1,600	0.004 *	E-W(1):	0.034 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.025
	TH	1.00	1	1,600	0.002		
	LT	0.00	2	1,600	0.001 *	V/C:	0.258
Northbound	RT	0.00	1	0	0.000	Lost Time:	0.100
	TH	1.00	351	1,600	0.220 *	ITS:	0.000
	LT	1.00	17	1,600	0.011		
Eastbound	RT	0.00	15	0	0.000	ICU:	0.358
	TH	1.00	1	1,600	0.033 *		
	LT	0.00	36	1,600	0.023	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	51	0	0.000	N-S(1):	0.152
	TH	1.00	471	1,600	0.326 *	N-S(2):	0.340 *
	LT	1.00	11	1,600	0.007	E-W(1):	0.034
Westbound	RT	0.00	42	0	0.000	E-W(2):	0.048 *
	TH	1.00	0	1,600	0.028 *		
	LT	0.00	3	1,600	0.002	V/C:	0.388
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	1.00	230	1,600	0.145	ITS:	0.000
	LT	1.00	23	1,600	0.014 *		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.488
	TH	1.00	0	1,600	0.032		
	LT	0.00	32	1,600	0.020 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **10 Pacific Coast Hwy & Catalina Ave**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000	N-S(1):	0.582 *
	TH	2.00	1,107	3,200	0.346	N-S(2):	0.350
	LT	0.00	0	0	0.000 *	E-W(1):	0.174
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.196 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.778
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,863	3,200	0.582 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.01	4	23	0.174	ICU:	0.878
	TH	0.00	0	0	0.000		
	LT	1.99	560	2,860	0.196 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	2	0	0.000	N-S(1):	0.436
	TH	2.00	2,149	3,200	0.672 *	N-S(2):	0.681 *
	LT	0.00	0	0	0.000	E-W(1):	0.113
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.131 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.812
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,395	3,200	0.436	ITS:	0.000
	LT	1.00	15	1,600	0.009 *		
Eastbound	RT	0.12	22	187	0.113	ICU:	0.912
	TH	0.00	0	0	0.000		
	LT	1.88	354	2,711	0.131 *	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **11 Harbor Dr & Marina Way**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	78	1,600	0.049	N-S(1):	0.158 *
	TH	1.00	155	1,600	0.097	N-S(2):	0.133
	LT	0.00	0	0	0.000 *	E-W(1):	0.009
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.028 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.186
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	252	1,600	0.158 *	ITS:	0.000
	LT	1.00	58	1,600	0.036		
Eastbound	RT	1.00	43	1,600	0.009	ICU:	0.286
	TH	0.00	0	0	0.000		
	LT	1.00	44	1,600	0.028 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	74	1,600	0.046	N-S(1):	0.161
	TH	1.00	444	1,600	0.278 *	N-S(2):	0.334 *
	LT	0.00	0	0	0.000	E-W(1):	0.018
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.037 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.371
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	257	1,600	0.161	ITS:	0.000
	LT	1.00	89	1,600	0.056 *		
Eastbound	RT	1.00	73	1,600	0.018	ICU:	0.471
	TH	0.00	0	0	0.000		
	LT	1.00	59	1,600	0.037 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **12 Catalina Ave & Gertruda Ave**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	54	0	0.000	N-S(1):	0.165
	TH	2.00	233	3,200	0.090 *	N-S(2):	0.249 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.018
Westbound	RT	0.00	15	0	0.000	E-W(2):	0.028 *
	TH	1.00	3	1,600	0.020 *		
	LT	0.00	14	1,600	0.009	V/C:	0.277
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	494	3,200	0.161	ITS:	0.000
	LT	1.00	254	1,600	0.159 *		
Eastbound	RT	1.00	120	1,600	0.000	ICU:	0.377
	TH	1.00	2	1,600	0.009		
	LT	0.00	13	1,600	0.008 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	70	0	0.000	N-S(1):	0.105
	TH	2.00	629	3,200	0.218 *	N-S(2):	0.316 *
	LT	1.00	5	1,600	0.003	E-W(1):	0.135 *
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.045
	TH	1.00	4	1,600	0.013		
	LT	0.00	6	1,600	0.004 *	V/C:	0.451
Northbound	RT	0.00	7	0	0.000	Lost Time:	0.100
	TH	2.00	318	3,200	0.102	ITS:	0.000
	LT	1.00	156	1,600	0.098 *		
Eastbound	RT	1.00	287	1,600	0.131 *	ICU:	0.551
	TH	1.00	2	1,600	0.033		
	LT	0.00	51	1,600	0.032	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **15 Harbor Dr & Portofino Way/Beryl St**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	NBR, WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	14	1,600	0.005	N-S(1):	0.129 *
	TH	1.00	68	1,600	0.043	N-S(2):	0.047
	LT	1.00	121	1,600	0.076 *	E-W(1):	0.083
Westbound	RT	1.00	256	1,600	0.084 *	E-W(2):	0.092 *
	TH	1.00	65	1,600	0.041		
	LT	1.00	72	1,600	0.045	V/C:	0.221
Northbound	RT	0.00	50	0	0.000	Lost Time:	0.100
	TH	1.00	35	1,600	0.053 *	ITS:	0.000
	LT	1.00	7	1,600	0.004		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.321
	TH	1.00	54	1,600	0.038		
	LT	1.00	12	1,600	0.008 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	40	1,600	0.018	N-S(1):	0.298 *
	TH	1.00	190	1,600	0.119	N-S(2):	0.126
	LT	1.00	280	1,600	0.175 *	E-W(1):	0.204 *
Westbound	RT	1.00	306	1,600	0.016	E-W(2):	0.089
	TH	1.00	121	1,600	0.076		
	LT	1.00	186	1,600	0.116 *	V/C:	0.502
Northbound	RT	0.00	128	0	0.000	Lost Time:	0.100
	TH	1.00	69	1,600	0.123 *	ITS:	0.000
	LT	1.00	11	1,600	0.007		
Eastbound	RT	0.00	25	0	0.000	ICU:	0.602
	TH	1.00	115	1,600	0.088 *		
	LT	1.00	21	1,600	0.013	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **16 Catalina Ave & Beryl St**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	64	0	0.000	N-S(1):	0.198 *
	TH	2.00	224	3,200	0.090	N-S(2):	0.194
	LT	0.00	0	0	0.000 *	E-W(1):	0.045
Westbound	RT	1.00	7	1,600	0.004	E-W(2):	0.086 *
	TH	1.00	105	1,600	0.066 *		
	LT	1.00	25	1,600	0.016	V/C:	0.284
Northbound	RT	0.00	43	0	0.000	Lost Time:	0.100
	TH	2.00	589	3,200	0.198 *	ITS:	0.000
	LT	2.00	299	2,880	0.104		
Eastbound	RT	1.00	116	1,600	0.000	ICU:	0.384
	TH	1.00	47	1,600	0.029		
	LT	1.00	32	1,600	0.020 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	159	0	0.000	N-S(1):	0.130
	TH	2.00	589	3,200	0.235 *	N-S(2):	0.339 *
	LT	0.00	3	1,600	0.002	E-W(1):	0.127
Westbound	RT	1.00	19	1,600	0.011	E-W(2):	0.159 *
	TH	1.00	199	1,600	0.124 *		
	LT	1.00	38	1,600	0.024	V/C:	0.498
Northbound	RT	0.00	62	0	0.000	Lost Time:	0.100
	TH	2.00	346	3,200	0.128	ITS:	0.000
	LT	2.00	299	2,880	0.104 *		
Eastbound	RT	1.00	319	1,600	0.096	ICU:	0.598
	TH	1.00	165	1,600	0.103		
	LT	1.00	56	1,600	0.035 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **19 Pacific Coast Hwy & Beryl St**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	27	0	0.000	N-S(1):	0.560 *
	TH	2.00	1,067	3,200	0.342	N-S(2):	0.368
	LT	1.00	19	1,600	0.012 *	E-W(1):	0.117 *
Westbound	RT	1.00	29	1,600	0.012	E-W(2):	0.080
	TH	1.00	94	1,600	0.059		
	LT	1.00	52	1,600	0.033 *	V/C:	0.677
Northbound	RT	0.00	46	0	0.000	Lost Time:	0.100
	TH	2.00	1,707	3,200	0.548 *	ITS:	0.000
	LT	1.00	41	1,600	0.026		
Eastbound	RT	0.00	23	0	0.000	ICU:	0.777
	TH	1.00	112	1,600	0.084 *		
	LT	1.00	33	1,600	0.021	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	71	0	0.000	N-S(1):	0.433
	TH	2.00	1,956	3,200	0.633 *	N-S(2):	0.658 *
	LT	1.00	42	1,600	0.026	E-W(1):	0.174 *
Westbound	RT	1.00	42	1,600	0.013	E-W(2):	0.170
	TH	1.00	184	1,600	0.115		
	LT	1.00	61	1,600	0.038 *	V/C:	0.832
Northbound	RT	0.00	47	0	0.000	Lost Time:	0.100
	TH	2.00	1,256	3,200	0.407	ITS:	0.000
	LT	1.00	40	1,600	0.025 *		
Eastbound	RT	0.00	56	0	0.000	ICU:	0.932
	TH	1.00	161	1,600	0.136 *		
	LT	1.00	88	1,600	0.055	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **21 Catalina Ave & Carnelian St**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	0	1,600	0.000	N-S(1):	0.306 *
	TH	2.00	343	3,200	0.107	N-S(2):	0.110
	LT	1.00	21	1,600	0.013 *	E-W(1):	0.023
Westbound	RT	0.00	36	0	0.000	E-W(2):	0.039 *
	TH	1.00	1	1,600	0.035 *		
	LT	0.00	19	1,600	0.012	V/C:	0.345
Northbound	RT	1.00	22	1,600	0.008	Lost Time:	0.100
	TH	2.00	938	3,200	0.293 *	ITS:	0.000
	LT	1.00	4	1,600	0.003		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.445
	TH	1.00	4	1,600	0.011		
	LT	0.00	7	1,600	0.004 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	5	1,600	0.003	N-S(1):	0.291
	TH	2.00	1,005	3,200	0.314 *	N-S(2):	0.319 *
	LT	1.00	92	1,600	0.058	E-W(1):	0.027
Westbound	RT	0.00	41	0	0.000	E-W(2):	0.053 *
	TH	1.00	8	1,600	0.052 *		
	LT	0.00	34	1,600	0.021	V/C:	0.372
Northbound	RT	1.00	42	1,600	0.016	Lost Time:	0.100
	TH	2.00	745	3,200	0.233	ITS:	0.000
	LT	1.00	8	1,600	0.005 *		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.472
	TH	1.00	4	1,600	0.006		
	LT	0.00	1	1,600	0.001 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **22 Catalina Ave & Diamond St**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	4	1,600	0.000	N-S(1):	0.293 *
	TH	2.00	334	3,200	0.104	N-S(2):	0.105
	LT	1.00	27	1,600	0.017 *	E-W(1):	0.039
Westbound	RT	0.00	53	0	0.000	E-W(2):	0.045 *
	TH	1.00	1	1,600	0.034 *		
	LT	1.00	30	1,600	0.019	V/C:	0.338
Northbound	RT	1.00	64	1,600	0.031	Lost Time:	0.100
	TH	2.00	884	3,200	0.276 *	ITS:	0.000
	LT	1.00	2	1,600	0.001		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.438
	TH	1.00	9	1,600	0.020		
	LT	0.00	17	1,600	0.011 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.005	N-S(1):	0.265
	TH	2.00	969	3,200	0.303 *	N-S(2):	0.309 *
	LT	1.00	58	1,600	0.036	E-W(1):	0.037
Westbound	RT	0.00	58	0	0.000	E-W(2):	0.042 *
	TH	1.00	4	1,600	0.039 *		
	LT	1.00	50	1,600	0.031	V/C:	0.351
Northbound	RT	1.00	59	1,600	0.021	Lost Time:	0.100
	TH	2.00	732	3,200	0.229	ITS:	0.000
	LT	1.00	10	1,600	0.006 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.451
	TH	1.00	2	1,600	0.006		
	LT	0.00	4	1,600	0.003 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **23 Catalina Ave & Emerald St**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	6	1,600	0.000	N-S(1):	0.290 *
	TH	2.00	340	3,200	0.106	N-S(2):	0.110
	LT	1.00	17	1,600	0.011 *	E-W(1):	0.067
Westbound	RT	0.00	34	0	0.000	E-W(2):	0.069 *
	TH	1.00	4	1,600	0.033 *		
	LT	0.00	15	1,600	0.009	V/C:	0.359
Northbound	RT	0.00	28	0	0.000	Lost Time:	0.100
	TH	2.00	864	3,200	0.279 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.00	25	0	0.000	ICU:	0.459
	TH	1.00	9	1,600	0.058		
	LT	0.00	58	1,600	0.036 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	29	1,600	0.010	N-S(1):	0.261
	TH	2.00	951	3,200	0.297 *	N-S(2):	0.309 *
	LT	1.00	40	1,600	0.025	E-W(1):	0.047
Westbound	RT	0.00	31	0	0.000	E-W(2):	0.056 *
	TH	1.00	6	1,600	0.039 *		
	LT	0.00	25	1,600	0.016	V/C:	0.365
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	735	3,200	0.236	ITS:	0.000
	LT	1.00	19	1,600	0.012 *		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.465
	TH	1.00	6	1,600	0.031		
	LT	0.00	27	1,600	0.017 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **24 Pacific Coast Hwy & Garnet St**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	8	0	0.000	N-S(1):	0.564 *
	TH	2.00	953	3,200	0.301	N-S(2):	0.301
	LT	0.00	1	1,600	0.001 *	E-W(1):	0.017
Westbound	RT	0.00	47	0	0.000	E-W(2):	0.047 *
	TH	1.00	18	1,600	0.041 *		
	LT	1.00	3	1,600	0.002	V/C:	0.611
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	1,791	3,200	0.563 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.711
	TH	1.00	5	1,600	0.015		
	LT	1.00	9	1,600	0.006 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	31	0	0.000	N-S(1):	0.433
	TH	2.00	1,704	3,200	0.543 *	N-S(2):	0.543 *
	LT	0.00	4	1,600	0.003	E-W(1):	0.032
Westbound	RT	0.00	42	0	0.000	E-W(2):	0.043 *
	TH	1.00	16	1,600	0.036 *		
	LT	1.00	13	1,600	0.008	V/C:	0.586
Northbound	RT	0.00	44	0	0.000	Lost Time:	0.100
	TH	2.00	1,333	3,200	0.430	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.686
	TH	1.00	16	1,600	0.024		
	LT	1.00	11	1,600	0.007 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **25 Catalina Ave & Torrance Blvd**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	44	1,600	0.023	N-S(1):	0.272 *
	TH	2.00	257	3,200	0.080	N-S(2):	0.088
	LT	1.00	119	1,600	0.074 *	E-W(1):	0.059 *
Westbound	RT	1.00	165	1,600	0.029	E-W(2):	0.038
	TH	2.00	58	3,200	0.018		
	LT	1.00	80	1,600	0.050 *	V/C:	0.331
Northbound	RT	1.00	159	1,600	0.074	Lost Time:	0.100
	TH	2.00	632	3,200	0.198 *	ITS:	0.000
	LT	1.00	12	1,600	0.008		
Eastbound	RT	1.00	9	1,600	0.002	ICU:	0.431
	TH	2.00	29	3,200	0.009 *		
	LT	1.00	15	1,600	0.009	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	68	1,600	0.033	N-S(1):	0.283 *
	TH	2.00	735	3,200	0.230	N-S(2):	0.250
	LT	1.00	219	1,600	0.137 *	E-W(1):	0.100 *
Westbound	RT	1.00	227	1,600	0.005	E-W(2):	0.060
	TH	2.00	132	3,200	0.041		
	LT	1.00	101	1,600	0.063 *	V/C:	0.383
Northbound	RT	1.00	100	1,600	0.031	Lost Time:	0.100
	TH	2.00	468	3,200	0.146 *	ITS:	0.000
	LT	1.00	32	1,600	0.020		
Eastbound	RT	1.00	25	1,600	0.006	ICU:	0.483
	TH	2.00	117	3,200	0.037 *		
	LT	1.00	30	1,600	0.019	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **26 Pacific Coast Hwy & Torrance Blvd**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.562 *
	TH	2.00	892	3,200	0.285	N-S(2):	0.314
	LT	1.00	233	1,600	0.146 *	E-W(1):	0.186 *
Westbound	RT	1.00	232	1,600	0.072	E-W(2):	0.136
	TH	2.00	342	3,200	0.107		
	LT	1.00	131	1,600	0.082 *	V/C:	0.748
Northbound	RT	0.00	77	0	0.000	Lost Time:	0.100
	TH	2.00	1,255	3,200	0.416 *	ITS:	0.000
	LT	1.00	47	1,600	0.029		
Eastbound	RT	0.00	39	0	0.000	ICU:	0.848
	TH	2.00	295	3,200	0.104 *		
	LT	1.00	47	1,600	0.029	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	40	0	0.000	N-S(1):	0.541 *
	TH	2.00	1,478	3,200	0.474	N-S(2):	0.516
	LT	1.00	316	1,600	0.198 *	E-W(1):	0.251 *
Westbound	RT	1.00	308	1,600	0.094	E-W(2):	0.185
	TH	2.00	445	3,200	0.139		
	LT	1.00	176	1,600	0.110 *	V/C:	0.792
Northbound	RT	0.00	104	0	0.000	Lost Time:	0.100
	TH	2.00	993	3,200	0.343 *	ITS:	0.000
	LT	1.00	67	1,600	0.042		
Eastbound	RT	0.00	72	0	0.000	ICU:	0.892
	TH	2.00	379	3,200	0.141 *		
	LT	1.00	73	1,600	0.046	LOS:	D

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **27 Helberta Ave/Camino Real & Torrance Blvd**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	16	0	0.000	N-S(1):	0.155 *
	TH	1.00	64	1,600	0.063 *	N-S(2):	0.000
	LT	0.00	21	1,600	0.013	E-W(1):	0.232 *
Westbound	RT	0.00	26	0	0.000	E-W(2):	0.201
	TH	2.00	576	3,200	0.188		
	LT	1.00	30	1,600	0.019 *	V/C:	0.387
Northbound	RT	0.00	38	0	0.000	Lost Time:	0.100
	TH	0.61	43	974	0.083	ITS:	0.000
	LT	1.39	185	2,003	0.092 *		
Eastbound	RT	0.00	113	0	0.000	ICU:	0.487
	TH	2.00	569	3,200	0.213 *		
	LT	1.00	20	1,600	0.013	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	11	0	0.000	N-S(1):	0.135 *
	TH	1.00	29	1,600	0.037 *	N-S(2):	0.000
	LT	0.00	19	1,600	0.012	E-W(1):	0.299 *
Westbound	RT	0.00	16	0	0.000	E-W(2):	0.225
	TH	2.00	682	3,200	0.218		
	LT	1.00	46	1,600	0.029 *	V/C:	0.434
Northbound	RT	0.00	29	0	0.000	Lost Time:	0.100
	TH	0.43	31	681	0.088	ITS:	0.000
	LT	1.57	222	2,267	0.098 *		
Eastbound	RT	0.00	161	0	0.000	ICU:	0.534
	TH	2.00	704	3,200	0.270 *		
	LT	1.00	11	1,600	0.007	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **28 Prospect Ave & Torrance Blvd**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	66	0	0.000	N-S(1):	0.429 *
	TH	2.00	599	3,200	0.208	N-S(2):	0.242
	LT	1.00	202	1,600	0.126 *	E-W(1):	0.276
Westbound	RT	0.00	172	0	0.000	E-W(2):	0.305 *
	TH	2.00	586	3,200	0.237 *		
	LT	1.00	157	1,600	0.098	V/C:	0.734
Northbound	RT	0.00	246	0	0.000	Lost Time:	0.100
	TH	2.00	723	3,200	0.303 *	ITS:	0.000
	LT	1.00	55	1,600	0.034		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.834
	TH	2.00	547	3,200	0.178		
	LT	1.00	108	1,600	0.068 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	135	0	0.000	N-S(1):	0.332 *
	TH	2.00	758	3,200	0.279	N-S(2):	0.308
	LT	1.00	211	1,600	0.132 *	E-W(1):	0.316
Westbound	RT	0.00	172	0	0.000	E-W(2):	0.323 *
	TH	2.00	674	3,200	0.264 *		
	LT	1.00	174	1,600	0.109	V/C:	0.655
Northbound	RT	0.00	114	0	0.000	Lost Time:	0.100
	TH	2.00	527	3,200	0.200 *	ITS:	0.000
	LT	1.00	46	1,600	0.029		
Eastbound	RT	0.00	44	0	0.000	ICU:	0.755
	TH	2.00	619	3,200	0.207		
	LT	1.00	94	1,600	0.059 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **29 Catalina Ave & Pearl St**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	142	1,600	0.049	N-S(1):	0.198 *
	TH	2.00	194	3,200	0.062	N-S(2):	0.066
	LT	0.00	5	1,600	0.003 *	E-W(1):	0.094 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	12	1,600	0.015 *		
	LT	0.00	0	0	0.000	V/C:	0.292
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	609	3,200	0.195 *	ITS:	0.000
	LT	0.00	7	1,600	0.004		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.392
	TH	0.15	12	240	0.071		
	LT	1.85	210	2,664	0.079 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	280	1,600	0.134	N-S(1):	0.140
	TH	2.00	540	3,200	0.178 *	N-S(2):	0.180 *
	LT	0.00	31	1,600	0.019	E-W(1):	0.099 *
Westbound	RT	0.00	13	0	0.000	E-W(2):	0.000
	TH	1.00	9	1,600	0.016 *		
	LT	0.00	4	1,600	0.003	V/C:	0.279
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	375	3,200	0.121	ITS:	0.000
	LT	0.00	3	1,600	0.002 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.379
	TH	0.11	10	175	0.074		
	LT	1.89	225	2,723	0.083 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **31 Pacific Coast Hwy & Sapphire St/Francisca Ave**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	5	0	0.000	N-S(1):	0.489 *
	TH	2.00	921	3,200	0.289	N-S(2):	0.301
	LT	1.00	27	1,600	0.017 *	E-W(1):	0.046 *
Westbound	RT	0.00	19	0	0.000	E-W(2):	0.030
	TH	1.00	10	1,600	0.021		
	LT	0.00	5	1,600	0.003 *	V/C:	0.535
Northbound	RT	0.00	38	0	0.000	Lost Time:	0.100
	TH	2.00	1,472	3,200	0.472 *	ITS:	0.000
	LT	1.00	19	1,600	0.012		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.635
	TH	1.00	37	1,600	0.043 *		
	LT	0.00	15	1,600	0.009	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	7	0	0.000	N-S(1):	0.385
	TH	2.00	1,558	3,200	0.489 *	N-S(2):	0.503 *
	LT	1.00	35	1,600	0.022	E-W(1):	0.075 *
Westbound	RT	0.00	21	0	0.000	E-W(2):	0.048
	TH	1.00	11	1,600	0.023		
	LT	0.00	5	1,600	0.003 *	V/C:	0.578
Northbound	RT	0.00	28	0	0.000	Lost Time:	0.100
	TH	2.00	1,132	3,200	0.363	ITS:	0.000
	LT	1.00	22	1,600	0.014 *		
Eastbound	RT	0.00	37	0	0.000	ICU:	0.678
	TH	1.00	38	1,600	0.072 *		
	LT	0.00	40	1,600	0.025	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **34 Pacific Coast Hwy & Knob Hill Ave**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	38	0	0.000	N-S(1):	0.474 *
	TH	2.00	870	3,200	0.284	N-S(2):	0.303
	LT	1.00	52	1,600	0.033 *	E-W(1):	0.086
Westbound	RT	0.00	59	0	0.000	E-W(2):	0.108 *
	TH	1.00	54	1,600	0.071 *		
	LT	1.00	55	1,600	0.034	V/C:	0.582
Northbound	RT	0.00	36	0	0.000	Lost Time:	0.100
	TH	2.00	1,375	3,200	0.441 *	ITS:	0.000
	LT	1.00	30	1,600	0.019		
Eastbound	RT	1.00	33	1,600	0.011	ICU:	0.682
	TH	1.00	83	1,600	0.052		
	LT	1.00	59	1,600	0.037 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	35	0	0.000	N-S(1):	0.411
	TH	2.00	1,392	3,200	0.446 *	N-S(2):	0.482 *
	LT	1.00	63	1,600	0.039	E-W(1):	0.113
Westbound	RT	0.00	59	0	0.000	E-W(2):	0.154 *
	TH	1.00	133	1,600	0.120 *		
	LT	1.00	85	1,600	0.053	V/C:	0.636
Northbound	RT	0.00	72	0	0.000	Lost Time:	0.100
	TH	2.00	1,117	3,200	0.372	ITS:	0.000
	LT	1.00	57	1,600	0.036 *		
Eastbound	RT	1.00	71	1,600	0.027	ICU:	0.736
	TH	1.00	96	1,600	0.060		
	LT	1.00	54	1,600	0.034 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **35 Harbor Dr & Pacific Avenue**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.121 *
	TH	2.00	0	1,600	0.038	N-S(2):	0.038
	LT	0.00	60	1,600	0.038 *	E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.000 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *	V/C:	0.121
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	132	1,600	0.083 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.50	0	800	0.000	ICU:	0.221
	TH	0.00	0	0	0.000 *		
	LT	0.50	0	800	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.208 *
	TH	2.00	0	1,600	0.111	N-S(2):	0.111
	LT	0.00	177	1,600	0.111 *	E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.000 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *	V/C:	0.208
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	155	1,600	0.097 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.50	0	800	0.000	ICU:	0.308
	TH	0.00	0	0	0.000 *		
	LT	0.50	0	800	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **36 Pacific Coast Hwy & Palos Verdes Blvd**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	263	0	0.000	N-S(1):	0.328
	TH	2.00	563	3,200	0.258 *	N-S(2):	0.367 *
	LT	1.00	72	1,600	0.045	E-W(1):	0.269
Westbound	RT	0.00	100	0	0.000	E-W(2):	0.411 *
	TH	2.00	380	3,200	0.150 *		
	LT	1.00	73	1,600	0.046	V/C:	0.778
Northbound	RT	1.00	82	1,600	0.028	Lost Time:	0.100
	TH	2.00	904	3,200	0.283	ITS:	0.000
	LT	1.00	174	1,600	0.109 *		
Eastbound	RT	0.00	160	0	0.000	ICU:	0.878
	TH	2.00	552	3,200	0.223		
	LT	1.00	418	1,600	0.261 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	357	0	0.000	N-S(1):	0.367
	TH	2.00	1,000	3,200	0.424 *	N-S(2):	0.572 *
	LT	1.00	118	1,600	0.074	E-W(1):	0.265
Westbound	RT	0.00	138	0	0.000	E-W(2):	0.325 *
	TH	2.00	474	3,200	0.191 *		
	LT	1.00	118	1,600	0.074	V/C:	0.897
Northbound	RT	1.00	74	1,600	0.009	Lost Time:	0.100
	TH	2.00	938	3,200	0.293	ITS:	0.000
	LT	1.00	236	1,600	0.148 *		
Eastbound	RT	0.00	192	0	0.000	ICU:	0.997
	TH	2.00	419	3,200	0.191		
	LT	1.00	215	1,600	0.134 *	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **37 Pacific Coast Hwy & 2nd St**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	35	0	0.000	N-S(1):	0.502 *
	TH	3.00	1,095	4,800	0.235	N-S(2):	0.241
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.105 *
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.000
	TH	1.00	2	1,600	0.021 *		
	LT	0.00	11	1,600	0.007	V/C:	0.607
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	3.00	2,409	4,800	0.502 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.32	43	510	0.081	ICU:	0.707
	TH	0.00	0	0	0.000		
	LT	0.68	92	1,090	0.084 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	73	0	0.000	N-S(1):	0.325
	TH	3.00	2,270	4,800	0.488 *	N-S(2):	0.514 *
	LT	1.00	1	1,600	0.001	E-W(1):	0.103 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	4	1,600	0.019 *		
	LT	0.00	14	1,600	0.009	V/C:	0.617
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,552	4,800	0.324	ITS:	0.000
	LT	1.00	42	1,600	0.026 *		
Eastbound	RT	0.32	43	510	0.071	ICU:	0.717
	TH	0.00	0	0	0.000		
	LT	0.68	92	1,090	0.084 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **38 Pacific Coast Hwy & 10th/Aviation**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.509 *
	TH	3.00	670	4,800	0.140	N-S(2):	0.146
	LT	1.00	142	1,600	0.089 *	E-W(1):	0.183 *
Westbound	RT	1.00	158	1,600	0.010	E-W(2):	0.164
	TH	0.01	3	18	0.164		
	LT	1.99	522	2,864	0.182 *	V/C:	0.692
Northbound	RT	1.00	675	1,600	0.331	Lost Time:	0.100
	TH	3.00	2,015	4,800	0.420 *	ITS:	0.000
	LT	1.00	9	1,600	0.006		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.792
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.381
	TH	3.00	1,851	4,800	0.386 *	N-S(2):	0.394 *
	LT	1.00	227	1,600	0.142	E-W(1):	0.263 *
Westbound	RT	1.00	223	1,600	0.000	E-W(2):	0.236
	TH	0.03	10	42	0.236		
	LT	1.97	744	2,842	0.262 *	V/C:	0.657
Northbound	RT	1.00	529	1,600	0.200	Lost Time:	0.100
	TH	3.00	1,147	4,800	0.239	ITS:	0.000
	LT	1.00	13	1,600	0.008 *		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.757
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **39 Pacific Coast Hwy & Pier/14th St**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	63	0	0.000	N-S(1):	0.388 *
	TH	3.00	657	4,800	0.150	N-S(2):	0.215
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.086 *
Westbound	RT	1.00	6	1,600	0.004 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	V/C:	0.474
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,861	4,800	0.388 *	ITS:	0.000
	LT	2.00	187	2,880	0.065		
Eastbound	RT	1.00	172	1,600	0.043	ICU:	0.574
	TH	0.00	0	0	0.000		
	LT	2.00	237	2,880	0.082 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	150	0	0.000	N-S(1):	0.232
	TH	3.00	1,843	4,800	0.415 *	N-S(2):	0.529 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.088 *
Westbound	RT	1.00	12	1,600	0.006 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001	V/C:	0.617
Northbound	RT	0.00	6	0	0.000	Lost Time:	0.100
	TH	3.00	1,087	4,800	0.228	ITS:	0.000
	LT	2.00	327	2,880	0.114 *		
Eastbound	RT	1.00	250	1,600	0.043	ICU:	0.717
	TH	0.00	0	0	0.000		
	LT	2.00	235	2,880	0.082 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **40 Pacific Coast Hwy & 16th St**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	149	1,600	0.069	N-S(1):	0.354 *
	TH	3.00	888	4,800	0.185	N-S(2):	0.236
	LT	1.00	15	1,600	0.009 *	E-W(1):	0.082 *
Westbound	RT	0.48	25	769	0.028	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.52	27	831	0.033 *	V/C:	0.436
Northbound	RT	0.00	48	0	0.000	Lost Time:	0.100
	TH	3.00	1,610	4,800	0.345 *	ITS:	0.000
	LT	1.00	81	1,600	0.051		
Eastbound	RT	1.00	63	1,600	0.014	ICU:	0.536
	TH	0.00	0	0	0.000		
	LT	1.00	78	1,600	0.049 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	207	1,600	0.094	N-S(1):	0.248
	TH	3.00	1,917	4,800	0.399 *	N-S(2):	0.464 *
	LT	1.00	3	1,600	0.002	E-W(1):	0.083 *
Westbound	RT	0.16	3	253	0.011	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.84	16	1,347	0.012 *	V/C:	0.547
Northbound	RT	0.00	25	0	0.000	Lost Time:	0.100
	TH	3.00	1,158	4,800	0.246	ITS:	0.000
	LT	1.00	104	1,600	0.065 *		
Eastbound	RT	1.00	87	1,600	0.022	ICU:	0.647
	TH	0.00	0	0	0.000		
	LT	1.00	113	1,600	0.071 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **41 Pacific Coast Hwy & Prospect Ave**
Description: **Cumulative Base**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	75	1,600	0.025	N-S(1):	0.190 *
	TH	1.00	8	1,600	0.156 *	N-S(2):	0.000
	LT	0.00	242	1,600	0.151	E-W(1):	0.244
Westbound	RT	0.00	217	0	0.000	E-W(2):	0.433 *
	TH	2.00	1,032	3,200	0.390 *		
	LT	1.00	4	1,600	0.003	V/C:	0.623
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	1.00	38	1,600	0.034 *	ITS:	0.000
	LT	0.00	8	1,600	0.005		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.723
	TH	2.00	770	3,200	0.241		
	LT	1.00	69	1,600	0.043 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	114	1,600	0.053	N-S(1):	0.215 *
	TH	1.00	19	1,600	0.184 *	N-S(2):	0.000
	LT	0.00	275	1,600	0.172	E-W(1):	0.351
Westbound	RT	0.00	209	0	0.000	E-W(2):	0.478 *
	TH	2.00	1,205	3,200	0.442 *		
	LT	1.00	13	1,600	0.008	V/C:	0.693
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	1.00	24	1,600	0.031 *	ITS:	0.000
	LT	0.00	5	1,600	0.003		
Eastbound	RT	0.00	8	0	0.000	ICU:	0.793
	TH	2.00	1,089	3,200	0.343		
	LT	1.00	57	1,600	0.036 *	LOS:	C

* - Denotes critical movement

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	6	12	5	0	26	8	27	0	52	492	77
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	13	5	0	28	9	29	0	57	535	84
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.2	9.4	12.2
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	17%	0%	26%	43%	44%	0%
Vol Thru, %	83%	76%	52%	13%	56%	98%
Vol Right, %	0%	24%	22%	44%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	298	323	23	61	165	94
LT Vol	246	246	12	8	92	92
Through Vol	0	77	5	27	0	2
RT Vol	52	0	6	26	73	0
Lane Flow Rate	324	351	25	66	179	102
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.464	0.478	0.041	0.105	0.282	0.154
Departure Headway (Hd)	5.153	4.898	5.888	5.693	5.668	5.43
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	696	734	603	625	631	656
Service Time	2.903	2.648	3.978	3.772	3.435	3.197
HCM Lane V/C Ratio	0.466	0.478	0.041	0.106	0.284	0.155
HCM Control Delay	12.3	12.1	9.2	9.4	10.7	9.2
HCM Lane LOS	B	B	A	A	B	A
HCM 95th-tile Q	2.5	2.6	0.1	0.4	1.2	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	73	184	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	79	200	2
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.2
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	21	106	21	0	12	35	12	0	12	49	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	23	115	23	0	13	38	13	0	13	53	68
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.7	8	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	14%	20%	39%
Vol Thru, %	40%	72%	59%	48%
Vol Right, %	51%	14%	20%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	148	59	96
LT Vol	49	106	35	46
Through Vol	63	21	12	13
RT Vol	12	21	12	37
Lane Flow Rate	135	161	64	104
Geometry Grp	1	1	1	1
Degree of Util (X)	0.161	0.201	0.082	0.133
Departure Headway (Hd)	4.293	4.492	4.58	4.601
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	836	800	782	779
Service Time	2.319	2.519	2.611	2.63
HCM Lane V/C Ratio	0.161	0.201	0.082	0.134
HCM Control Delay	8.1	8.7	8	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.7	0.3	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	37	46	13
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	40	50	14
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.3
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	84	124	63	0	15	49	26	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	91	135	68	0	16	53	28	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9.9	8.3
HCM LOS	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	17%	10%
Vol Thru, %	46%	54%	75%
Vol Right, %	23%	29%	15%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	271	90	168
LT Vol	124	49	126
Through Vol	63	26	25
RT Vol	84	15	17
Lane Flow Rate	295	98	183
Geometry Grp	1	1	1
Degree of Util (X)	0.362	0.124	0.241
Departure Headway (Hd)	4.42	4.571	4.747
Convergence, Y/N	Yes	Yes	Yes
Cap	813	783	756
Service Time	2.448	2.607	2.783
HCM Lane V/C Ratio	0.363	0.125	0.242
HCM Control Delay	9.9	8.3	9.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.7	0.4	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	17	126	25
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	18	137	27
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.3
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	22	164	391	55	69	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	178	425	60	75	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	485	0	-	0	681	455
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	226	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1078	-	-	-	416	605
Stage 1	-	-	-	-	639	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1078	-	-	-	407	605
Mov Cap-2 Maneuver	-	-	-	-	407	-
Stage 1	-	-	-	-	639	-
Stage 2	-	-	-	-	794	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	15.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1078	-	-	-	432
HCM Lane V/C Ratio	0.022	-	-	-	0.211
HCM Control Delay (s)	8.4	-	-	-	15.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

Intersection	
Intersection Delay, s/veh	16.6
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	195	46	0	48	257	0	0	167	0	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	212	50	0	52	279	0	0	182	0	65
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	15.3	18.5	19.4
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	74%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	26%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	227	195	46	48	257	140	78	22
LT Vol	0	195	0	0	257	0	78	0
Through Vol	60	0	46	0	0	0	0	22
RT Vol	167	0	0	48	0	140	0	0
Lane Flow Rate	247	212	50	52	279	152	85	24
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.537	0.449	0.096	0.115	0.575	0.328	0.171	0.043
Departure Headway (Hd)	7.829	7.626	6.909	7.915	7.404	7.759	7.247	6.53
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	459	471	517	452	486	463	493	546
Service Time	5.596	5.395	4.678	5.679	5.167	5.524	5.012	4.295
HCM Lane V/C Ratio	0.538	0.45	0.097	0.115	0.574	0.328	0.172	0.044
HCM Control Delay	19.4	16.5	10.4	11.7	19.8	14.3	11.5	9.6
HCM Lane LOS	C	C	B	B	C	B	B	A
HCM 95th-tile Q	3.1	2.3	0.3	0.4	3.6	1.4	0.6	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	140	78	22
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	152	85	24
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	2	0	1	5	3	36	23	730	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	1	5	3	39	25	793	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	859	1258	193	1063	1271	398	387	0	0
Stage 1	411	411	-	845	845	-	-	-	-
Stage 2	448	847	-	218	426	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	250	170	816	177	167	601	1168	-	-
Stage 1	589	593	-	324	377	-	-	-	-
Stage 2	560	376	-	764	584	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	222	162	816	171	159	601	1168	-	-
Mov Cap-2 Maneuver	222	162	-	171	159	-	-	-	-
Stage 1	576	579	-	317	369	-	-	-	-
Stage 2	508	368	-	744	570	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	17.4	15	0.2
HCM LOS	C	C	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1168	-	-	293	407	821	-	-
HCM Lane V/C Ratio	0.021	-	-	0.011	0.118	0.024	-	-
HCM Control Delay (s)	8.2	-	-	17.4	15	9.5	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0.4	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	18	329	27
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	20	358	29

Major/Minor	Major2		
Conflicting Flow All	797	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	821	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	821	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.5
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	0	1	1	1	110	1	631	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	1	1	1	120	1	686	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	723	1066	156	910	1066	343	312	0	0
Stage 1	377	377	-	689	689	-	-	-	-
Stage 2	346	689	-	221	377	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	314	221	862	230	221	653	1245	-	-
Stage 1	616	614	-	402	445	-	-	-	-
Stage 2	643	445	-	761	614	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	248	213	862	223	213	653	1245	-	-
Mov Cap-2 Maneuver	248	213	-	223	213	-	-	-	-
Stage 1	615	592	-	402	445	-	-	-	-
Stage 2	523	445	-	732	592	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	18.7	12.1	0
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1245	-	-	272	631	903	-	-
HCM Lane V/C Ratio	0.001	-	-	0.032	0.193	0.036	-	-
HCM Control Delay (s)	7.9	0	-	18.7	12.1	9.1	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0.1	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	30	287	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	33	312	0

Major/Minor	Major2		
Conflicting Flow All	687	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	903	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	903	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.9
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	78	6	15	107	11	22	104	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	85	7	16	116	12	24	113	51

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	128	0	0	91	0	0	262	251	88
Stage 1	-	-	-	-	-	-	90	90	-
Stage 2	-	-	-	-	-	-	172	161	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1458	-	-	1504	-	-	691	652	970
Stage 1	-	-	-	-	-	-	917	820	-
Stage 2	-	-	-	-	-	-	830	765	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1458	-	-	1504	-	-	658	645	970
Mov Cap-2 Maneuver	-	-	-	-	-	-	658	645	-
Stage 1	-	-	-	-	-	-	916	819	-
Stage 2	-	-	-	-	-	-	785	757	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.8	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	712	1458	-	-	1504	-	-	649
HCM Lane V/C Ratio	0.264	0.001	-	-	0.011	-	-	0.055
HCM Control Delay (s)	11.9	7.5	-	-	7.4	-	-	10.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	2	29	2
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	2	32	2

Major/Minor	Minor2		
Conflicting Flow All	327	248	122
Stage 1	155	155	-
Stage 2	172	93	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	626	655	929
Stage 1	847	769	-
Stage 2	830	818	-
Platoon blocked, %			
Mov Cap-1 Maneuver	509	648	929
Mov Cap-2 Maneuver	509	648	-
Stage 1	846	761	-
Stage 2	677	817	-

Approach	SB
HCM Control Delay, s	10.9
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	119	18	53	129	17	9	13	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	129	20	58	140	18	10	14	59

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	159	0	0	149	0	0	429	428	139
Stage 1	-	-	-	-	-	-	154	154	-
Stage 2	-	-	-	-	-	-	275	274	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1420	-	-	1432	-	-	536	519	909
Stage 1	-	-	-	-	-	-	848	770	-
Stage 2	-	-	-	-	-	-	731	683	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1420	-	-	1432	-	-	502	495	909
Mov Cap-2 Maneuver	-	-	-	-	-	-	502	495	-
Stage 1	-	-	-	-	-	-	843	766	-
Stage 2	-	-	-	-	-	-	681	655	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	2	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	734	1420	-	-	1432	-	-	525
HCM Lane V/C Ratio	0.113	0.005	-	-	0.04	-	-	0.062
HCM Control Delay (s)	10.5	7.5	-	-	7.6	-	-	12.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	11	13	6
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	12	14	7

Major/Minor	Minor2		
Conflicting Flow All	456	429	149
Stage 1	265	265	-
Stage 2	191	164	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	515	518	898
Stage 1	740	689	-
Stage 2	811	762	-
Platoon blocked, %			
Mov Cap-1 Maneuver	455	494	898
Mov Cap-2 Maneuver	455	494	-
Stage 1	736	661	-
Stage 2	740	758	-

Approach	SB
HCM Control Delay, s	12.3
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	60	1	2	0	0	4	1	0	3	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	65	1	2	0	0	4	1	0	3	2	0
Number of Lanes	0	1	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	8.2	7.9	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	60%	100%	91%	0%	60%	0%
Vol Thru, %	40%	0%	3%	80%	40%	0%
Vol Right, %	0%	0%	6%	20%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	31	32	5	5	125
LT Vol	2	0	1	4	2	0
Through Vol	0	0	2	1	0	125
RT Vol	3	31	29	0	3	0
Lane Flow Rate	5	34	35	5	5	136
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.008	0.05	0.05	0.007	0.007	0.15
Departure Headway (Hd)	4.995	5.291	5.2	4.722	4.964	3.963
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	721	672	684	747	714	893
Service Time	2.995	3.058	2.967	2.822	2.744	1.742
HCM Lane V/C Ratio	0.007	0.051	0.051	0.007	0.007	0.152
HCM Control Delay	8	8.3	8.2	7.9	7.8	7.5
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0	0.2	0.2	0	0	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	2	125
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	2	136
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	7.5
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	14	16	48	0	4	14	25	0	30	265	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	17	52	0	4	15	27	0	33	288	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.5	8.3	9.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	18%	0%	18%	9%	4%	0%
Vol Thru, %	82%	97%	21%	33%	96%	94%
Vol Right, %	0%	3%	62%	58%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	163	137	78	43	92	94
LT Vol	133	133	16	14	88	88
Through Vol	0	4	48	25	0	6
RT Vol	30	0	14	4	4	0
Lane Flow Rate	177	148	85	47	100	102
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.252	0.207	0.114	0.064	0.144	0.145
Departure Headway (Hd)	5.133	5.02	4.855	4.916	5.182	5.115
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	698	714	736	725	690	699
Service Time	2.873	2.76	2.901	2.967	2.926	2.859
HCM Lane V/C Ratio	0.254	0.207	0.115	0.065	0.145	0.146
HCM Control Delay	9.6	9.1	8.5	8.3	8.8	8.7
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	1	0.8	0.4	0.2	0.5	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	4	176	6
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	191	7
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.7
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	78	18	0	130	87	0	22	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	85	20	0	141	95	0	24	109
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.2	9.5	8.7
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	60%	0%	0%	0%	100%
Vol Right, %	40%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	217	78	18	22	100
LT Vol	130	0	0	0	100
Through Vol	87	0	18	0	0
RT Vol	0	78	0	22	0
Lane Flow Rate	236	85	20	24	109
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.298	0.139	0.026	0.037	0.152
Departure Headway (Hd)	4.552	5.902	4.695	5.527	5.024
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	790	608	761	649	714
Service Time	2.575	3.637	2.43	3.251	2.749
HCM Lane V/C Ratio	0.299	0.14	0.026	0.037	0.153
HCM Control Delay	9.5	9.6	7.6	8.5	8.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	1.3	0.5	0.1	0.1	0.5

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	45	72	6	0	34	82	30	0	7	407	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	49	78	7	0	37	89	33	0	8	442	57
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	10.7	11	12.4
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	3%	0%	100%	0%	100%	0%	24%	0%
Vol Thru, %	97%	80%	0%	92%	0%	73%	76%	74%
Vol Right, %	0%	20%	0%	8%	0%	27%	0%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	211	256	45	78	34	112	106	109
LT Vol	204	204	0	72	0	82	81	81
Through Vol	0	52	0	6	0	30	0	28
RT Vol	7	0	45	0	34	0	25	0
Lane Flow Rate	229	278	49	85	37	122	115	118
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.372	0.439	0.099	0.158	0.074	0.22	0.201	0.197
Departure Headway (Hd)	5.849	5.688	7.252	6.688	7.207	6.507	6.302	5.999
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	615	633	493	535	496	550	569	597
Service Time	3.589	3.428	5.009	4.444	4.963	4.263	4.052	3.749
HCM Lane V/C Ratio	0.372	0.439	0.099	0.159	0.075	0.222	0.202	0.198
HCM Control Delay	12	12.8	10.8	10.7	10.5	11.1	10.6	10.2
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.7	2.2	0.3	0.6	0.2	0.8	0.7	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	25	161	28
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	175	30
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.4
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	132	0	0
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	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	143	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	143	0	0	0	-	0
Stage 1	0	-	-	-	-	-
Stage 2	143	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	850	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	850	-	-	-	-	-
Mov Cap-2 Maneuver	850	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	884	-	-	-	-	-

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

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

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	7	8	6	0	36	10	36	0	27	292	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	9	7	0	39	11	39	0	29	317	35
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.2	9.7	10.2
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	16%	0%	33%	44%	11%	0%
Vol Thru, %	84%	82%	38%	12%	89%	97%
Vol Right, %	0%	18%	29%	44%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	173	178	21	82	249	229
LT Vol	146	146	8	10	222	222
Through Vol	0	32	6	36	0	7
RT Vol	27	0	7	36	27	0
Lane Flow Rate	188	193	23	89	270	248
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.284	0.281	0.038	0.14	0.396	0.358
Departure Headway (Hd)	5.437	5.231	5.971	5.646	5.272	5.195
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	656	681	603	629	678	688
Service Time	3.211	3.006	3.971	3.734	3.04	2.964
HCM Lane V/C Ratio	0.287	0.283	0.038	0.141	0.398	0.36
HCM Control Delay	10.4	10.1	9.2	9.7	11.5	10.9
HCM Lane LOS	B	B	A	A	B	B
HCM 95th-tile Q	1.2	1.2	0.1	0.5	1.9	1.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	27	443	7
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	29	482	8
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	11.2
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	3	83	2	0	30	86	45	0	11	147	99
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	90	2	0	33	93	49	0	12	160	108
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.1	9.6	10.2
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	3%	19%	40%
Vol Thru, %	57%	94%	53%	57%
Vol Right, %	39%	2%	28%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	257	88	161	148
LT Vol	147	83	86	84
Through Vol	99	2	45	5
RT Vol	11	3	30	59
Lane Flow Rate	279	96	175	161
Geometry Grp	1	1	1	1
Degree of Util (X)	0.357	0.138	0.241	0.224
Departure Headway (Hd)	4.595	5.201	4.966	5.005
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	777	682	716	711
Service Time	2.66	3.291	3.046	3.082
HCM Lane V/C Ratio	0.359	0.141	0.244	0.226
HCM Control Delay	10.2	9.1	9.6	9.5
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.6	0.5	0.9	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	59	84	5
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	64	91	5
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.5
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	20.5
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	72	102	55	0	37	124	93	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	78	111	60	0	40	135	101	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	13	13.4
HCM LOS	B	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	15%	9%
Vol Thru, %	45%	49%	80%
Vol Right, %	24%	37%	11%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	229	254	501
LT Vol	102	124	399
Through Vol	55	93	55
RT Vol	72	37	47
Lane Flow Rate	249	276	545
Geometry Grp	1	1	1
Degree of Util (X)	0.408	0.442	0.813
Departure Headway (Hd)	5.906	5.757	5.374
Convergence, Y/N	Yes	Yes	Yes
Cap	605	621	670
Service Time	3.977	3.825	3.424
HCM Lane V/C Ratio	0.412	0.444	0.813
HCM Control Delay	13	13.4	27.6
HCM Lane LOS	B	B	D
HCM 95th-tile Q	2	2.3	8.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	47	399	55
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	51	434	60
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	27.6
HCM LOS	D

Lane

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	21	252	349	289	80	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	274	379	314	87	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	693	0	-	0	856	536
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	320	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	902	-	-	-	328	545
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	736	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	902	-	-	-	320	545
Mov Cap-2 Maneuver	-	-	-	-	320	-
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	717	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	20
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	902	-	-	-	340
HCM Lane V/C Ratio	0.025	-	-	-	0.297
HCM Control Delay (s)	9.1	-	-	-	20
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.2

Intersection	
Intersection Delay, s/veh	43.3
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	259	70	0	35	403	0	0	211	0	44
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	282	76	0	38	438	0	0	229	0	48
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	32.3	72.9	39.6
HCM LOS	D	F	E

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	83%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	17%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	255	259	70	35	403	141	264	45
LT Vol	0	259	0	0	403	0	264	0
Through Vol	44	0	70	0	0	0	0	45
RT Vol	211	0	0	35	0	141	0	0
Lane Flow Rate	277	282	76	38	438	153	287	49
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.769	0.759	0.19	0.106	1	0.399	0.707	0.111
Departure Headway (Hd)	10.133	9.701	8.998	10.054	9.533	9.376	8.875	8.175
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	360	374	400	356	381	385	407	440
Service Time	7.833	7.43	6.728	7.812	7.29	7.102	6.602	5.902
HCM Lane V/C Ratio	0.769	0.754	0.19	0.107	1.15	0.397	0.705	0.111
HCM Control Delay	39.6	37.3	13.8	14	78	18.2	30.4	11.9
HCM Lane LOS	E	E	B	B	F	C	D	B
HCM 95th-tile Q	6.2	6.1	0.7	0.4	11.9	1.9	5.3	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	141	264	45
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	153	287	49
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	24.7
HCM LOS	C

Lane

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	10	0	2	0	3	61	19	407	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	2	0	3	66	21	442	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1303	1524	468	1055	1535	222	936	0	0
Stage 1	1039	1039	-	484	484	-	-	-	-
Stage 2	264	485	-	571	1051	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	118	117	542	180	115	782	727	-	-
Stage 1	247	306	-	533	550	-	-	-	-
Stage 2	718	550	-	473	302	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	99	108	542	168	106	782	727	-	-
Mov Cap-2 Maneuver	99	108	-	168	106	-	-	-	-
Stage 1	240	290	-	518	534	-	-	-	-
Stage 2	634	534	-	447	286	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	40.3	11.8	0.4
HCM LOS	E	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	727	-	-	115	602	1113	-	-
HCM Lane V/C Ratio	0.028	-	-	0.113	0.116	0.052	-	-
HCM Control Delay (s)	10.1	-	-	40.3	11.8	8.4	-	-
HCM Lane LOS	B	-	-	E	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.4	0.2	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	53	838	23
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	58	911	25

Major/Minor	Major2		
Conflicting Flow All	443	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1113	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1113	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.5
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	6	0	3	0	0	43	1	385	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	3	0	0	47	1	418	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1146	1359	423	934	1357	211	846	0	0
Stage 1	935	935	-	422	422	-	-	-	-
Stage 2	211	424	-	512	935	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	154	147	579	221	148	794	787	-	-
Stage 1	285	342	-	580	587	-	-	-	-
Stage 2	771	585	-	513	342	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	140	141	579	213	142	794	787	-	-
Mov Cap-2 Maneuver	140	141	-	213	142	-	-	-	-
Stage 1	284	328	-	579	586	-	-	-	-
Stage 2	724	584	-	490	328	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	25.3	9.8	0
HCM LOS	D	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	787	-	-	187	794	1134	-	-
HCM Lane V/C Ratio	0.001	-	-	0.052	0.059	0.039	-	-
HCM Control Delay (s)	9.6	0	-	25.3	9.8	8.3	-	-
HCM Lane LOS	A	A	-	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	41	778	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	45	846	0

Major/Minor	Major2		
Conflicting Flow All	422	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1134	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1134	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	5	201	13	38	210	7	23	5	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	218	14	41	228	8	25	5	60

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	236	0	0	233	0	0	557	554	226
Stage 1	-	-	-	-	-	-	236	236	-
Stage 2	-	-	-	-	-	-	321	318	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1331	-	-	1335	-	-	441	440	813
Stage 1	-	-	-	-	-	-	767	710	-
Stage 2	-	-	-	-	-	-	691	654	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1331	-	-	1335	-	-	422	425	813
Mov Cap-2 Maneuver	-	-	-	-	-	-	422	425	-
Stage 1	-	-	-	-	-	-	764	707	-
Stage 2	-	-	-	-	-	-	659	634	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	1.2	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	620	1331	-	-	1335	-	-	500
HCM Lane V/C Ratio	0.146	0.004	-	-	0.031	-	-	0.037
HCM Control Delay (s)	11.8	7.7	-	-	7.8	-	-	12.5
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	6	4	7
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	7	4	8

Major/Minor	Minor2		
Conflicting Flow All	584	558	232
Stage 1	315	315	-
Stage 2	269	243	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	423	438	807
Stage 1	696	656	-
Stage 2	737	705	-
Platoon blocked, %			
Mov Cap-1 Maneuver	378	423	807
Mov Cap-2 Maneuver	378	423	-
Stage 1	693	636	-
Stage 2	675	702	-

Approach	SB
HCM Control Delay, s	12.5
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	13	219	31	70	224	21	29	29	126
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	238	34	76	243	23	32	32	137

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	266	0	0	272	0	0	715	701	255
Stage 1	-	-	-	-	-	-	283	283	-
Stage 2	-	-	-	-	-	-	432	418	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1298	-	-	1291	-	-	346	363	784
Stage 1	-	-	-	-	-	-	724	677	-
Stage 2	-	-	-	-	-	-	602	591	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1298	-	-	1291	-	-	295	338	784
Mov Cap-2 Maneuver	-	-	-	-	-	-	295	338	-
Stage 1	-	-	-	-	-	-	716	670	-
Stage 2	-	-	-	-	-	-	520	556	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	1.8	15.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	534	1298	-	-	1291	-	-	332
HCM Lane V/C Ratio	0.375	0.011	-	-	0.059	-	-	0.2
HCM Control Delay (s)	15.7	7.8	-	-	8	-	-	18.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.7	0	-	-	0.2	-	-	0.7

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	15	35	11
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	16	38	12

Major/Minor	Minor2		
Conflicting Flow All	774	707	255
Stage 1	407	407	-
Stage 2	367	300	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	316	360	784
Stage 1	621	597	-
Stage 2	653	666	-
Platoon blocked, %			
Mov Cap-1 Maneuver	230	335	784
Mov Cap-2 Maneuver	230	335	-
Stage 1	614	562	-
Stage 2	508	659	-

Approach	SB
HCM Control Delay, s	18.5
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	177	2	21	0	0	6	3	0	12	22	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	192	2	23	0	0	7	3	0	13	24	0
Number of Lanes	0	1	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	9.2	8.2	8.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	35%	100%	77%	0%	39%	0%
Vol Thru, %	65%	0%	2%	67%	61%	0%
Vol Right, %	0%	0%	21%	33%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	101	99	9	28	137
LT Vol	22	0	2	6	17	0
Through Vol	0	0	21	3	0	137
RT Vol	12	101	76	0	11	0
Lane Flow Rate	37	110	108	10	30	149
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.056	0.169	0.158	0.014	0.046	0.185
Departure Headway (Hd)	5.407	5.556	5.29	5.122	5.384	4.484
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	663	646	679	698	667	801
Service Time	3.435	3.286	3.02	3.16	3.103	2.202
HCM Lane V/C Ratio	0.056	0.17	0.159	0.014	0.045	0.186
HCM Control Delay	8.8	9.4	9	8.2	8.4	8.2
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.6	0.6	0	0.1	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	11	17	137
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	12	18	149
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	8.2
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	11	34	63	0	5	26	12	0	18	242	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	37	68	0	5	28	13	0	20	263	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.8	8.6	9.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	13%	0%	10%	12%	3%	0%
Vol Thru, %	87%	98%	31%	60%	97%	93%
Vol Right, %	0%	2%	58%	28%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	139	123	108	43	102	107
LT Vol	121	121	34	26	99	99
Through Vol	0	2	63	12	0	8
RT Vol	18	0	11	5	3	0
Lane Flow Rate	151	134	117	47	111	116
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.219	0.191	0.158	0.067	0.161	0.167
Departure Headway (Hd)	5.223	5.146	4.846	5.136	5.233	5.165
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	684	695	737	694	683	692
Service Time	2.974	2.898	2.897	3.197	2.985	2.918
HCM Lane V/C Ratio	0.221	0.193	0.159	0.068	0.163	0.168
HCM Control Delay	9.4	9.1	8.8	8.6	9	9
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.8	0.7	0.6	0.2	0.6	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	198	8
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	215	9
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	87	41	0	167	78	0	29	242
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	95	45	0	182	85	0	32	263
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.7	10.8	10.8
HCM LOS	A	B	B

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	68%	0%	0%	0%	100%
Vol Right, %	32%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	245	87	41	29	242
LT Vol	167	0	0	0	242
Through Vol	78	0	41	0	0
RT Vol	0	87	0	29	0
Lane Flow Rate	266	95	45	32	263
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.363	0.168	0.064	0.05	0.378
Departure Headway (Hd)	4.905	6.38	5.168	5.682	5.179
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	730	560	688	629	692
Service Time	2.956	4.151	2.939	3.433	2.929
HCM Lane V/C Ratio	0.364	0.17	0.065	0.051	0.38
HCM Control Delay	10.8	10.4	8.3	8.7	11.1
HCM Lane LOS	B	B	A	A	B
HCM 95th-tile Q	1.7	0.6	0.2	0.2	1.8

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	31	79	8	0	70	91	31	0	15	325	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	34	86	9	0	76	99	34	0	16	353	80
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.7	12.2	13.3
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	8%	0%	100%	0%	100%	0%	19%	0%
Vol Thru, %	92%	69%	0%	91%	0%	75%	81%	86%
Vol Right, %	0%	31%	0%	9%	0%	25%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	178	237	31	87	70	122	219	207
LT Vol	163	163	0	79	0	91	178	178
Through Vol	0	74	0	8	0	31	0	29
RT Vol	15	0	31	0	70	0	41	0
Lane Flow Rate	193	257	34	95	76	133	238	225
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.346	0.442	0.074	0.192	0.163	0.258	0.429	0.393
Departure Headway (Hd)	6.458	6.193	7.9	7.322	7.71	7.017	6.483	6.288
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	554	578	451	487	463	509	552	569
Service Time	4.237	3.971	5.697	5.118	5.499	4.805	4.26	4.065
HCM Lane V/C Ratio	0.348	0.445	0.075	0.195	0.164	0.261	0.431	0.395
HCM Control Delay	12.7	13.8	11.3	11.9	12	12.3	14.1	13.1
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.5	2.2	0.2	0.7	0.6	1	2.1	1.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	41	356	29
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	45	387	32
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.6
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	155	0	0
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	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	168	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	168	0	0	0	-	0
Stage 1	0	-	-	-	-	-
Stage 2	168	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	822	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	862	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	822	-	-	-	-	-
Mov Cap-2 Maneuver	822	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	862	-	-	-	-	-

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

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

EXISTING PLUS PROJECT

Project Title: **Redondo Beach Waterfront**
Intersection: **4 Harbor Dr/Hermosa Ave & Herondo St**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.316 *
	TH	1.00	154	1,600	0.096	N-S(2):	0.096
	LT	1.00	117	1,600	0.073 *	E-W(1):	0.082
Westbound	RT	1.00	276	1,600	0.136 *	E-W(2):	0.137 *
	TH	0.00	0	0	0.000		
	LT	1.00	131	1,600	0.082	V/C:	0.453
Northbound	RT	0.00	90	0	0.000	Lost Time:	0.100
	TH	1.00	298	1,600	0.243 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.553
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.352 *
	TH	1.00	403	1,600	0.252	N-S(2):	0.253
	LT	1.00	159	1,600	0.099 *	E-W(1):	0.159 *
Westbound	RT	1.00	163	1,600	0.052	E-W(2):	0.052
	TH	0.00	0	0	0.000		
	LT	1.00	254	1,600	0.159 *	V/C:	0.511
Northbound	RT	0.00	165	0	0.000	Lost Time:	0.100
	TH	1.00	238	1,600	0.253 *	ITS:	0.000
	LT	0.00	1	1,600	0.001		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.611
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **7 Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	177	1,600	0.111	N-S(1):	0.561 *
	TH	2.00	923	3,200	0.288	N-S(2):	0.302
	LT	1.00	153	1,600	0.096 *	E-W(1):	0.253 *
Westbound	RT	1.00	401	1,600	0.155	E-W(2):	0.235
	TH	1.00	199	1,600	0.124		
	LT	2.00	267	2,880	0.093 *	V/C:	0.814
Northbound	RT	1.00	128	1,600	0.034	Lost Time:	0.100
	TH	3.00	2,231	4,800	0.465 *	ITS:	0.000
	LT	1.00	23	1,600	0.014		
Eastbound	RT	1.00	56	1,600	0.028	ICU:	0.914
	TH	1.00	256	1,600	0.160 *		
	LT	1.00	128	1,600	0.080	LOS:	E

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	540	1,600	0.338	N-S(1):	0.432
	TH	2.00	1,893	3,200	0.592 *	N-S(2):	0.641 *
	LT	1.00	214	1,600	0.134	E-W(1):	0.296 *
Westbound	RT	1.00	266	1,600	0.033	E-W(2):	0.262
	TH	1.00	318	1,600	0.199		
	LT	2.00	336	2,880	0.117 *	V/C:	0.937
Northbound	RT	1.00	242	1,600	0.093	Lost Time:	0.100
	TH	3.00	1,428	4,800	0.298	ITS:	0.000
	LT	1.00	78	1,600	0.049 *		
Eastbound	RT	1.00	96	1,600	0.060	ICU:	1.037
	TH	1.00	287	1,600	0.179 *		
	LT	1.00	100	1,600	0.063	LOS:	F

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **8 Prospect Ave & Anita St**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	35	0	0.000	N-S(1):	0.308 *
	TH	2.00	324	3,200	0.112	N-S(2):	0.252
	LT	1.00	62	1,600	0.039 *	E-W(1):	0.264
Westbound	RT	0.00	83	0	0.000	E-W(2):	0.281 *
	TH	2.00	769	3,200	0.266 *		
	LT	1.00	144	1,600	0.090	V/C:	0.589
Northbound	RT	1.00	157	1,600	0.053	Lost Time:	0.100
	TH	1.00	430	1,600	0.269 *	ITS:	0.000
	LT	1.00	224	1,600	0.140		
Eastbound	RT	0.00	59	0	0.000	ICU:	0.689
	TH	2.00	499	3,200	0.174		
	LT	1.00	24	1,600	0.015 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	67	0	0.000	N-S(1):	0.240
	TH	2.00	558	3,200	0.195 *	N-S(2):	0.281 *
	LT	1.00	89	1,600	0.056	E-W(1):	0.300 *
Westbound	RT	0.00	80	0	0.000	E-W(2):	0.284
	TH	2.00	753	3,200	0.260		
	LT	1.00	107	1,600	0.067 *	V/C:	0.581
Northbound	RT	1.00	76	1,600	0.014	Lost Time:	0.100
	TH	1.00	295	1,600	0.184	ITS:	0.000
	LT	1.00	138	1,600	0.086 *		
Eastbound	RT	0.00	105	0	0.000	ICU:	0.681
	TH	2.00	641	3,200	0.233 *		
	LT	1.00	39	1,600	0.024	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **9 Harbor Dr & Yacht Club Way**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.253 *
	TH	1.00	220	1,600	0.151	N-S(2):	0.162
	LT	1.00	6	1,600	0.004 *	E-W(1):	0.033 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.024
	TH	1.00	1	1,600	0.002		
	LT	0.00	2	1,600	0.001 *	V/C:	0.286
Northbound	RT	0.00	1	0	0.000	Lost Time:	0.100
	TH	1.00	397	1,600	0.249 *	ITS:	0.000
	LT	1.00	17	1,600	0.011		
Eastbound	RT	0.00	15	0	0.000	ICU:	0.386
	TH	1.00	1	1,600	0.032 *		
	LT	0.00	35	1,600	0.022	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	50	0	0.000	N-S(1):	0.219
	TH	1.00	600	1,600	0.406 *	N-S(2):	0.420 *
	LT	1.00	11	1,600	0.007	E-W(1):	0.033
Westbound	RT	0.00	41	0	0.000	E-W(2):	0.047 *
	TH	1.00	0	1,600	0.028 *		
	LT	0.00	3	1,600	0.002	V/C:	0.467
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	1.00	337	1,600	0.212	ITS:	0.000
	LT	1.00	23	1,600	0.014 *		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.567
	TH	1.00	0	1,600	0.031		
	LT	0.00	31	1,600	0.019 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **10 Pacific Coast Hwy & Catalina Ave**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000	N-S(1):	0.564 *
	TH	2.00	1,073	3,200	0.336	N-S(2):	0.340
	LT	0.00	0	0	0.000 *	E-W(1):	0.180
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.202 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.766
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,804	3,200	0.564 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.01	4	22	0.180	ICU:	0.866
	TH	0.00	0	0	0.000		
	LT	1.99	578	2,860	0.202 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	2	0	0.000	N-S(1):	0.420
	TH	2.00	2,067	3,200	0.647 *	N-S(2):	0.656 *
	LT	0.00	0	0	0.000	E-W(1):	0.130
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.150 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.806
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,343	3,200	0.420	ITS:	0.000
	LT	1.00	15	1,600	0.009 *		
Eastbound	RT	0.10	22	163	0.130	ICU:	0.906
	TH	0.00	0	0	0.000		
	LT	1.90	409	2,733	0.150 *	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **11 Harbor Dr & Marina Way**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	76	1,600	0.048	N-S(1):	0.188 *
	TH	1.00	210	1,600	0.131	N-S(2):	0.167
	LT	0.00	0	0	0.000 *	E-W(1):	0.008
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.027 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.215
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	300	1,600	0.188 *	ITS:	0.000
	LT	1.00	57	1,600	0.036		
Eastbound	RT	1.00	42	1,600	0.008	ICU:	0.315
	TH	0.00	0	0	0.000		
	LT	1.00	43	1,600	0.027 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	72	1,600	0.045	N-S(1):	0.228
	TH	1.00	574	1,600	0.359 *	N-S(2):	0.413 *
	LT	0.00	0	0	0.000	E-W(1):	0.017
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.036 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.449
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	364	1,600	0.228	ITS:	0.000
	LT	1.00	87	1,600	0.054 *		
Eastbound	RT	1.00	71	1,600	0.017	ICU:	0.549
	TH	0.00	0	0	0.000		
	LT	1.00	58	1,600	0.036 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **12 Catalina Ave & Gertruda Ave**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	53	0	0.000	N-S(1):	0.171
	TH	2.00	266	3,200	0.100 *	N-S(2):	0.256 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.018
Westbound	RT	0.00	15	0	0.000	E-W(2):	0.028 *
	TH	1.00	3	1,600	0.020 *		
	LT	0.00	14	1,600	0.009	V/C:	0.284
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	514	3,200	0.167	ITS:	0.000
	LT	1.00	249	1,600	0.156 *		
Eastbound	RT	1.00	129	1,600	0.003	ICU:	0.384
	TH	1.00	2	1,600	0.009		
	LT	0.00	13	1,600	0.008 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	69	0	0.000	N-S(1):	0.122
	TH	2.00	707	3,200	0.243 *	N-S(2):	0.339 *
	LT	1.00	5	1,600	0.003	E-W(1):	0.149 *
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.044
	TH	1.00	4	1,600	0.013		
	LT	0.00	6	1,600	0.004 *	V/C:	0.488
Northbound	RT	0.00	7	0	0.000	Lost Time:	0.100
	TH	2.00	373	3,200	0.119	ITS:	0.000
	LT	1.00	153	1,600	0.096 *		
Eastbound	RT	1.00	309	1,600	0.145 *	ICU:	0.588
	TH	1.00	2	1,600	0.033		
	LT	0.00	50	1,600	0.031	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **15 Harbor Dr & Portofino Way/Beryl St**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	NBR, WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	46	1,600	0.014	N-S(1):	0.158 *
	TH	1.00	177	1,600	0.111	N-S(2):	0.115
	LT	1.00	35	1,600	0.022 *	E-W(1):	0.107
Westbound	RT	1.00	138	1,600	0.064	E-W(2):	0.108 *
	TH	1.00	126	1,600	0.079 *		
	LT	1.00	70	1,600	0.044	V/C:	0.266
Northbound	RT	0.00	49	0	0.000	Lost Time:	0.100
	TH	1.00	168	1,600	0.136 *	ITS:	0.000
	LT	1.00	7	1,600	0.004		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.366
	TH	1.00	95	1,600	0.063		
	LT	1.00	46	1,600	0.029 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	117	1,600	0.045	N-S(1):	0.295 *
	TH	1.00	444	1,600	0.278	N-S(2):	0.285
	LT	1.00	82	1,600	0.051 *	E-W(1):	0.255 *
Westbound	RT	1.00	145	1,600	0.039	E-W(2):	0.225
	TH	1.00	268	1,600	0.168		
	LT	1.00	182	1,600	0.114 *	V/C:	0.550
Northbound	RT	0.00	125	0	0.000	Lost Time:	0.100
	TH	1.00	266	1,600	0.244 *	ITS:	0.000
	LT	1.00	11	1,600	0.007		
Eastbound	RT	0.00	24	0	0.000	ICU:	0.650
	TH	1.00	201	1,600	0.141 *		
	LT	1.00	91	1,600	0.057	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **16 Catalina Ave & Beryl St**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	93	0	0.000	N-S(1):	0.198 *
	TH	2.00	239	3,200	0.104	N-S(2):	0.167
	LT	0.00	0	0	0.000 *	E-W(1):	0.058
Westbound	RT	1.00	7	1,600	0.004	E-W(2):	0.104 *
	TH	1.00	121	1,600	0.076 *		
	LT	1.00	29	1,600	0.018	V/C:	0.302
Northbound	RT	0.00	42	0	0.000	Lost Time:	0.100
	TH	2.00	592	3,200	0.198 *	ITS:	0.000
	LT	2.00	181	2,880	0.063		
Eastbound	RT	1.00	34	1,600	0.000	ICU:	0.402
	TH	1.00	64	1,600	0.040		
	LT	1.00	45	1,600	0.028 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	227	0	0.000	N-S(1):	0.137
	TH	2.00	625	3,200	0.267 *	N-S(2):	0.311 *
	LT	0.00	3	1,600	0.002	E-W(1):	0.154
Westbound	RT	1.00	19	1,600	0.011	E-W(2):	0.199 *
	TH	1.00	234	1,600	0.146 *		
	LT	1.00	48	1,600	0.030	V/C:	0.510
Northbound	RT	0.00	61	0	0.000	Lost Time:	0.100
	TH	2.00	371	3,200	0.135	ITS:	0.000
	LT	2.00	128	2,880	0.044 *		
Eastbound	RT	1.00	122	1,600	0.032	ICU:	0.610
	TH	1.00	198	1,600	0.124		
	LT	1.00	85	1,600	0.053 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **19 Pacific Coast Hwy & Beryl St**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	25	0	0.000	N-S(1):	0.542 *
	TH	2.00	1,035	3,200	0.331	N-S(2):	0.359
	LT	1.00	19	1,600	0.012 *	E-W(1):	0.125 *
Westbound	RT	1.00	28	1,600	0.012	E-W(2):	0.085
	TH	1.00	106	1,600	0.066		
	LT	1.00	51	1,600	0.032 *	V/C:	0.667
Northbound	RT	0.00	45	0	0.000	Lost Time:	0.100
	TH	2.00	1,652	3,200	0.530 *	ITS:	0.000
	LT	1.00	44	1,600	0.028		
Eastbound	RT	0.00	27	0	0.000	ICU:	0.767
	TH	1.00	121	1,600	0.093 *		
	LT	1.00	31	1,600	0.019	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	65	0	0.000	N-S(1):	0.418
	TH	2.00	1,883	3,200	0.609 *	N-S(2):	0.640 *
	LT	1.00	41	1,600	0.026	E-W(1):	0.189 *
Westbound	RT	1.00	41	1,600	0.013	E-W(2):	0.185
	TH	1.00	211	1,600	0.132		
	LT	1.00	60	1,600	0.038 *	V/C:	0.829
Northbound	RT	0.00	46	0	0.000	Lost Time:	0.100
	TH	2.00	1,209	3,200	0.392	ITS:	0.000
	LT	1.00	49	1,600	0.031 *		
Eastbound	RT	0.00	62	0	0.000	ICU:	0.929
	TH	1.00	180	1,600	0.151 *		
	LT	1.00	84	1,600	0.053	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **21 Catalina Ave & Carnelian St**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	0	1,600	0.000	N-S(1):	0.272 *
	TH	2.00	242	3,200	0.076	N-S(2):	0.079
	LT	1.00	21	1,600	0.013 *	E-W(1):	0.023
Westbound	RT	0.00	35	0	0.000	E-W(2):	0.038 *
	TH	1.00	1	1,600	0.034 *		
	LT	0.00	19	1,600	0.012	V/C:	0.310
Northbound	RT	1.00	22	1,600	0.008	Lost Time:	0.100
	TH	2.00	829	3,200	0.259 *	ITS:	0.000
	LT	1.00	4	1,600	0.003		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.410
	TH	1.00	4	1,600	0.011		
	LT	0.00	7	1,600	0.004 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	5	1,600	0.003	N-S(1):	0.252 *
	TH	2.00	761	3,200	0.238	N-S(2):	0.243
	LT	1.00	90	1,600	0.056 *	E-W(1):	0.027
Westbound	RT	0.00	40	0	0.000	E-W(2):	0.052 *
	TH	1.00	8	1,600	0.051 *		
	LT	0.00	33	1,600	0.021	V/C:	0.304
Northbound	RT	1.00	41	1,600	0.015	Lost Time:	0.100
	TH	2.00	627	3,200	0.196 *	ITS:	0.000
	LT	1.00	8	1,600	0.005		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.404
	TH	1.00	4	1,600	0.006		
	LT	0.00	1	1,600	0.001 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **22 Catalina Ave & Diamond St**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	4	1,600	0.000	N-S(1):	0.259 *
	TH	2.00	233	3,200	0.073	N-S(2):	0.074
	LT	1.00	26	1,600	0.016 *	E-W(1):	0.042
Westbound	RT	0.00	52	0	0.000	E-W(2):	0.044 *
	TH	1.00	1	1,600	0.033 *		
	LT	1.00	35	1,600	0.022	V/C:	0.303
Northbound	RT	1.00	67	1,600	0.031	Lost Time:	0.100
	TH	2.00	776	3,200	0.243 *	ITS:	0.000
	LT	1.00	2	1,600	0.001		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.403
	TH	1.00	9	1,600	0.020		
	LT	0.00	17	1,600	0.011 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.005	N-S(1):	0.228
	TH	2.00	726	3,200	0.227 *	N-S(2):	0.233 *
	LT	1.00	57	1,600	0.036	E-W(1):	0.045 *
Westbound	RT	0.00	57	0	0.000	E-W(2):	0.041
	TH	1.00	4	1,600	0.038		
	LT	1.00	63	1,600	0.039 *	V/C:	0.278
Northbound	RT	1.00	67	1,600	0.022	Lost Time:	0.100
	TH	2.00	615	3,200	0.192	ITS:	0.000
	LT	1.00	10	1,600	0.006 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.378
	TH	1.00	2	1,600	0.006 *		
	LT	0.00	4	1,600	0.003	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **23 Catalina Ave & Emerald St**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	6	1,600	0.000	N-S(1):	0.258 *
	TH	2.00	245	3,200	0.077	N-S(2):	0.081
	LT	1.00	17	1,600	0.011 *	E-W(1):	0.065
Westbound	RT	0.00	33	0	0.000	E-W(2):	0.069 *
	TH	1.00	4	1,600	0.033 *		
	LT	0.00	15	1,600	0.009	V/C:	0.327
Northbound	RT	0.00	27	0	0.000	Lost Time:	0.100
	TH	2.00	762	3,200	0.247 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.00	24	0	0.000	ICU:	0.427
	TH	1.00	9	1,600	0.056		
	LT	0.00	57	1,600	0.036 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	28	1,600	0.009	N-S(1):	0.226
	TH	2.00	722	3,200	0.226 *	N-S(2):	0.238 *
	LT	1.00	39	1,600	0.024	E-W(1):	0.045
Westbound	RT	0.00	30	0	0.000	E-W(2):	0.054 *
	TH	1.00	6	1,600	0.038 *		
	LT	0.00	24	1,600	0.015	V/C:	0.292
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	626	3,200	0.202	ITS:	0.000
	LT	1.00	19	1,600	0.012 *		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.392
	TH	1.00	6	1,600	0.030		
	LT	0.00	26	1,600	0.016 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **24 Pacific Coast Hwy & Garnet St**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	8	0	0.000	N-S(1):	0.547 *
	TH	2.00	922	3,200	0.291	N-S(2):	0.291
	LT	0.00	1	1,600	0.001 *	E-W(1):	0.017
Westbound	RT	0.00	46	0	0.000	E-W(2):	0.046 *
	TH	1.00	18	1,600	0.040 *		
	LT	1.00	3	1,600	0.002	V/C:	0.593
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	1,737	3,200	0.546 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.693
	TH	1.00	5	1,600	0.015		
	LT	1.00	9	1,600	0.006 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	30	0	0.000	N-S(1):	0.418
	TH	2.00	1,639	3,200	0.523 *	N-S(2):	0.523 *
	LT	0.00	4	1,600	0.003	E-W(1):	0.032
Westbound	RT	0.00	41	0	0.000	E-W(2):	0.043 *
	TH	1.00	16	1,600	0.036 *		
	LT	1.00	13	1,600	0.008	V/C:	0.566
Northbound	RT	0.00	43	0	0.000	Lost Time:	0.100
	TH	2.00	1,286	3,200	0.415	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.666
	TH	1.00	16	1,600	0.024		
	LT	1.00	11	1,600	0.007 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **25 Catalina Ave & Torrance Blvd**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	69	1,600	0.032	N-S(1):	0.246 *
	TH	2.00	172	3,200	0.054	N-S(2):	0.067
	LT	1.00	82	1,600	0.051 *	E-W(1):	0.104 *
Westbound	RT	1.00	54	1,600	0.000	E-W(2):	0.085
	TH	2.00	203	3,200	0.063		
	LT	1.00	78	1,600	0.049 *	V/C:	0.350
Northbound	RT	1.00	156	1,600	0.073	Lost Time:	0.100
	TH	2.00	623	3,200	0.195 *	ITS:	0.000
	LT	1.00	20	1,600	0.013		
Eastbound	RT	1.00	98	1,600	0.055 *	ICU:	0.450
	TH	2.00	92	3,200	0.029		
	LT	1.00	35	1,600	0.022	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	129	1,600	0.059	N-S(1):	0.227 *
	TH	2.00	533	3,200	0.167	N-S(2):	0.199
	LT	1.00	129	1,600	0.081 *	E-W(1):	0.189 *
Westbound	RT	1.00	80	1,600	0.000	E-W(2):	0.158
	TH	2.00	366	3,200	0.114		
	LT	1.00	99	1,600	0.062 *	V/C:	0.416
Northbound	RT	1.00	98	1,600	0.030	Lost Time:	0.100
	TH	2.00	466	3,200	0.146 *	ITS:	0.000
	LT	1.00	51	1,600	0.032		
Eastbound	RT	1.00	229	1,600	0.127 *	ICU:	0.516
	TH	2.00	263	3,200	0.082		
	LT	1.00	70	1,600	0.044	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **26 Pacific Coast Hwy & Torrance Blvd**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.542 *
	TH	2.00	862	3,200	0.276	N-S(2):	0.317
	LT	1.00	228	1,600	0.143 *	E-W(1):	0.187 *
Westbound	RT	1.00	227	1,600	0.071	E-W(2):	0.138
	TH	2.00	349	3,200	0.109		
	LT	1.00	122	1,600	0.076 *	V/C:	0.729
Northbound	RT	0.00	66	0	0.000	Lost Time:	0.100
	TH	2.00	1,212	3,200	0.399 *	ITS:	0.000
	LT	1.00	66	1,600	0.041		
Eastbound	RT	0.00	55	0	0.000	ICU:	0.829
	TH	2.00	300	3,200	0.111 *		
	LT	1.00	46	1,600	0.029	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	39	0	0.000	N-S(1):	0.519
	TH	2.00	1,418	3,200	0.455 *	N-S(2):	0.528 *
	LT	1.00	309	1,600	0.193	E-W(1):	0.253 *
Westbound	RT	1.00	301	1,600	0.092	E-W(2):	0.189
	TH	2.00	464	3,200	0.145		
	LT	1.00	156	1,600	0.098 *	V/C:	0.781
Northbound	RT	0.00	89	0	0.000	Lost Time:	0.100
	TH	2.00	954	3,200	0.326	ITS:	0.000
	LT	1.00	117	1,600	0.073 *		
Eastbound	RT	0.00	104	0	0.000	ICU:	0.881
	TH	2.00	393	3,200	0.155 *		
	LT	1.00	71	1,600	0.044	LOS:	D

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **27 Helberta Ave/Camino Real & Torrance Blvd**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	16	0	0.000	N-S(1):	0.155 *
	TH	1.00	63	1,600	0.063 *	N-S(2):	0.000
	LT	0.00	21	1,600	0.013	E-W(1):	0.227 *
Westbound	RT	0.00	25	0	0.000	E-W(2):	0.200
	TH	2.00	572	3,200	0.187		
	LT	1.00	29	1,600	0.018 *	V/C:	0.382
Northbound	RT	0.00	37	0	0.000	Lost Time:	0.100
	TH	0.60	42	954	0.083	ITS:	0.000
	LT	1.40	186	2,021	0.092 *		
Eastbound	RT	0.00	115	0	0.000	ICU:	0.482
	TH	2.00	555	3,200	0.209 *		
	LT	1.00	20	1,600	0.013	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	11	0	0.000	N-S(1):	0.136 *
	TH	1.00	28	1,600	0.036 *	N-S(2):	0.000
	LT	0.00	19	1,600	0.012	E-W(1):	0.296 *
Westbound	RT	0.00	16	0	0.000	E-W(2):	0.225
	TH	2.00	683	3,200	0.218		
	LT	1.00	45	1,600	0.028 *	V/C:	0.432
Northbound	RT	0.00	28	0	0.000	Lost Time:	0.100
	TH	0.40	30	647	0.090	ITS:	0.000
	LT	1.60	229	2,298	0.100 *		
Eastbound	RT	0.00	166	0	0.000	ICU:	0.532
	TH	2.00	691	3,200	0.268 *		
	LT	1.00	11	1,600	0.007	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **28 Prospect Ave & Torrance Blvd**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	65	0	0.000	N-S(1):	0.421 *
	TH	2.00	586	3,200	0.203	N-S(2):	0.237
	LT	1.00	198	1,600	0.124 *	E-W(1):	0.273
Westbound	RT	0.00	168	0	0.000	E-W(2):	0.302 *
	TH	2.00	586	3,200	0.236 *		
	LT	1.00	154	1,600	0.096	V/C:	0.723
Northbound	RT	0.00	241	0	0.000	Lost Time:	0.100
	TH	2.00	708	3,200	0.297 *	ITS:	0.000
	LT	1.00	54	1,600	0.034		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.823
	TH	2.00	544	3,200	0.177		
	LT	1.00	106	1,600	0.066 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	132	0	0.000	N-S(1):	0.325 *
	TH	2.00	742	3,200	0.273	N-S(2):	0.301
	LT	1.00	207	1,600	0.129 *	E-W(1):	0.315
Westbound	RT	0.00	168	0	0.000	E-W(2):	0.326 *
	TH	2.00	688	3,200	0.268 *		
	LT	1.00	170	1,600	0.106	V/C:	0.651
Northbound	RT	0.00	112	0	0.000	Lost Time:	0.100
	TH	2.00	516	3,200	0.196 *	ITS:	0.000
	LT	1.00	45	1,600	0.028		
Eastbound	RT	0.00	43	0	0.000	ICU:	0.751
	TH	2.00	625	3,200	0.209		
	LT	1.00	92	1,600	0.058 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **29 Catalina Ave & Pearl St**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	142	1,600	0.049	N-S(1):	0.197 *
	TH	2.00	195	3,200	0.063	N-S(2):	0.067
	LT	0.00	5	1,600	0.003 *	E-W(1):	0.094 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	12	1,600	0.015 *		
	LT	0.00	0	0	0.000	V/C:	0.291
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	604	3,200	0.194 *	ITS:	0.000
	LT	0.00	7	1,600	0.004		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.391
	TH	0.15	12	240	0.071		
	LT	1.85	210	2,664	0.079 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	280	1,600	0.133	N-S(1):	0.143
	TH	2.00	541	3,200	0.178 *	N-S(2):	0.180 *
	LT	0.00	30	1,600	0.019	E-W(1):	0.100 *
Westbound	RT	0.00	13	0	0.000	E-W(2):	0.000
	TH	1.00	9	1,600	0.016 *		
	LT	0.00	4	1,600	0.003	V/C:	0.280
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	386	3,200	0.124	ITS:	0.000
	LT	0.00	3	1,600	0.002 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.380
	TH	0.11	10	173	0.075		
	LT	1.89	228	2,725	0.084 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **31 Pacific Coast Hwy & Sapphire St/Francisca Ave**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	5	0	0.000	N-S(1):	0.475 *
	TH	2.00	904	3,200	0.284	N-S(2):	0.296
	LT	1.00	26	1,600	0.016 *	E-W(1):	0.045 *
Westbound	RT	0.00	19	0	0.000	E-W(2):	0.030
	TH	1.00	10	1,600	0.021		
	LT	0.00	5	1,600	0.003 *	V/C:	0.520
Northbound	RT	0.00	37	0	0.000	Lost Time:	0.100
	TH	2.00	1,431	3,200	0.459 *	ITS:	0.000
	LT	1.00	19	1,600	0.012		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.620
	TH	1.00	36	1,600	0.042 *		
	LT	0.00	15	1,600	0.009	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	7	0	0.000	N-S(1):	0.378
	TH	2.00	1,518	3,200	0.477 *	N-S(2):	0.491 *
	LT	1.00	34	1,600	0.021	E-W(1):	0.073 *
Westbound	RT	0.00	21	0	0.000	E-W(2):	0.047
	TH	1.00	11	1,600	0.023		
	LT	0.00	5	1,600	0.003 *	V/C:	0.564
Northbound	RT	0.00	27	0	0.000	Lost Time:	0.100
	TH	2.00	1,116	3,200	0.357	ITS:	0.000
	LT	1.00	22	1,600	0.014 *		
Eastbound	RT	0.00	36	0	0.000	ICU:	0.664
	TH	1.00	37	1,600	0.070 *		
	LT	0.00	39	1,600	0.024	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **34 Pacific Coast Hwy & Knob Hill Ave**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	32	0	0.000	N-S(1):	0.461 *
	TH	2.00	859	3,200	0.278	N-S(2):	0.294
	LT	1.00	51	1,600	0.032 *	E-W(1):	0.084
Westbound	RT	0.00	58	0	0.000	E-W(2):	0.102 *
	TH	1.00	51	1,600	0.068 *		
	LT	1.00	54	1,600	0.034	V/C:	0.563
Northbound	RT	0.00	35	0	0.000	Lost Time:	0.100
	TH	2.00	1,339	3,200	0.429 *	ITS:	0.000
	LT	1.00	25	1,600	0.016		
Eastbound	RT	1.00	30	1,600	0.011	ICU:	0.663
	TH	1.00	80	1,600	0.050		
	LT	1.00	55	1,600	0.034 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	29	0	0.000	N-S(1):	0.407
	TH	2.00	1,361	3,200	0.434 *	N-S(2):	0.467 *
	LT	1.00	62	1,600	0.039	E-W(1):	0.109
Westbound	RT	0.00	58	0	0.000	E-W(2):	0.145 *
	TH	1.00	127	1,600	0.116 *		
	LT	1.00	83	1,600	0.052	V/C:	0.612
Northbound	RT	0.00	70	0	0.000	Lost Time:	0.100
	TH	2.00	1,108	3,200	0.368	ITS:	0.000
	LT	1.00	52	1,600	0.033 *		
Eastbound	RT	1.00	65	1,600	0.024	ICU:	0.712
	TH	1.00	91	1,600	0.057		
	LT	1.00	47	1,600	0.029 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **35 Harbor Dr & Pacific Avenue**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.092 *
	TH	1.00	138	1,600	0.086	N-S(2):	0.086
	LT	1.00	21	1,600	0.013 *	E-W(1):	0.000
Westbound	RT	1.00	129	1,600	0.081 *	E-W(2):	0.081 *
	TH	1.00	5	1,600	0.003		
	LT	0.00	0	0	0.000	V/C:	0.173
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	127	1,600	0.079 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.273
	TH	1.00	0	1,600	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.165
	TH	1.00	325	1,600	0.203 *	N-S(2):	0.203 *
	LT	1.00	80	1,600	0.050	E-W(1):	0.000
Westbound	RT	1.00	152	1,600	0.095 *	E-W(2):	0.095 *
	TH	1.00	11	1,600	0.007		
	LT	0.00	0	0	0.000	V/C:	0.298
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	184	1,600	0.115	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.398
	TH	1.00	0	1,600	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **36 Pacific Coast Hwy & Palos Verdes Blvd**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	261	0	0.000	N-S(1):	0.310
	TH	2.00	555	3,200	0.255 *	N-S(2):	0.355 *
	LT	1.00	62	1,600	0.039	E-W(1):	0.252
Westbound	RT	0.00	98	0	0.000	E-W(2):	0.405 *
	TH	2.00	372	3,200	0.147 *		
	LT	1.00	58	1,600	0.036	V/C:	0.760
Northbound	RT	1.00	79	1,600	0.031	Lost Time:	0.100
	TH	2.00	866	3,200	0.271	ITS:	0.000
	LT	1.00	160	1,600	0.100 *		
Eastbound	RT	0.00	157	0	0.000	ICU:	0.860
	TH	2.00	534	3,200	0.216		
	LT	1.00	413	1,600	0.258 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	356	0	0.000	N-S(1):	0.344
	TH	2.00	969	3,200	0.414 *	N-S(2):	0.553 *
	LT	1.00	85	1,600	0.053	E-W(1):	0.237
Westbound	RT	0.00	135	0	0.000	E-W(2):	0.325 *
	TH	2.00	464	3,200	0.187 *		
	LT	1.00	89	1,600	0.056	V/C:	0.878
Northbound	RT	1.00	76	1,600	0.020	Lost Time:	0.100
	TH	2.00	932	3,200	0.291	ITS:	0.000
	LT	1.00	223	1,600	0.139 *		
Eastbound	RT	0.00	188	0	0.000	ICU:	0.978
	TH	2.00	390	3,200	0.181		
	LT	1.00	221	1,600	0.138 *	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **37 Pacific Coast Hwy & 2nd St**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	34	0	0.000	N-S(1):	0.498 *
	TH	3.00	1,096	4,800	0.235	N-S(2):	0.241
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.104 *
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.000
	TH	1.00	2	1,600	0.021 *		
	LT	0.00	11	1,600	0.007	V/C:	0.602
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	3.00	2,386	4,800	0.498 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.32	42	509	0.079	ICU:	0.702
	TH	0.00	0	0	0.000		
	LT	0.68	90	1,091	0.083 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	71	0	0.000	N-S(1):	0.330
	TH	3.00	2,268	4,800	0.487 *	N-S(2):	0.513 *
	LT	1.00	1	1,600	0.001	E-W(1):	0.102 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	4	1,600	0.019 *		
	LT	0.00	14	1,600	0.009	V/C:	0.615
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,574	4,800	0.329	ITS:	0.000
	LT	1.00	41	1,600	0.026 *		
Eastbound	RT	0.32	42	509	0.070	ICU:	0.715
	TH	0.00	0	0	0.000		
	LT	0.68	90	1,091	0.083 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **38 Pacific Coast Hwy & 10th/Aviation**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.504 *
	TH	3.00	695	4,800	0.145	N-S(2):	0.151
	LT	1.00	139	1,600	0.087 *	E-W(1):	0.179 *
Westbound	RT	1.00	155	1,600	0.010	E-W(2):	0.161
	TH	0.01	3	19	0.161		
	LT	1.99	511	2,863	0.178 *	V/C:	0.683
Northbound	RT	1.00	661	1,600	0.324	Lost Time:	0.100
	TH	3.00	2,002	4,800	0.417 *	ITS:	0.000
	LT	1.00	9	1,600	0.006		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.783
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.386
	TH	3.00	1,906	4,800	0.397 *	N-S(2):	0.405 *
	LT	1.00	222	1,600	0.139	E-W(1):	0.257 *
Westbound	RT	1.00	218	1,600	0.000	E-W(2):	0.231
	TH	0.03	10	43	0.231		
	LT	1.97	728	2,841	0.256 *	V/C:	0.662
Northbound	RT	1.00	518	1,600	0.196	Lost Time:	0.100
	TH	3.00	1,185	4,800	0.247	ITS:	0.000
	LT	1.00	13	1,600	0.008 *		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.762
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **39 Pacific Coast Hwy & Pier/14th St**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	62	0	0.000	N-S(1):	0.386 *
	TH	3.00	682	4,800	0.155	N-S(2):	0.219
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.085 *
Westbound	RT	1.00	6	1,600	0.004 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	V/C:	0.471
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,852	4,800	0.386 *	ITS:	0.000
	LT	2.00	183	2,880	0.064		
Eastbound	RT	1.00	168	1,600	0.041	ICU:	0.571
	TH	0.00	0	0	0.000		
	LT	2.00	232	2,880	0.081 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	147	0	0.000	N-S(1):	0.240
	TH	3.00	1,898	4,800	0.426 *	N-S(2):	0.537 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.086 *
Westbound	RT	1.00	12	1,600	0.006 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001	V/C:	0.623
Northbound	RT	0.00	6	0	0.000	Lost Time:	0.100
	TH	3.00	1,126	4,800	0.236	ITS:	0.000
	LT	2.00	320	2,880	0.111 *		
Eastbound	RT	1.00	245	1,600	0.042	ICU:	0.723
	TH	0.00	0	0	0.000		
	LT	2.00	230	2,880	0.080 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **40 Pacific Coast Hwy & 16th St**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	146	1,600	0.068	N-S(1):	0.353 *
	TH	3.00	908	4,800	0.189	N-S(2):	0.238
	LT	1.00	15	1,600	0.009 *	E-W(1):	0.079 *
Westbound	RT	0.48	24	768	0.027	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.52	26	832	0.031 *	V/C:	0.432
Northbound	RT	0.00	47	0	0.000	Lost Time:	0.100
	TH	3.00	1,606	4,800	0.344 *	ITS:	0.000
	LT	1.00	79	1,600	0.049		
Eastbound	RT	1.00	62	1,600	0.014	ICU:	0.532
	TH	0.00	0	0	0.000		
	LT	1.00	76	1,600	0.048 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	203	1,600	0.092	N-S(1):	0.256
	TH	3.00	1,970	4,800	0.410 *	N-S(2):	0.474 *
	LT	1.00	3	1,600	0.002	E-W(1):	0.081 *
Westbound	RT	0.16	3	253	0.011	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.84	16	1,347	0.012 *	V/C:	0.555
Northbound	RT	0.00	24	0	0.000	Lost Time:	0.100
	TH	3.00	1,196	4,800	0.254	ITS:	0.000
	LT	1.00	102	1,600	0.064 *		
Eastbound	RT	1.00	85	1,600	0.021	ICU:	0.655
	TH	0.00	0	0	0.000		
	LT	1.00	111	1,600	0.069 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **41 Pacific Coast Hwy & Prospect Ave**
Description: **Existing Plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	67	1,600	0.020	N-S(1):	0.184 *
	TH	1.00	6	1,600	0.152 *	N-S(2):	0.000
	LT	0.00	237	1,600	0.148	E-W(1):	0.238
Westbound	RT	0.00	212	0	0.000	E-W(2):	0.427 *
	TH	2.00	1,018	3,200	0.384 *		
	LT	1.00	4	1,600	0.003	V/C:	0.611
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	1.00	34	1,600	0.032 *	ITS:	0.000
	LT	0.00	8	1,600	0.005		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.711
	TH	2.00	753	3,200	0.235		
	LT	1.00	69	1,600	0.043 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	88	1,600	0.038	N-S(1):	0.207 *
	TH	1.00	15	1,600	0.178 *	N-S(2):	0.000
	LT	0.00	269	1,600	0.168	E-W(1):	0.349
Westbound	RT	0.00	215	0	0.000	E-W(2):	0.486 *
	TH	2.00	1,231	3,200	0.452 *		
	LT	1.00	13	1,600	0.008	V/C:	0.693
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	1.00	21	1,600	0.029 *	ITS:	0.000
	LT	0.00	5	1,600	0.003		
Eastbound	RT	0.00	8	0	0.000	ICU:	0.793
	TH	2.00	1,082	3,200	0.341		
	LT	1.00	54	1,600	0.034 *	LOS:	C

* - Denotes critical movement

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	6	12	5	0	27	8	26	0	51	510	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	13	5	0	29	9	28	0	55	554	83
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.3	9.5	12.5
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	17%	0%	26%	44%	41%	0%
Vol Thru, %	83%	77%	52%	13%	59%	98%
Vol Right, %	0%	23%	22%	43%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	306	331	23	61	174	105
LT Vol	255	255	12	8	103	103
Through Vol	0	76	5	26	0	2
RT Vol	51	0	6	27	71	0
Lane Flow Rate	333	360	25	66	189	114
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.478	0.493	0.041	0.106	0.297	0.172
Departure Headway (Hd)	5.173	4.928	5.953	5.767	5.676	5.456
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	695	727	596	617	630	653
Service Time	2.926	2.68	4.047	3.849	3.445	3.225
HCM Lane V/C Ratio	0.479	0.495	0.042	0.107	0.3	0.175
HCM Control Delay	12.6	12.4	9.3	9.5	10.9	9.4
HCM Lane LOS	B	B	A	A	B	A
HCM 95th-tile Q	2.6	2.8	0.1	0.4	1.2	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	71	205	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	77	223	2
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.3
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	22	104	21	0	12	34	12	0	12	48	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	24	113	23	0	13	37	13	0	13	52	67
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.6	8	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	15%	21%	38%
Vol Thru, %	39%	71%	59%	47%
Vol Right, %	51%	14%	21%	16%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	122	147	58	96
LT Vol	48	104	34	45
Through Vol	62	21	12	15
RT Vol	12	22	12	36
Lane Flow Rate	133	160	63	104
Geometry Grp	1	1	1	1
Degree of Util (X)	0.158	0.199	0.08	0.133
Departure Headway (Hd)	4.288	4.488	4.573	4.579
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	837	801	783	784
Service Time	2.312	2.512	2.602	2.604
HCM Lane V/C Ratio	0.159	0.2	0.08	0.133
HCM Control Delay	8.1	8.6	8	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.7	0.3	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	36	45	15
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	39	49	16
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.3
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	82	121	62	0	15	48	25	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	89	132	67	0	16	52	27	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9.9	8.3
HCM LOS	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	17%	10%
Vol Thru, %	46%	55%	77%
Vol Right, %	23%	28%	14%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	265	88	176
LT Vol	121	48	135
Through Vol	62	25	24
RT Vol	82	15	17
Lane Flow Rate	288	96	191
Geometry Grp	1	1	1
Degree of Util (X)	0.355	0.122	0.252
Departure Headway (Hd)	4.437	4.589	4.737
Convergence, Y/N	Yes	Yes	Yes
Cap	809	780	758
Service Time	2.467	2.627	2.773
HCM Lane V/C Ratio	0.356	0.123	0.252
HCM Control Delay	9.9	8.3	9.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.6	0.4	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	17	135	24
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	18	147	26
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.4
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	22	185	414	54	68	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	201	450	59	74	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	509	0	-	0	728	479
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	249	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1056	-	-	-	390	587
Stage 1	-	-	-	-	623	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1056	-	-	-	381	587
Mov Cap-2 Maneuver	-	-	-	-	381	-
Stage 1	-	-	-	-	623	-
Stage 2	-	-	-	-	774	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	16.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1056	-	-	-	407
HCM Lane V/C Ratio	0.023	-	-	-	0.222
HCM Control Delay (s)	8.5	-	-	-	16.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

Intersection	
Intersection Delay, s/veh	18.2
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	215	45	0	47	283	0	0	163	0	59
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	234	49	0	51	308	0	0	177	0	64
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	17.1	21.5	20.2
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	73%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	27%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	222	215	45	47	283	137	88	22
LT Vol	0	215	0	0	283	0	88	0
Through Vol	59	0	45	0	0	0	0	22
RT Vol	163	0	0	47	0	137	0	0
Lane Flow Rate	241	234	49	51	308	149	96	24
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.543	0.506	0.096	0.114	0.645	0.33	0.199	0.045
Departure Headway (Hd)	8.096	7.796	7.078	8.063	7.551	7.989	7.476	6.758
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	444	460	504	443	477	448	478	527
Service Time	5.872	5.571	4.853	5.835	5.323	5.764	5.25	4.532
HCM Lane V/C Ratio	0.543	0.509	0.097	0.115	0.646	0.333	0.201	0.046
HCM Control Delay	20.2	18.4	10.6	11.9	23.1	14.7	12.1	9.9
HCM Lane LOS	C	C	B	B	C	B	B	A
HCM 95th-tile Q	3.2	2.8	0.3	0.4	4.5	1.4	0.7	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	137	88	22
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	149	96	24
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.3
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	2	0	1	5	3	35	23	745	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	1	5	3	38	25	810	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	915	1321	216	1102	1333	407	433	0	0
Stage 1	458	458	-	861	861	-	-	-	-
Stage 2	457	863	-	241	472	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	228	155	789	166	153	593	1123	-	-
Stage 1	552	565	-	317	371	-	-	-	-
Stage 2	553	370	-	741	557	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	202	148	789	160	146	593	1123	-	-
Mov Cap-2 Maneuver	202	148	-	160	146	-	-	-	-
Stage 1	540	551	-	310	363	-	-	-	-
Stage 2	501	362	-	722	543	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	18.5	15.5	0.2
HCM LOS	C	C	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1123	-	-	269	388	810	-	-
HCM Lane V/C Ratio	0.022	-	-	0.012	0.12	0.024	-	-
HCM Control Delay (s)	8.3	-	-	18.5	15.5	9.6	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0.4	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	18	372	26
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	20	404	28

Major/Minor	Major2		
Conflicting Flow All	813	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	810	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	810	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	0	1	1	1	108	1	648	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	1	1	1	117	1	704	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	778	1131	180	950	1130	353	360	0	0
Stage 1	423	423	-	707	707	-	-	-	-
Stage 2	355	708	-	243	423	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	286	202	832	215	202	643	1195	-	-
Stage 1	579	586	-	392	436	-	-	-	-
Stage 2	635	436	-	739	586	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	226	195	832	209	195	643	1195	-	-
Mov Cap-2 Maneuver	226	195	-	209	195	-	-	-	-
Stage 1	578	565	-	392	436	-	-	-	-
Stage 2	517	436	-	711	565	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	20	12.2	0
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1195	-	-	249	618	889	-	-
HCM Lane V/C Ratio	0.001	-	-	0.035	0.193	0.035	-	-
HCM Control Delay (s)	8	0	-	20	12.2	9.2	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	29	331	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	32	360	0

Major/Minor	Major2		
Conflicting Flow All	705	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	889	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	889	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.7
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	92	10	15	126	11	28	102	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	100	11	16	137	12	30	111	50

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	149	0	0	111	0	0	300	290	105
Stage 1	-	-	-	-	-	-	108	108	-
Stage 2	-	-	-	-	-	-	192	182	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1432	-	-	1479	-	-	652	620	949
Stage 1	-	-	-	-	-	-	897	806	-
Stage 2	-	-	-	-	-	-	810	749	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1432	-	-	1479	-	-	620	613	949
Mov Cap-2 Maneuver	-	-	-	-	-	-	620	613	-
Stage 1	-	-	-	-	-	-	896	805	-
Stage 2	-	-	-	-	-	-	767	741	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.7	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	677	1432	-	-	1479	-	-	616
HCM Lane V/C Ratio	0.283	0.001	-	-	0.011	-	-	0.056
HCM Control Delay (s)	12.4	7.5	-	-	7.5	-	-	11.2
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.2	0	-	-	0	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	2	28	2
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	2	30	2

Major/Minor	Minor2		
Conflicting Flow All	364	289	143
Stage 1	176	176	-
Stage 2	188	113	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	592	621	905
Stage 1	826	753	-
Stage 2	814	802	-
Platoon blocked, %			
Mov Cap-1 Maneuver	479	614	905
Mov Cap-2 Maneuver	479	614	-
Stage 1	825	745	-
Stage 2	664	801	-

Approach	SB
HCM Control Delay, s	11.2
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	132	18	52	147	17	9	13	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	143	20	57	160	18	10	14	58

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	178	0	0	163	0	0	460	459	153
Stage 1	-	-	-	-	-	-	168	168	-
Stage 2	-	-	-	-	-	-	292	291	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1398	-	-	1416	-	-	512	499	893
Stage 1	-	-	-	-	-	-	834	759	-
Stage 2	-	-	-	-	-	-	716	672	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1398	-	-	1416	-	-	479	476	893
Mov Cap-2 Maneuver	-	-	-	-	-	-	479	476	-
Stage 1	-	-	-	-	-	-	829	755	-
Stage 2	-	-	-	-	-	-	667	645	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	1.8	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	711	1398	-	-	1416	-	-	504
HCM Lane V/C Ratio	0.115	0.005	-	-	0.04	-	-	0.065
HCM Control Delay (s)	10.7	7.6	-	-	7.6	-	-	12.6
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	11	13	6
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	12	14	7

Major/Minor	Minor2		
Conflicting Flow All	486	460	169
Stage 1	282	282	-
Stage 2	204	178	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	492	498	875
Stage 1	725	678	-
Stage 2	798	752	-
Platoon blocked, %			
Mov Cap-1 Maneuver	434	475	875
Mov Cap-2 Maneuver	434	475	-
Stage 1	721	651	-
Stage 2	728	748	-

Approach	SB
HCM Control Delay, s	12.6
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	21	1	2	0	0	4	1	0	3	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	23	1	2	0	0	4	1	0	3	2	0
Number of Lanes	0	1	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	8	7.8	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	60%	100%	75%	0%	60%	0%
Vol Thru, %	40%	0%	8%	80%	40%	0%
Vol Right, %	0%	0%	17%	20%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	12	12	5	5	127
LT Vol	2	0	1	4	2	0
Through Vol	0	0	2	1	0	127
RT Vol	3	12	9	0	3	0
Lane Flow Rate	5	13	13	5	5	138
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.007	0.019	0.018	0.007	0.007	0.149
Departure Headway (Hd)	4.817	5.295	5.054	4.694	4.893	3.893
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	739	673	704	756	731	919
Service Time	2.87	3.054	2.813	2.763	2.623	1.622
HCM Lane V/C Ratio	0.007	0.019	0.018	0.007	0.007	0.15
HCM Control Delay	7.9	8.2	7.9	7.8	7.7	7.3
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0	0.1	0.1	0	0	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	2	127
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	2	138
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	7.3
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	14	16	47	0	4	14	24	0	29	264	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	17	51	0	4	15	26	0	32	287	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.5	8.3	9.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	18%	0%	18%	10%	4%	0%
Vol Thru, %	82%	97%	21%	33%	96%	94%
Vol Right, %	0%	3%	61%	57%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	161	136	77	42	92	94
LT Vol	132	132	16	14	88	88
Through Vol	0	4	47	24	0	6
RT Vol	29	0	14	4	4	0
Lane Flow Rate	175	148	84	46	100	102
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.249	0.206	0.113	0.062	0.144	0.145
Departure Headway (Hd)	5.127	5.015	4.852	4.916	5.175	5.108
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	700	714	737	725	692	701
Service Time	2.865	2.753	2.897	2.966	2.916	2.85
HCM Lane V/C Ratio	0.25	0.207	0.114	0.063	0.145	0.146
HCM Control Delay	9.6	9.1	8.5	8.3	8.8	8.7
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	1	0.8	0.4	0.2	0.5	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	4	176	6
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	191	7
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.7
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	76	22	0	127	84	0	24	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	83	24	0	138	91	0	26	107
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.1	9.4	8.6
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	60%	0%	0%	0%	100%
Vol Right, %	40%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	211	76	22	24	98
LT Vol	127	0	0	0	98
Through Vol	84	0	22	0	0
RT Vol	0	76	0	24	0
Lane Flow Rate	229	83	24	26	107
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.29	0.135	0.031	0.04	0.149
Departure Headway (Hd)	4.556	5.89	4.684	5.523	5.021
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	789	609	764	649	715
Service Time	2.577	3.622	2.415	3.247	2.745
HCM Lane V/C Ratio	0.29	0.136	0.031	0.04	0.15
HCM Control Delay	9.4	9.5	7.6	8.5	8.6
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	1.2	0.5	0.1	0.1	0.5

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	44	65	9	0	33	71	29	0	11	406	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	48	71	10	0	36	77	32	0	12	441	55
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	10.6	10.7	12.3
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	5%	0%	100%	0%	100%	0%	23%	0%
Vol Thru, %	95%	80%	0%	88%	0%	71%	77%	75%
Vol Right, %	0%	20%	0%	12%	0%	29%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	214	254	44	74	33	100	106	109
LT Vol	203	203	0	65	0	71	82	82
Through Vol	0	51	0	9	0	29	0	27
RT Vol	11	0	44	0	33	0	24	0
Lane Flow Rate	233	276	48	80	36	109	115	118
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.374	0.431	0.096	0.148	0.072	0.195	0.199	0.195
Departure Headway (Hd)	5.785	5.617	7.213	6.617	7.184	6.469	6.217	5.926
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	621	641	496	541	498	554	576	604
Service Time	3.519	3.351	4.962	4.367	4.933	4.218	3.962	3.671
HCM Lane V/C Ratio	0.375	0.431	0.097	0.148	0.072	0.197	0.2	0.195
HCM Control Delay	12	12.6	10.7	10.5	10.5	10.8	10.5	10.1
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.7	2.2	0.3	0.5	0.2	0.7	0.7	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	24	164	27
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	26	178	29
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.3
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	7	8	6	0	40	10	35	0	26	345	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	9	7	0	43	11	38	0	28	375	37
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.5	10	10.9
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	13%	0%	33%	47%	10%	0%
Vol Thru, %	87%	84%	38%	12%	90%	97%
Vol Right, %	0%	16%	29%	41%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	199	207	21	85	274	255
LT Vol	173	173	8	10	248	248
Through Vol	0	34	6	35	0	7
RT Vol	26	0	7	40	26	0
Lane Flow Rate	216	224	23	92	297	277
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.33	0.332	0.039	0.153	0.442	0.406
Departure Headway (Hd)	5.511	5.329	6.198	5.953	5.35	5.283
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	645	667	581	606	666	675
Service Time	3.306	3.124	4.203	3.955	3.14	3.072
HCM Lane V/C Ratio	0.335	0.336	0.04	0.152	0.446	0.41
HCM Control Delay	11	10.8	9.5	10	12.4	11.7
HCM Lane LOS	B	B	A	A	B	B
HCM 95th-tile Q	1.4	1.5	0.1	0.5	2.3	2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	26	495	7
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	28	538	8
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	12.1
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	6	81	2	0	29	84	44	0	11	144	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	88	2	0	32	91	48	0	12	157	105
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.1	9.6	10.1
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	7%	18%	39%
Vol Thru, %	57%	91%	54%	55%
Vol Right, %	38%	2%	28%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	252	89	157	150
LT Vol	144	81	84	82
Through Vol	97	2	44	10
RT Vol	11	6	29	58
Lane Flow Rate	274	97	171	163
Geometry Grp	1	1	1	1
Degree of Util (X)	0.349	0.139	0.235	0.225
Departure Headway (Hd)	4.588	5.191	4.958	4.968
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	778	684	718	717
Service Time	2.652	3.277	3.034	3.041
HCM Lane V/C Ratio	0.352	0.142	0.238	0.227
HCM Control Delay	10.1	9.1	9.6	9.5
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.6	0.5	0.9	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	58	82	10
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	63	89	11
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.5
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	22
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	70	100	54	0	36	121	91	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	76	109	59	0	39	132	99	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	13	13.3
HCM LOS	B	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	15%	9%
Vol Thru, %	45%	49%	81%
Vol Right, %	24%	37%	10%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	224	248	519
LT Vol	100	121	419
Through Vol	54	91	54
RT Vol	70	36	46
Lane Flow Rate	243	270	564
Geometry Grp	1	1	1
Degree of Util (X)	0.403	0.435	0.839
Departure Headway (Hd)	5.953	5.805	5.354
Convergence, Y/N	Yes	Yes	Yes
Cap	601	617	677
Service Time	4.023	3.874	3.406
HCM Lane V/C Ratio	0.404	0.438	0.833
HCM Control Delay	13	13.3	30.1
HCM Lane LOS	B	B	D
HCM 95th-tile Q	1.9	2.2	9.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	46	419	54
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	50	455	59
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	30.1
HCM LOS	D

Lane

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	21	296	415	283	78	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	322	451	308	85	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	759	0	-	0	972	605
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	367	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	852	-	-	-	280	498
Stage 1	-	-	-	-	545	-
Stage 2	-	-	-	-	701	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	852	-	-	-	272	498
Mov Cap-2 Maneuver	-	-	-	-	272	-
Stage 1	-	-	-	-	545	-
Stage 2	-	-	-	-	682	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	23.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	852	-	-	-	291
HCM Lane V/C Ratio	0.027	-	-	-	0.34
HCM Control Delay (s)	9.3	-	-	-	23.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.5

Intersection	
Intersection Delay, s/veh	50.5
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	303	69	0	34	468	0	0	207	0	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	329	75	0	37	509	0	0	225	0	47
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	48.6	75.3	42.4
HCM LOS	E	F	E

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	83%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	17%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	250	303	69	34	468	138	286	44
LT Vol	0	303	0	0	468	0	286	0
Through Vol	43	0	69	0	0	0	0	44
RT Vol	207	0	0	34	0	138	0	0
Lane Flow Rate	272	329	75	37	509	150	311	48
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.784	0.896	0.189	0.108	1	0.399	0.783	0.111
Departure Headway (Hd)	10.393	9.789	9.087	10.508	9.984	9.567	9.067	8.366
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	348	369	394	343	366	375	398	427
Service Time	8.181	7.577	6.875	8.208	7.684	7.343	6.843	6.142
HCM Lane V/C Ratio	0.782	0.892	0.19	0.108	1.391	0.4	0.781	0.112
HCM Control Delay	42.4	56.5	14	14.5	79.7	18.6	37.9	12.2
HCM Lane LOS	E	F	B	B	F	C	E	B
HCM 95th-tile Q	6.4	8.9	0.7	0.4	11.6	1.9	6.7	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	138	286	44
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	150	311	48
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	29.8
HCM LOS	D

Lane

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	10	0	2	0	3	60	19	460	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	2	0	3	65	21	500	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1439	1688	523	1165	1701	251	1046	0	0
Stage 1	1146	1146	-	542	542	-	-	-	-
Stage 2	293	542	-	623	1159	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	94	93	499	149	91	749	661	-	-
Stage 1	212	272	-	492	518	-	-	-	-
Stage 2	691	518	-	440	268	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	78	85	499	139	83	749	661	-	-
Mov Cap-2 Maneuver	78	85	-	139	83	-	-	-	-
Stage 1	205	257	-	476	502	-	-	-	-
Stage 2	607	502	-	415	254	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	51.1	12.6	0.4
HCM LOS	F	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	661	-	-	91	542	1059	-	-
HCM Lane V/C Ratio	0.031	-	-	0.143	0.126	0.053	-	-
HCM Control Delay (s)	10.6	-	-	51.1	12.6	8.6	-	-
HCM Lane LOS	B	-	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.4	0.2	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	52	939	23
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	57	1021	25

Major/Minor	Major2		
Conflicting Flow All	501	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1059	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1059	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	6	0	3	0	0	42	1	439	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	3	0	0	46	1	477	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1286	1528	479	1047	1526	240	958	0	0
Stage 1	1045	1045	-	481	481	-	-	-	-
Stage 2	241	483	-	566	1045	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	122	116	533	182	117	761	714	-	-
Stage 1	245	304	-	535	552	-	-	-	-
Stage 2	741	551	-	476	304	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	111	111	533	175	112	761	714	-	-
Mov Cap-2 Maneuver	111	111	-	175	112	-	-	-	-
Stage 1	245	292	-	534	551	-	-	-	-
Stage 2	695	550	-	454	292	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	30.5	10	0
HCM LOS	D	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	714	-	-	151	761	1079	-	-
HCM Lane V/C Ratio	0.002	-	-	0.065	0.06	0.04	-	-
HCM Control Delay (s)	10.1	0	-	30.5	10	8.5	-	-
HCM Lane LOS	B	A	-	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	40	881	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	43	958	0

Major/Minor	Major2		
Conflicting Flow All	480	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1079	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1079	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	5	230	22	37	256	7	37	5	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	250	24	40	278	8	40	5	59

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	286	0	0	274	0	0	641	639	262
Stage 1	-	-	-	-	-	-	273	273	-
Stage 2	-	-	-	-	-	-	368	366	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1276	-	-	1289	-	-	388	394	777
Stage 1	-	-	-	-	-	-	733	684	-
Stage 2	-	-	-	-	-	-	652	623	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1276	-	-	1289	-	-	371	380	777
Mov Cap-2 Maneuver	-	-	-	-	-	-	371	380	-
Stage 1	-	-	-	-	-	-	730	681	-
Stage 2	-	-	-	-	-	-	621	604	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	1	13.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	526	1276	-	-	1289	-	-	447
HCM Lane V/C Ratio	0.198	0.004	-	-	0.031	-	-	0.041
HCM Control Delay (s)	13.5	7.8	-	-	7.9	-	-	13.4
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	6	4	7
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	7	4	8

Major/Minor	Minor2		
Conflicting Flow All	668	648	282
Stage 1	363	363	-
Stage 2	305	285	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	372	389	757
Stage 1	656	625	-
Stage 2	705	676	-
Platoon blocked, %			
Mov Cap-1 Maneuver	331	375	757
Mov Cap-2 Maneuver	331	375	-
Stage 1	653	606	-
Stage 2	644	673	-

Approach	SB
HCM Control Delay, s	13.4
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	13	247	30	69	269	21	28	28	123
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	268	33	75	292	23	30	30	134

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	315	0	0	301	0	0	791	778	285
Stage 1	-	-	-	-	-	-	313	313	-
Stage 2	-	-	-	-	-	-	478	465	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1245	-	-	1260	-	-	307	328	754
Stage 1	-	-	-	-	-	-	698	657	-
Stage 2	-	-	-	-	-	-	568	563	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1245	-	-	1260	-	-	259	305	754
Mov Cap-2 Maneuver	-	-	-	-	-	-	259	305	-
Stage 1	-	-	-	-	-	-	690	650	-
Stage 2	-	-	-	-	-	-	489	529	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	1.5	17
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	493	1245	-	-	1260	-	-	297
HCM Lane V/C Ratio	0.395	0.011	-	-	0.06	-	-	0.22
HCM Control Delay (s)	17	7.9	-	-	8	-	-	20.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.9	0	-	-	0.2	-	-	0.8

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	15	34	11
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	16	37	12

Major/Minor	Minor2		
Conflicting Flow All	849	783	304
Stage 1	454	454	-
Stage 2	395	329	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	281	325	736
Stage 1	586	569	-
Stage 2	630	646	-
Platoon blocked, %			
Mov Cap-1 Maneuver	202	302	736
Mov Cap-2 Maneuver	202	302	-
Stage 1	579	535	-
Stage 2	488	639	-

Approach	SB
HCM Control Delay, s	20.5
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	80	2	21	0	0	6	3	0	12	22	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	87	2	23	0	0	7	3	0	13	24	0
Number of Lanes	0	1	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	8.5	8.1	8.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	35%	100%	54%	0%	39%	0%
Vol Thru, %	65%	0%	4%	67%	61%	0%
Vol Right, %	0%	0%	42%	33%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	53	50	9	28	145
LT Vol	22	0	2	6	17	0
Through Vol	0	0	21	3	0	145
RT Vol	12	53	27	0	11	0
Lane Flow Rate	37	57	55	10	30	158
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.053	0.089	0.076	0.014	0.043	0.184
Departure Headway (Hd)	5.122	5.556	5.032	4.989	5.092	4.193
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	701	647	714	719	706	859
Service Time	3.139	3.273	2.749	3.01	2.805	1.906
HCM Lane V/C Ratio	0.053	0.088	0.077	0.014	0.042	0.184
HCM Control Delay	8.4	8.8	8.2	8.1	8	7.9
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.3	0.2	0	0.1	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	11	17	145
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	12	18	158
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	7.9
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	11	33	62	0	5	25	12	0	18	249	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	36	67	0	5	27	13	0	20	271	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.8	8.6	9.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	13%	0%	10%	12%	3%	0%
Vol Thru, %	87%	98%	31%	60%	97%	93%
Vol Right, %	0%	2%	58%	29%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	143	127	106	42	104	109
LT Vol	125	125	33	25	101	101
Through Vol	0	2	62	12	0	8
RT Vol	18	0	11	5	3	0
Lane Flow Rate	155	137	115	46	113	118
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.225	0.197	0.156	0.065	0.164	0.17
Departure Headway (Hd)	5.219	5.145	4.867	5.154	5.234	5.167
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	686	696	734	691	683	692
Service Time	2.969	2.894	2.919	3.218	2.985	2.919
HCM Lane V/C Ratio	0.226	0.197	0.157	0.067	0.165	0.171
HCM Control Delay	9.5	9.2	8.8	8.6	9	9
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.9	0.7	0.6	0.2	0.6	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	202	8
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	220	9
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	84	47	0	163	75	0	33	237
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	91	51	0	177	82	0	36	258
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.6	10.6	10.7
HCM LOS	A	B	B

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	68%	0%	0%	0%	100%
Vol Right, %	32%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	84	47	33	237
LT Vol	163	0	0	0	237
Through Vol	75	0	47	0	0
RT Vol	0	84	0	33	0
Lane Flow Rate	259	91	51	36	258
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.353	0.161	0.073	0.057	0.37
Departure Headway (Hd)	4.909	6.359	5.148	5.68	5.177
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	730	562	691	629	693
Service Time	2.957	4.13	2.918	3.429	2.925
HCM Lane V/C Ratio	0.355	0.162	0.074	0.057	0.372
HCM Control Delay	10.6	10.4	8.3	8.8	11
HCM Lane LOS	B	B	A	A	B
HCM 95th-tile Q	1.6	0.6	0.2	0.2	1.7

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	30	64	14	0	69	80	30	0	23	338	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	33	70	15	0	75	87	33	0	25	367	78
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.5	11.9	13.3
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	12%	0%	100%	0%	100%	0%	18%	0%
Vol Thru, %	88%	70%	0%	82%	0%	73%	82%	87%
Vol Right, %	0%	30%	0%	18%	0%	27%	0%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	192	241	30	78	69	110	221	209
LT Vol	169	169	0	64	0	80	181	181
Through Vol	0	72	0	14	0	30	0	28
RT Vol	23	0	30	0	69	0	40	0
Lane Flow Rate	209	262	33	85	75	120	240	227
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.37	0.444	0.072	0.171	0.161	0.233	0.427	0.392
Departure Headway (Hd)	6.38	6.107	7.894	7.253	7.708	7.001	6.408	6.221
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	561	587	451	491	463	509	558	576
Service Time	4.156	3.883	5.689	5.048	5.493	4.786	4.183	3.996
HCM Lane V/C Ratio	0.373	0.446	0.073	0.173	0.162	0.236	0.43	0.394
HCM Control Delay	12.9	13.7	11.3	11.6	12	11.9	13.9	13
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.7	2.3	0.2	0.6	0.6	0.9	2.1	1.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	40	361	28
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	43	392	30
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.5
HCM LOS	B

Lane

CUMULATIVE PLUS PROJECT

Project Title: **Redondo Beach Waterfront**
Intersection: **4 Harbor Dr/Hermosa Ave & Herondo St**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.323 *
	TH	1.00	157	1,600	0.098	N-S(2):	0.098
	LT	1.00	120	1,600	0.075 *	E-W(1):	0.084
Westbound	RT	1.00	282	1,600	0.139 *	E-W(2):	0.140 *
	TH	0.00	0	0	0.000		
	LT	1.00	134	1,600	0.084	V/C:	0.463
Northbound	RT	0.00	92	0	0.000	Lost Time:	0.100
	TH	1.00	304	1,600	0.248 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.563
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.359 *
	TH	1.00	410	1,600	0.256	N-S(2):	0.257
	LT	1.00	162	1,600	0.101 *	E-W(1):	0.164 *
Westbound	RT	1.00	167	1,600	0.054	E-W(2):	0.054
	TH	0.00	0	0	0.000		
	LT	1.00	263	1,600	0.164 *	V/C:	0.523
Northbound	RT	0.00	169	0	0.000	Lost Time:	0.100
	TH	1.00	242	1,600	0.258 *	ITS:	0.000
	LT	0.00	1	1,600	0.001		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.623
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **7 Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	183	1,600	0.114	N-S(1):	0.577 *
	TH	2.00	954	3,200	0.298	N-S(2):	0.312
	LT	1.00	156	1,600	0.098 *	E-W(1):	0.259 *
Westbound	RT	1.00	410	1,600	0.159	E-W(2):	0.242
	TH	1.00	204	1,600	0.128		
	LT	2.00	273	2,880	0.095 *	V/C:	0.836
Northbound	RT	1.00	130	1,600	0.034	Lost Time:	0.100
	TH	3.00	2,299	4,800	0.479 *	ITS:	0.000
	LT	1.00	23	1,600	0.014		
Eastbound	RT	1.00	57	1,600	0.028	ICU:	0.936
	TH	1.00	262	1,600	0.164 *		
	LT	1.00	132	1,600	0.083	LOS:	E

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	561	1,600	0.351	N-S(1):	0.446
	TH	2.00	1,972	3,200	0.616 *	N-S(2):	0.666 *
	LT	1.00	219	1,600	0.137	E-W(1):	0.304 *
Westbound	RT	1.00	272	1,600	0.033	E-W(2):	0.272
	TH	1.00	329	1,600	0.206		
	LT	2.00	346	2,880	0.120 *	V/C:	0.970
Northbound	RT	1.00	249	1,600	0.096	Lost Time:	0.100
	TH	3.00	1,482	4,800	0.309	ITS:	0.000
	LT	1.00	80	1,600	0.050 *		
Eastbound	RT	1.00	98	1,600	0.061	ICU:	1.070
	TH	1.00	295	1,600	0.184 *		
	LT	1.00	106	1,600	0.066	LOS:	F

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **8 Prospect Ave & Anita St**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	36	0	0.000	N-S(1):	0.313 *
	TH	2.00	331	3,200	0.115	N-S(2):	0.258
	LT	1.00	63	1,600	0.039 *	E-W(1):	0.270
Westbound	RT	0.00	85	0	0.000	E-W(2):	0.287 *
	TH	2.00	786	3,200	0.272 *		
	LT	1.00	147	1,600	0.092	V/C:	0.600
Northbound	RT	1.00	160	1,600	0.054	Lost Time:	0.100
	TH	1.00	439	1,600	0.274 *	ITS:	0.000
	LT	1.00	229	1,600	0.143		
Eastbound	RT	0.00	60	0	0.000	ICU:	0.700
	TH	2.00	511	3,200	0.178		
	LT	1.00	24	1,600	0.015 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	68	0	0.000	N-S(1):	0.245
	TH	2.00	570	3,200	0.199 *	N-S(2):	0.287 *
	LT	1.00	91	1,600	0.057	E-W(1):	0.308 *
Westbound	RT	0.00	82	0	0.000	E-W(2):	0.293
	TH	2.00	775	3,200	0.268		
	LT	1.00	109	1,600	0.068 *	V/C:	0.595
Northbound	RT	1.00	78	1,600	0.015	Lost Time:	0.100
	TH	1.00	301	1,600	0.188	ITS:	0.000
	LT	1.00	141	1,600	0.088 *		
Eastbound	RT	0.00	107	0	0.000	ICU:	0.695
	TH	2.00	660	3,200	0.240 *		
	LT	1.00	40	1,600	0.025	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **9 Harbor Dr & Yacht Club Way**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.258 *
	TH	1.00	224	1,600	0.153	N-S(2):	0.164
	LT	1.00	6	1,600	0.004 *	E-W(1):	0.034 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.025
	TH	1.00	1	1,600	0.002		
	LT	0.00	2	1,600	0.001 *	V/C:	0.292
Northbound	RT	0.00	1	0	0.000	Lost Time:	0.100
	TH	1.00	405	1,600	0.254 *	ITS:	0.000
	LT	1.00	17	1,600	0.011		
Eastbound	RT	0.00	15	0	0.000	ICU:	0.392
	TH	1.00	1	1,600	0.033 *		
	LT	0.00	36	1,600	0.023	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	51	0	0.000	N-S(1):	0.223
	TH	1.00	615	1,600	0.416 *	N-S(2):	0.430 *
	LT	1.00	11	1,600	0.007	E-W(1):	0.034
Westbound	RT	0.00	42	0	0.000	E-W(2):	0.048 *
	TH	1.00	0	1,600	0.028 *		
	LT	0.00	3	1,600	0.002	V/C:	0.478
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	1.00	344	1,600	0.216	ITS:	0.000
	LT	1.00	23	1,600	0.014 *		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.578
	TH	1.00	0	1,600	0.032		
	LT	0.00	32	1,600	0.020 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **10 Pacific Coast Hwy & Catalina Ave**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000	N-S(1):	0.582 *
	TH	2.00	1,107	3,200	0.346	N-S(2):	0.350
	LT	0.00	0	0	0.000 *	E-W(1):	0.184
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.207 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.789
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,863	3,200	0.582 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.01	4	22	0.184	ICU:	0.889
	TH	0.00	0	0	0.000		
	LT	1.99	591	2,861	0.207 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	2	0	0.000	N-S(1):	0.436
	TH	2.00	2,149	3,200	0.672 *	N-S(2):	0.681 *
	LT	0.00	0	0	0.000	E-W(1):	0.133
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.153 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.834
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,395	3,200	0.436	ITS:	0.000
	LT	1.00	15	1,600	0.009 *		
Eastbound	RT	0.10	22	160	0.133	ICU:	0.934
	TH	0.00	0	0	0.000		
	LT	1.90	418	2,736	0.153 *	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **11 Harbor Dr & Marina Way**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	78	1,600	0.049	N-S(1):	0.191 *
	TH	1.00	214	1,600	0.134	N-S(2):	0.170
	LT	0.00	0	0	0.000 *	E-W(1):	0.009
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.028 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.219
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	306	1,600	0.191 *	ITS:	0.000
	LT	1.00	58	1,600	0.036		
Eastbound	RT	1.00	43	1,600	0.009	ICU:	0.319
	TH	0.00	0	0	0.000		
	LT	1.00	44	1,600	0.028 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	74	1,600	0.046	N-S(1):	0.232
	TH	1.00	588	1,600	0.368 *	N-S(2):	0.424 *
	LT	0.00	0	0	0.000	E-W(1):	0.018
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.037 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.461
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	371	1,600	0.232	ITS:	0.000
	LT	1.00	89	1,600	0.056 *		
Eastbound	RT	1.00	73	1,600	0.018	ICU:	0.561
	TH	0.00	0	0	0.000		
	LT	1.00	59	1,600	0.037 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **12 Catalina Ave & Gertruda Ave**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	54	0	0.000	N-S(1):	0.174
	TH	2.00	273	3,200	0.102 *	N-S(2):	0.261 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.018
Westbound	RT	0.00	15	0	0.000	E-W(2):	0.028 *
	TH	1.00	3	1,600	0.020 *		
	LT	0.00	14	1,600	0.009	V/C:	0.289
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	525	3,200	0.170	ITS:	0.000
	LT	1.00	254	1,600	0.159 *		
Eastbound	RT	1.00	132	1,600	0.003	ICU:	0.389
	TH	1.00	2	1,600	0.009		
	LT	0.00	13	1,600	0.008 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	70	0	0.000	N-S(1):	0.125
	TH	2.00	726	3,200	0.249 *	N-S(2):	0.347 *
	LT	1.00	5	1,600	0.003	E-W(1):	0.152 *
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.045
	TH	1.00	4	1,600	0.013		
	LT	0.00	6	1,600	0.004 *	V/C:	0.499
Northbound	RT	0.00	7	0	0.000	Lost Time:	0.100
	TH	2.00	382	3,200	0.122	ITS:	0.000
	LT	1.00	156	1,600	0.098 *		
Eastbound	RT	1.00	315	1,600	0.148 *	ICU:	0.599
	TH	1.00	2	1,600	0.033		
	LT	0.00	51	1,600	0.032	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **15 Harbor Dr & Portofino Way/Beryl St**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	NBR, WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	46	1,600	0.014	N-S(1):	0.162 *
	TH	1.00	180	1,600	0.113	N-S(2):	0.117
	LT	1.00	36	1,600	0.023 *	E-W(1):	0.109 *
Westbound	RT	1.00	140	1,600	0.065	E-W(2):	0.108
	TH	1.00	127	1,600	0.079		
	LT	1.00	72	1,600	0.045 *	V/C:	0.271
Northbound	RT	0.00	50	0	0.000	Lost Time:	0.100
	TH	1.00	172	1,600	0.139 *	ITS:	0.000
	LT	1.00	7	1,600	0.004		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.371
	TH	1.00	96	1,600	0.064 *		
	LT	1.00	46	1,600	0.029	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	118	1,600	0.045	N-S(1):	0.302 *
	TH	1.00	452	1,600	0.283	N-S(2):	0.290
	LT	1.00	84	1,600	0.053 *	E-W(1):	0.259 *
Westbound	RT	1.00	147	1,600	0.039	E-W(2):	0.226
	TH	1.00	271	1,600	0.169		
	LT	1.00	186	1,600	0.116 *	V/C:	0.561
Northbound	RT	0.00	128	0	0.000	Lost Time:	0.100
	TH	1.00	271	1,600	0.249 *	ITS:	0.000
	LT	1.00	11	1,600	0.007		
Eastbound	RT	0.00	25	0	0.000	ICU:	0.661
	TH	1.00	203	1,600	0.143 *		
	LT	1.00	91	1,600	0.057	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **16 Catalina Ave & Beryl St**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	96	0	0.000	N-S(1):	0.202 *
	TH	2.00	244	3,200	0.106	N-S(2):	0.173
	LT	0.00	0	0	0.000 *	E-W(1):	0.061
Westbound	RT	1.00	7	1,600	0.004	E-W(2):	0.108 *
	TH	1.00	127	1,600	0.079 *		
	LT	1.00	30	1,600	0.019	V/C:	0.310
Northbound	RT	0.00	43	0	0.000	Lost Time:	0.100
	TH	2.00	604	3,200	0.202 *	ITS:	0.000
	LT	2.00	192	2,880	0.067		
Eastbound	RT	1.00	38	1,600	0.000	ICU:	0.410
	TH	1.00	67	1,600	0.042		
	LT	1.00	47	1,600	0.029 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	236	0	0.000	N-S(1):	0.140
	TH	2.00	637	3,200	0.274 *	N-S(2):	0.330 *
	LT	0.00	3	1,600	0.002	E-W(1):	0.160
Westbound	RT	1.00	19	1,600	0.011	E-W(2):	0.213 *
	TH	1.00	252	1,600	0.158 *		
	LT	1.00	49	1,600	0.031	V/C:	0.543
Northbound	RT	0.00	62	0	0.000	Lost Time:	0.100
	TH	2.00	378	3,200	0.138	ITS:	0.000
	LT	2.00	161	2,880	0.056 *		
Eastbound	RT	1.00	137	1,600	0.030	ICU:	0.643
	TH	1.00	207	1,600	0.129		
	LT	1.00	88	1,600	0.055 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **19 Pacific Coast Hwy & Beryl St**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	27	0	0.000	N-S(1):	0.560 *
	TH	2.00	1,067	3,200	0.342	N-S(2):	0.371
	LT	1.00	19	1,600	0.012 *	E-W(1):	0.127 *
Westbound	RT	1.00	29	1,600	0.012	E-W(2):	0.090
	TH	1.00	110	1,600	0.069		
	LT	1.00	52	1,600	0.033 *	V/C:	0.687
Northbound	RT	0.00	46	0	0.000	Lost Time:	0.100
	TH	2.00	1,707	3,200	0.548 *	ITS:	0.000
	LT	1.00	46	1,600	0.029		
Eastbound	RT	0.00	27	0	0.000	ICU:	0.787
	TH	1.00	124	1,600	0.094 *		
	LT	1.00	33	1,600	0.021	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	71	0	0.000	N-S(1):	0.433
	TH	2.00	1,956	3,200	0.633 *	N-S(2):	0.666 *
	LT	1.00	42	1,600	0.026	E-W(1):	0.194 *
Westbound	RT	1.00	42	1,600	0.013	E-W(2):	0.194 *
	TH	1.00	222	1,600	0.139 *		
	LT	1.00	61	1,600	0.038 *	V/C:	0.860
Northbound	RT	0.00	47	0	0.000	Lost Time:	0.100
	TH	2.00	1,256	3,200	0.407	ITS:	0.000
	LT	1.00	52	1,600	0.033 *		
Eastbound	RT	0.00	64	0	0.000	ICU:	0.960
	TH	1.00	186	1,600	0.156 *		
	LT	1.00	88	1,600	0.055 *	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **21 Catalina Ave & Carnelian St**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	0	1,600	0.000	N-S(1):	0.277 *
	TH	2.00	246	3,200	0.077	N-S(2):	0.080
	LT	1.00	21	1,600	0.013 *	E-W(1):	0.023
Westbound	RT	0.00	36	0	0.000	E-W(2):	0.039 *
	TH	1.00	1	1,600	0.035 *		
	LT	0.00	19	1,600	0.012	V/C:	0.316
Northbound	RT	1.00	22	1,600	0.008	Lost Time:	0.100
	TH	2.00	846	3,200	0.264 *	ITS:	0.000
	LT	1.00	4	1,600	0.003		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.416
	TH	1.00	4	1,600	0.011		
	LT	0.00	7	1,600	0.004 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	5	1,600	0.003	N-S(1):	0.258 *
	TH	2.00	776	3,200	0.243	N-S(2):	0.248
	LT	1.00	92	1,600	0.058 *	E-W(1):	0.027
Westbound	RT	0.00	41	0	0.000	E-W(2):	0.053 *
	TH	1.00	8	1,600	0.052 *		
	LT	0.00	34	1,600	0.021	V/C:	0.311
Northbound	RT	1.00	42	1,600	0.016	Lost Time:	0.100
	TH	2.00	639	3,200	0.200 *	ITS:	0.000
	LT	1.00	8	1,600	0.005		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.411
	TH	1.00	4	1,600	0.006		
	LT	0.00	1	1,600	0.001 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **22 Catalina Ave & Diamond St**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	4	1,600	0.000	N-S(1):	0.265 *
	TH	2.00	237	3,200	0.074	N-S(2):	0.075
	LT	1.00	27	1,600	0.017 *	E-W(1):	0.043
Westbound	RT	0.00	53	0	0.000	E-W(2):	0.045 *
	TH	1.00	1	1,600	0.034 *		
	LT	1.00	36	1,600	0.023	V/C:	0.310
Northbound	RT	1.00	68	1,600	0.031	Lost Time:	0.100
	TH	2.00	792	3,200	0.248 *	ITS:	0.000
	LT	1.00	2	1,600	0.001		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.410
	TH	1.00	9	1,600	0.020		
	LT	0.00	17	1,600	0.011 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.005	N-S(1):	0.232
	TH	2.00	740	3,200	0.231 *	N-S(2):	0.237 *
	LT	1.00	58	1,600	0.036	E-W(1):	0.046 *
Westbound	RT	0.00	58	0	0.000	E-W(2):	0.042
	TH	1.00	4	1,600	0.039		
	LT	1.00	64	1,600	0.040 *	V/C:	0.283
Northbound	RT	1.00	68	1,600	0.023	Lost Time:	0.100
	TH	2.00	626	3,200	0.196	ITS:	0.000
	LT	1.00	10	1,600	0.006 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.383
	TH	1.00	2	1,600	0.006 *		
	LT	0.00	4	1,600	0.003	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **23 Catalina Ave & Emerald St**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	6	1,600	0.000	N-S(1):	0.263 *
	TH	2.00	249	3,200	0.078	N-S(2):	0.082
	LT	1.00	17	1,600	0.011 *	E-W(1):	0.067
Westbound	RT	0.00	34	0	0.000	E-W(2):	0.069 *
	TH	1.00	4	1,600	0.033 *		
	LT	0.00	15	1,600	0.009	V/C:	0.332
Northbound	RT	0.00	28	0	0.000	Lost Time:	0.100
	TH	2.00	777	3,200	0.252 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.00	25	0	0.000	ICU:	0.432
	TH	1.00	9	1,600	0.058		
	LT	0.00	58	1,600	0.036 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	29	1,600	0.010	N-S(1):	0.231
	TH	2.00	736	3,200	0.230 *	N-S(2):	0.242 *
	LT	1.00	40	1,600	0.025	E-W(1):	0.047
Westbound	RT	0.00	31	0	0.000	E-W(2):	0.056 *
	TH	1.00	6	1,600	0.039 *		
	LT	0.00	25	1,600	0.016	V/C:	0.298
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	638	3,200	0.206	ITS:	0.000
	LT	1.00	19	1,600	0.012 *		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.398
	TH	1.00	6	1,600	0.031		
	LT	0.00	27	1,600	0.017 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **24 Pacific Coast Hwy & Garnet St**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	8	0	0.000	N-S(1):	0.565 *
	TH	2.00	957	3,200	0.302	N-S(2):	0.302
	LT	0.00	1	1,600	0.001 *	E-W(1):	0.017
Westbound	RT	0.00	47	0	0.000	E-W(2):	0.047 *
	TH	1.00	18	1,600	0.041 *		
	LT	1.00	3	1,600	0.002	V/C:	0.612
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	1,796	3,200	0.564 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.712
	TH	1.00	5	1,600	0.015		
	LT	1.00	9	1,600	0.006 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	31	0	0.000	N-S(1):	0.437
	TH	2.00	1,712	3,200	0.546 *	N-S(2):	0.546 *
	LT	0.00	4	1,600	0.003	E-W(1):	0.032
Westbound	RT	0.00	42	0	0.000	E-W(2):	0.043 *
	TH	1.00	16	1,600	0.036 *		
	LT	1.00	13	1,600	0.008	V/C:	0.589
Northbound	RT	0.00	44	0	0.000	Lost Time:	0.100
	TH	2.00	1,345	3,200	0.434	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.689
	TH	1.00	16	1,600	0.024		
	LT	1.00	11	1,600	0.007 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **25 Catalina Ave & Torrance Blvd**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	70	1,600	0.033	N-S(1):	0.252 *
	TH	2.00	175	3,200	0.055	N-S(2):	0.068
	LT	1.00	84	1,600	0.053 *	E-W(1):	0.106 *
Westbound	RT	1.00	54	1,600	0.000	E-W(2):	0.087
	TH	2.00	209	3,200	0.065		
	LT	1.00	80	1,600	0.050 *	V/C:	0.358
Northbound	RT	1.00	159	1,600	0.074	Lost Time:	0.100
	TH	2.00	636	3,200	0.199 *	ITS:	0.000
	LT	1.00	20	1,600	0.013		
Eastbound	RT	1.00	100	1,600	0.056 *	ICU:	0.458
	TH	2.00	94	3,200	0.029		
	LT	1.00	35	1,600	0.022	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	130	1,600	0.059	N-S(1):	0.232 *
	TH	2.00	545	3,200	0.170	N-S(2):	0.203
	LT	1.00	132	1,600	0.083 *	E-W(1):	0.193 *
Westbound	RT	1.00	81	1,600	0.000	E-W(2):	0.161
	TH	2.00	375	3,200	0.117		
	LT	1.00	101	1,600	0.063 *	V/C:	0.425
Northbound	RT	1.00	100	1,600	0.031	Lost Time:	0.100
	TH	2.00	476	3,200	0.149 *	ITS:	0.000
	LT	1.00	52	1,600	0.033		
Eastbound	RT	1.00	234	1,600	0.130 *	ICU:	0.525
	TH	2.00	267	3,200	0.083		
	LT	1.00	71	1,600	0.044	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **26 Pacific Coast Hwy & Torrance Blvd**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.564 *
	TH	2.00	896	3,200	0.287	N-S(2):	0.331
	LT	1.00	233	1,600	0.146 *	E-W(1):	0.196 *
Westbound	RT	1.00	232	1,600	0.072	E-W(2):	0.141
	TH	2.00	359	3,200	0.112		
	LT	1.00	131	1,600	0.082 *	V/C:	0.760
Northbound	RT	0.00	77	0	0.000	Lost Time:	0.100
	TH	2.00	1,260	3,200	0.418 *	ITS:	0.000
	LT	1.00	70	1,600	0.044		
Eastbound	RT	0.00	57	0	0.000	ICU:	0.860
	TH	2.00	308	3,200	0.114 *		
	LT	1.00	47	1,600	0.029	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	40	0	0.000	N-S(1):	0.545
	TH	2.00	1,486	3,200	0.477 *	N-S(2):	0.554 *
	LT	1.00	316	1,600	0.198	E-W(1):	0.271 *
Westbound	RT	1.00	308	1,600	0.094	E-W(2):	0.198
	TH	2.00	485	3,200	0.152		
	LT	1.00	176	1,600	0.110 *	V/C:	0.825
Northbound	RT	0.00	104	0	0.000	Lost Time:	0.100
	TH	2.00	1,005	3,200	0.347	ITS:	0.000
	LT	1.00	123	1,600	0.077 *		
Eastbound	RT	0.00	109	0	0.000	ICU:	0.925
	TH	2.00	406	3,200	0.161 *		
	LT	1.00	73	1,600	0.046	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **27 Helberta Ave/Camino Real & Torrance Blvd**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	16	0	0.000	N-S(1):	0.157 *
	TH	1.00	64	1,600	0.063 *	N-S(2):	0.000
	LT	0.00	21	1,600	0.013	E-W(1):	0.236 *
Westbound	RT	0.00	26	0	0.000	E-W(2):	0.205
	TH	2.00	588	3,200	0.192		
	LT	1.00	30	1,600	0.019 *	V/C:	0.393
Northbound	RT	0.00	38	0	0.000	Lost Time:	0.100
	TH	0.60	43	956	0.085	ITS:	0.000
	LT	1.40	190	2,019	0.094 *		
Eastbound	RT	0.00	117	0	0.000	ICU:	0.493
	TH	2.00	578	3,200	0.217 *		
	LT	1.00	20	1,600	0.013	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	11	0	0.000	N-S(1):	0.139 *
	TH	1.00	29	1,600	0.037 *	N-S(2):	0.000
	LT	0.00	19	1,600	0.012	E-W(1):	0.308 *
Westbound	RT	0.00	16	0	0.000	E-W(2):	0.234
	TH	2.00	710	3,200	0.227		
	LT	1.00	46	1,600	0.029 *	V/C:	0.447
Northbound	RT	0.00	29	0	0.000	Lost Time:	0.100
	TH	0.41	31	653	0.092	ITS:	0.000
	LT	1.59	234	2,292	0.102 *		
Eastbound	RT	0.00	169	0	0.000	ICU:	0.547
	TH	2.00	723	3,200	0.279 *		
	LT	1.00	11	1,600	0.007	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **28 Prospect Ave & Torrance Blvd**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	66	0	0.000	N-S(1):	0.429 *
	TH	2.00	599	3,200	0.208	N-S(2):	0.242
	LT	1.00	202	1,600	0.126 *	E-W(1):	0.279
Westbound	RT	0.00	172	0	0.000	E-W(2):	0.309 *
	TH	2.00	598	3,200	0.241 *		
	LT	1.00	157	1,600	0.098	V/C:	0.738
Northbound	RT	0.00	246	0	0.000	Lost Time:	0.100
	TH	2.00	723	3,200	0.303 *	ITS:	0.000
	LT	1.00	55	1,600	0.034		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.838
	TH	2.00	556	3,200	0.181		
	LT	1.00	108	1,600	0.068 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	135	0	0.000	N-S(1):	0.332 *
	TH	2.00	758	3,200	0.279	N-S(2):	0.308
	LT	1.00	211	1,600	0.132 *	E-W(1):	0.322
Westbound	RT	0.00	172	0	0.000	E-W(2):	0.332 *
	TH	2.00	702	3,200	0.273 *		
	LT	1.00	174	1,600	0.109	V/C:	0.664
Northbound	RT	0.00	114	0	0.000	Lost Time:	0.100
	TH	2.00	527	3,200	0.200 *	ITS:	0.000
	LT	1.00	46	1,600	0.029		
Eastbound	RT	0.00	44	0	0.000	ICU:	0.764
	TH	2.00	638	3,200	0.213		
	LT	1.00	94	1,600	0.059 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **29 Catalina Ave & Pearl St**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	145	1,600	0.051	N-S(1):	0.201 *
	TH	2.00	200	3,200	0.064	N-S(2):	0.068
	LT	0.00	5	1,600	0.003 *	E-W(1):	0.095 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	12	1,600	0.015 *		
	LT	0.00	0	0	0.000	V/C:	0.296
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	617	3,200	0.198 *	ITS:	0.000
	LT	0.00	7	1,600	0.004		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.396
	TH	0.15	12	235	0.072		
	LT	1.85	214	2,668	0.080 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	286	1,600	0.136	N-S(1):	0.146
	TH	2.00	553	3,200	0.183 *	N-S(2):	0.185 *
	LT	0.00	31	1,600	0.019	E-W(1):	0.101 *
Westbound	RT	0.00	13	0	0.000	E-W(2):	0.000
	TH	1.00	9	1,600	0.016 *		
	LT	0.00	4	1,600	0.003	V/C:	0.286
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	395	3,200	0.127	ITS:	0.000
	LT	0.00	3	1,600	0.002 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.386
	TH	0.11	10	169	0.077		
	LT	1.89	233	2,728	0.085 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **31 Pacific Coast Hwy & Sapphire St/Francisca Ave**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	5	0	0.000	N-S(1):	0.498 *
	TH	2.00	943	3,200	0.296	N-S(2):	0.308
	LT	1.00	27	1,600	0.017 *	E-W(1):	0.046 *
Westbound	RT	0.00	19	0	0.000	E-W(2):	0.030
	TH	1.00	10	1,600	0.021		
	LT	0.00	5	1,600	0.003 *	V/C:	0.544
Northbound	RT	0.00	38	0	0.000	Lost Time:	0.100
	TH	2.00	1,500	3,200	0.481 *	ITS:	0.000
	LT	1.00	19	1,600	0.012		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.644
	TH	1.00	37	1,600	0.043 *		
	LT	0.00	15	1,600	0.009	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	7	0	0.000	N-S(1):	0.406
	TH	2.00	1,603	3,200	0.503 *	N-S(2):	0.517 *
	LT	1.00	35	1,600	0.022	E-W(1):	0.075 *
Westbound	RT	0.00	21	0	0.000	E-W(2):	0.048
	TH	1.00	11	1,600	0.023		
	LT	0.00	5	1,600	0.003 *	V/C:	0.592
Northbound	RT	0.00	28	0	0.000	Lost Time:	0.100
	TH	2.00	1,200	3,200	0.384	ITS:	0.000
	LT	1.00	22	1,600	0.014 *		
Eastbound	RT	0.00	37	0	0.000	ICU:	0.692
	TH	1.00	38	1,600	0.072 *		
	LT	0.00	40	1,600	0.025	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **34 Pacific Coast Hwy & Knob Hill Ave**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	38	0	0.000	N-S(1):	0.483 *
	TH	2.00	892	3,200	0.291	N-S(2):	0.310
	LT	1.00	52	1,600	0.033 *	E-W(1):	0.086
Westbound	RT	0.00	59	0	0.000	E-W(2):	0.108 *
	TH	1.00	54	1,600	0.071 *		
	LT	1.00	55	1,600	0.034	V/C:	0.591
Northbound	RT	0.00	36	0	0.000	Lost Time:	0.100
	TH	2.00	1,403	3,200	0.450 *	ITS:	0.000
	LT	1.00	30	1,600	0.019		
Eastbound	RT	1.00	33	1,600	0.011	ICU:	0.691
	TH	1.00	83	1,600	0.052		
	LT	1.00	59	1,600	0.037 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	35	0	0.000	N-S(1):	0.432
	TH	2.00	1,437	3,200	0.460 *	N-S(2):	0.496 *
	LT	1.00	63	1,600	0.039	E-W(1):	0.113
Westbound	RT	0.00	59	0	0.000	E-W(2):	0.154 *
	TH	1.00	133	1,600	0.120 *		
	LT	1.00	85	1,600	0.053	V/C:	0.650
Northbound	RT	0.00	72	0	0.000	Lost Time:	0.100
	TH	2.00	1,185	3,200	0.393	ITS:	0.000
	LT	1.00	57	1,600	0.036 *		
Eastbound	RT	1.00	71	1,600	0.027	ICU:	0.750
	TH	1.00	96	1,600	0.060		
	LT	1.00	54	1,600	0.034 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **35 Harbor Dr & Pacific Avenue**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.094 *
	TH	1.00	141	1,600	0.088	N-S(2):	0.088
	LT	1.00	21	1,600	0.013 *	E-W(1):	0.000
Westbound	RT	1.00	132	1,600	0.083 *	E-W(2):	0.083 *
	TH	1.00	5	1,600	0.003		
	LT	0.00	0	0	0.000	V/C:	0.177
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	130	1,600	0.081 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.277
	TH	1.00	0	1,600	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.169
	TH	1.00	331	1,600	0.207 *	N-S(2):	0.207 *
	LT	1.00	82	1,600	0.051	E-W(1):	0.000
Westbound	RT	1.00	155	1,600	0.097 *	E-W(2):	0.097 *
	TH	1.00	11	1,600	0.007		
	LT	0.00	0	0	0.000	V/C:	0.304
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	188	1,600	0.118	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.404
	TH	1.00	0	1,600	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **36 Pacific Coast Hwy & Palos Verdes Blvd**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	267	0	0.000	N-S(1):	0.335
	TH	2.00	581	3,200	0.265 *	N-S(2):	0.374 *
	LT	1.00	72	1,600	0.045	E-W(1):	0.269
Westbound	RT	0.00	100	0	0.000	E-W(2):	0.414 *
	TH	2.00	380	3,200	0.150 *		
	LT	1.00	73	1,600	0.046	V/C:	0.788
Northbound	RT	1.00	82	1,600	0.028	Lost Time:	0.100
	TH	2.00	927	3,200	0.290	ITS:	0.000
	LT	1.00	174	1,600	0.109 *		
Eastbound	RT	0.00	160	0	0.000	ICU:	0.888
	TH	2.00	552	3,200	0.223		
	LT	1.00	423	1,600	0.264 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	365	0	0.000	N-S(1):	0.385
	TH	2.00	1,037	3,200	0.438 *	N-S(2):	0.586 *
	LT	1.00	118	1,600	0.074	E-W(1):	0.265
Westbound	RT	0.00	138	0	0.000	E-W(2):	0.333 *
	TH	2.00	474	3,200	0.191 *		
	LT	1.00	118	1,600	0.074	V/C:	0.919
Northbound	RT	1.00	74	1,600	0.009	Lost Time:	0.100
	TH	2.00	994	3,200	0.311	ITS:	0.000
	LT	1.00	236	1,600	0.148 *		
Eastbound	RT	0.00	192	0	0.000	ICU:	1.019
	TH	2.00	419	3,200	0.191		
	LT	1.00	227	1,600	0.142 *	LOS:	F

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **37 Pacific Coast Hwy & 2nd St**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	35	0	0.000	N-S(1):	0.509 *
	TH	3.00	1,134	4,800	0.244	N-S(2):	0.250
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.105 *
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.000
	TH	1.00	2	1,600	0.021 *		
	LT	0.00	11	1,600	0.007	V/C:	0.614
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	3.00	2,439	4,800	0.509 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.32	43	510	0.081	ICU:	0.714
	TH	0.00	0	0	0.000		
	LT	0.68	92	1,090	0.084 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	73	0	0.000	N-S(1):	0.338
	TH	3.00	2,364	4,800	0.508 *	N-S(2):	0.534 *
	LT	1.00	1	1,600	0.001	E-W(1):	0.103 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	4	1,600	0.019 *		
	LT	0.00	14	1,600	0.009	V/C:	0.637
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,614	4,800	0.337	ITS:	0.000
	LT	1.00	42	1,600	0.026 *		
Eastbound	RT	0.32	43	510	0.071	ICU:	0.737
	TH	0.00	0	0	0.000		
	LT	0.68	92	1,090	0.084 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **38 Pacific Coast Hwy & 10th/Aviation**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.515 *
	TH	3.00	709	4,800	0.148	N-S(2):	0.154
	LT	1.00	142	1,600	0.089 *	E-W(1):	0.183 *
Westbound	RT	1.00	158	1,600	0.010	E-W(2):	0.164
	TH	0.01	3	18	0.164		
	LT	1.99	522	2,864	0.182 *	V/C:	0.698
Northbound	RT	1.00	675	1,600	0.331	Lost Time:	0.100
	TH	3.00	2,045	4,800	0.426 *	ITS:	0.000
	LT	1.00	9	1,600	0.006		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.798
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.394
	TH	3.00	1,945	4,800	0.405 *	N-S(2):	0.413 *
	LT	1.00	227	1,600	0.142	E-W(1):	0.263 *
Westbound	RT	1.00	223	1,600	0.000	E-W(2):	0.236
	TH	0.03	10	42	0.236		
	LT	1.97	744	2,842	0.262 *	V/C:	0.676
Northbound	RT	1.00	529	1,600	0.200	Lost Time:	0.100
	TH	3.00	1,209	4,800	0.252	ITS:	0.000
	LT	1.00	13	1,600	0.008 *		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.776
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **39 Pacific Coast Hwy & Pier/14th St**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	63	0	0.000	N-S(1):	0.395 *
	TH	3.00	696	4,800	0.158	N-S(2):	0.223
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.086 *
Westbound	RT	1.00	6	1,600	0.004 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	V/C:	0.481
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,891	4,800	0.395 *	ITS:	0.000
	LT	2.00	187	2,880	0.065		
Eastbound	RT	1.00	172	1,600	0.043	ICU:	0.581
	TH	0.00	0	0	0.000		
	LT	2.00	237	2,880	0.082 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	150	0	0.000	N-S(1):	0.245
	TH	3.00	1,937	4,800	0.435 *	N-S(2):	0.549 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.088 *
Westbound	RT	1.00	12	1,600	0.006 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001	V/C:	0.637
Northbound	RT	0.00	6	0	0.000	Lost Time:	0.100
	TH	3.00	1,149	4,800	0.241	ITS:	0.000
	LT	2.00	327	2,880	0.114 *		
Eastbound	RT	1.00	250	1,600	0.043	ICU:	0.737
	TH	0.00	0	0	0.000		
	LT	2.00	235	2,880	0.082 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **40 Pacific Coast Hwy & 16th St**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	149	1,600	0.069	N-S(1):	0.361 *
	TH	3.00	927	4,800	0.193	N-S(2):	0.244
	LT	1.00	15	1,600	0.009 *	E-W(1):	0.082 *
Westbound	RT	0.48	25	769	0.028	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.52	27	831	0.033 *	V/C:	0.443
Northbound	RT	0.00	48	0	0.000	Lost Time:	0.100
	TH	3.00	1,640	4,800	0.352 *	ITS:	0.000
	LT	1.00	81	1,600	0.051		
Eastbound	RT	1.00	63	1,600	0.014	ICU:	0.543
	TH	0.00	0	0	0.000		
	LT	1.00	78	1,600	0.049 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	207	1,600	0.094	N-S(1):	0.261
	TH	3.00	2,011	4,800	0.419 *	N-S(2):	0.484 *
	LT	1.00	3	1,600	0.002	E-W(1):	0.083 *
Westbound	RT	0.16	3	253	0.011	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.84	16	1,347	0.012 *	V/C:	0.567
Northbound	RT	0.00	25	0	0.000	Lost Time:	0.100
	TH	3.00	1,220	4,800	0.259	ITS:	0.000
	LT	1.00	104	1,600	0.065 *		
Eastbound	RT	1.00	87	1,600	0.022	ICU:	0.667
	TH	0.00	0	0	0.000		
	LT	1.00	113	1,600	0.071 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **41 Pacific Coast Hwy & Prospect Ave**
Description: **Cumulative plus Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	75	1,600	0.025	N-S(1):	0.190 *
	TH	1.00	8	1,600	0.156 *	N-S(2):	0.000
	LT	0.00	242	1,600	0.151	E-W(1):	0.249
Westbound	RT	0.00	217	0	0.000	E-W(2):	0.441 *
	TH	2.00	1,055	3,200	0.398 *		
	LT	1.00	4	1,600	0.003	V/C:	0.631
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	1.00	38	1,600	0.034 *	ITS:	0.000
	LT	0.00	8	1,600	0.005		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.731
	TH	2.00	788	3,200	0.246		
	LT	1.00	69	1,600	0.043 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	114	1,600	0.053	N-S(1):	0.215 *
	TH	1.00	19	1,600	0.184 *	N-S(2):	0.000
	LT	0.00	275	1,600	0.172	E-W(1):	0.362
Westbound	RT	0.00	209	0	0.000	E-W(2):	0.495 *
	TH	2.00	1,261	3,200	0.459 *		
	LT	1.00	13	1,600	0.008	V/C:	0.710
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	1.00	24	1,600	0.031 *	ITS:	0.000
	LT	0.00	5	1,600	0.003		
Eastbound	RT	0.00	8	0	0.000	ICU:	0.810
	TH	2.00	1,126	3,200	0.354		
	LT	1.00	57	1,600	0.036 *	LOS:	D

* - Denotes critical movement

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	6	12	5	0	28	8	27	0	52	520	78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	13	5	0	30	9	29	0	57	565	85
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.4	9.6	12.8
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	17%	0%	26%	44%	41%	0%
Vol Thru, %	83%	77%	52%	13%	59%	98%
Vol Right, %	0%	23%	22%	43%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	312	338	23	63	178	107
LT Vol	260	260	12	8	105	105
Through Vol	0	78	5	27	0	2
RT Vol	52	0	6	28	73	0
Lane Flow Rate	339	367	25	68	193	116
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.489	0.504	0.042	0.11	0.305	0.176
Departure Headway (Hd)	5.187	4.941	5.988	5.796	5.7	5.479
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	692	727	592	613	627	649
Service Time	2.946	2.699	4.088	3.883	3.476	3.255
HCM Lane V/C Ratio	0.49	0.505	0.042	0.111	0.308	0.179
HCM Control Delay	12.9	12.7	9.4	9.6	11	9.4
HCM Lane LOS	B	B	A	A	B	A
HCM 95th-tile Q	2.7	2.9	0.1	0.4	1.3	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	73	209	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	79	227	2
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.4
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	22	106	21	0	12	35	12	0	12	49	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	24	115	23	0	13	38	13	0	13	53	68
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.7	8	8.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	15%	20%	38%
Vol Thru, %	40%	71%	59%	47%
Vol Right, %	51%	14%	20%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	149	59	98
LT Vol	49	106	35	46
Through Vol	63	21	12	15
RT Vol	12	22	12	37
Lane Flow Rate	135	162	64	107
Geometry Grp	1	1	1	1
Degree of Util (X)	0.161	0.202	0.082	0.136
Departure Headway (Hd)	4.3	4.5	4.588	4.593
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	834	798	780	781
Service Time	2.324	2.526	2.618	2.62
HCM Lane V/C Ratio	0.162	0.203	0.082	0.137
HCM Control Delay	8.2	8.7	8	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.8	0.3	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	37	46	15
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	40	50	16
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.3
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	84	124	63	0	15	49	26	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	91	135	68	0	16	53	28	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	10	8.3
HCM LOS	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	17%	9%
Vol Thru, %	46%	54%	77%
Vol Right, %	23%	29%	14%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	271	90	180
LT Vol	124	49	138
Through Vol	63	26	25
RT Vol	84	15	17
Lane Flow Rate	295	98	196
Geometry Grp	1	1	1
Degree of Util (X)	0.364	0.125	0.259
Departure Headway (Hd)	4.453	4.606	4.757
Convergence, Y/N	Yes	Yes	Yes
Cap	807	776	753
Service Time	2.485	2.647	2.793
HCM Lane V/C Ratio	0.366	0.126	0.26
HCM Control Delay	10	8.3	9.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.7	0.4	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	17	138	25
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	18	150	27
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.5
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	22	189	423	55	69	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	205	460	60	75	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	520	0	-	0	743	490
Stage 1	-	-	-	-	490	-
Stage 2	-	-	-	-	253	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1046	-	-	-	383	578
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	789	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1046	-	-	-	374	578
Mov Cap-2 Maneuver	-	-	-	-	374	-
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	771	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1046	-	-	-	399
HCM Lane V/C Ratio	0.023	-	-	-	0.229
HCM Control Delay (s)	8.5	-	-	-	16.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9

Intersection	
Intersection Delay, s/veh	19.1
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	220	46	0	48	289	0	0	167	0	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	239	50	0	52	314	0	0	182	0	65
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	17.7	22.8	21.1
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	74%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	26%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	227	220	46	48	289	140	90	22
LT Vol	0	220	0	0	289	0	90	0
Through Vol	60	0	46	0	0	0	0	22
RT Vol	167	0	0	48	0	140	0	0
Lane Flow Rate	247	239	50	52	314	152	98	24
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.562	0.525	0.1	0.118	0.668	0.342	0.206	0.046
Departure Headway (Hd)	8.204	7.901	7.182	8.163	7.651	8.093	7.58	6.861
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	437	454	496	438	471	443	472	519
Service Time	5.991	5.686	4.967	5.943	5.431	5.876	5.363	4.643
HCM Lane V/C Ratio	0.565	0.526	0.101	0.119	0.667	0.343	0.208	0.046
HCM Control Delay	21.1	19.2	10.8	12	24.6	15.1	12.3	10
HCM Lane LOS	C	C	B	B	C	C	B	A
HCM 95th-tile Q	3.4	3	0.3	0.4	4.8	1.5	0.8	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	140	90	22
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	152	98	24
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.7
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	2	0	1	5	3	36	23	761	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	1	5	3	39	25	827	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	933	1348	222	1125	1362	415	443	0	0
Stage 1	468	468	-	879	879	-	-	-	-
Stage 2	465	880	-	246	483	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	221	150	782	160	147	586	1113	-	-
Stage 1	545	560	-	309	363	-	-	-	-
Stage 2	547	363	-	736	551	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	195	143	782	154	140	586	1113	-	-
Mov Cap-2 Maneuver	195	143	-	154	140	-	-	-	-
Stage 1	533	546	-	302	355	-	-	-	-
Stage 2	494	355	-	717	537	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	19	15.8	0.2
HCM LOS	C	C	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1113	-	-	260	382	798	-	-
HCM Lane V/C Ratio	0.022	-	-	0.013	0.125	0.025	-	-
HCM Control Delay (s)	8.3	-	-	19	15.8	9.6	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0.4	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	18	381	27
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	20	414	29

Major/Minor	Major2		
Conflicting Flow All	830	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	798	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	798	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	0	1	1	1	110	1	662	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	1	1	1	120	1	720	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	797	1157	184	971	1156	360	368	0	0
Stage 1	434	434	-	722	722	-	-	-	-
Stage 2	363	723	-	249	434	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	277	195	827	207	195	637	1187	-	-
Stage 1	570	579	-	384	429	-	-	-	-
Stage 2	628	429	-	733	579	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	217	187	827	201	187	637	1187	-	-
Mov Cap-2 Maneuver	217	187	-	201	187	-	-	-	-
Stage 1	569	557	-	384	429	-	-	-	-
Stage 2	508	429	-	704	557	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	20.6	12.3	0
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1187	-	-	239	612	877	-	-
HCM Lane V/C Ratio	0.001	-	-	0.036	0.199	0.037	-	-
HCM Control Delay (s)	8	0	-	20.6	12.3	9.3	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	30	339	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	33	368	0

Major/Minor	Major2		
Conflicting Flow All	721	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	877	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	877	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.8
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	94	10	15	128	11	28	104	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	102	11	16	139	12	30	113	51

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	151	0	0	113	0	0	305	294	108
Stage 1	-	-	-	-	-	-	110	110	-
Stage 2	-	-	-	-	-	-	195	184	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1430	-	-	1476	-	-	647	617	946
Stage 1	-	-	-	-	-	-	895	804	-
Stage 2	-	-	-	-	-	-	807	747	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1430	-	-	1476	-	-	615	610	946
Mov Cap-2 Maneuver	-	-	-	-	-	-	615	610	-
Stage 1	-	-	-	-	-	-	894	803	-
Stage 2	-	-	-	-	-	-	763	739	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.7	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	674	1430	-	-	1476	-	-	612
HCM Lane V/C Ratio	0.289	0.001	-	-	0.011	-	-	0.059
HCM Control Delay (s)	12.5	7.5	-	-	7.5	-	-	11.2
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.2	0	-	-	0	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	2	29	2
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	2	32	2

Major/Minor	Minor2		
Conflicting Flow All	370	293	145
Stage 1	178	178	-
Stage 2	192	115	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	587	618	902
Stage 1	824	752	-
Stage 2	810	800	-
Platoon blocked, %			
Mov Cap-1 Maneuver	472	611	902
Mov Cap-2 Maneuver	472	611	-
Stage 1	823	744	-
Stage 2	658	799	-

Approach	SB
HCM Control Delay, s	11.2
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	135	18	53	150	17	9	13	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	147	20	58	163	18	10	14	59

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	182	0	0	166	0	0	470	469	157
Stage 1	-	-	-	-	-	-	172	172	-
Stage 2	-	-	-	-	-	-	298	297	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1393	-	-	1412	-	-	504	492	889
Stage 1	-	-	-	-	-	-	830	756	-
Stage 2	-	-	-	-	-	-	711	668	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1393	-	-	1412	-	-	471	469	889
Mov Cap-2 Maneuver	-	-	-	-	-	-	471	469	-
Stage 1	-	-	-	-	-	-	825	752	-
Stage 2	-	-	-	-	-	-	662	641	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	1.8	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	707	1393	-	-	1412	-	-	497
HCM Lane V/C Ratio	0.117	0.005	-	-	0.041	-	-	0.066
HCM Control Delay (s)	10.8	7.6	-	-	7.7	-	-	12.8
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	11	13	6
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	12	14	7

Major/Minor	Minor2		
Conflicting Flow All	496	470	172
Stage 1	288	288	-
Stage 2	208	182	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	484	492	872
Stage 1	720	674	-
Stage 2	794	749	-
Platoon blocked, %			
Mov Cap-1 Maneuver	426	469	872
Mov Cap-2 Maneuver	426	469	-
Stage 1	716	646	-
Stage 2	723	745	-

Approach	SB
HCM Control Delay, s	12.8
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	21	1	2	0	0	4	1	0	3	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	23	1	2	0	0	4	1	0	3	2	0
Number of Lanes	0	1	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	8	7.8	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	60%	100%	75%	0%	60%	0%
Vol Thru, %	40%	0%	8%	80%	40%	0%
Vol Right, %	0%	0%	17%	20%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	12	12	5	5	130
LT Vol	2	0	1	4	2	0
Through Vol	0	0	2	1	0	130
RT Vol	3	12	9	0	3	0
Lane Flow Rate	5	13	13	5	5	141
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.007	0.019	0.018	0.007	0.007	0.153
Departure Headway (Hd)	4.82	5.301	5.059	4.7	4.893	3.893
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	739	672	703	755	731	920
Service Time	2.874	3.062	2.82	2.771	2.623	1.622
HCM Lane V/C Ratio	0.007	0.019	0.018	0.007	0.007	0.153
HCM Control Delay	7.9	8.2	7.9	7.8	7.7	7.3
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0	0.1	0.1	0	0	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	2	130
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	2	141
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	7.3
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	14	16	48	0	4	14	25	0	30	270	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	17	52	0	4	15	27	0	33	293	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.6	8.3	9.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	18%	0%	18%	9%	4%	0%
Vol Thru, %	82%	97%	21%	33%	96%	94%
Vol Right, %	0%	3%	62%	58%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	165	139	78	43	94	96
LT Vol	135	135	16	14	90	90
Through Vol	0	4	48	25	0	6
RT Vol	30	0	14	4	4	0
Lane Flow Rate	179	151	85	47	102	104
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.256	0.211	0.115	0.064	0.147	0.149
Departure Headway (Hd)	5.138	5.026	4.876	4.936	5.19	5.124
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	698	713	733	722	690	698
Service Time	2.879	2.767	2.922	2.989	2.934	2.868
HCM Lane V/C Ratio	0.256	0.212	0.116	0.065	0.148	0.149
HCM Control Delay	9.7	9.1	8.6	8.3	8.8	8.8
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	1	0.8	0.4	0.2	0.5	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	4	180	6
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	196	7
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.8
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	78	22	0	130	87	0	25	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	85	24	0	141	95	0	27	109
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.2	9.5	8.7
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	60%	0%	0%	0%	100%
Vol Right, %	40%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	217	78	22	25	100
LT Vol	130	0	0	0	100
Through Vol	87	0	22	0	0
RT Vol	0	78	0	25	0
Lane Flow Rate	236	85	24	27	109
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.299	0.139	0.031	0.042	0.152
Departure Headway (Hd)	4.567	5.912	4.705	5.539	5.037
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	788	606	760	648	713
Service Time	2.587	3.647	2.44	3.262	2.759
HCM Lane V/C Ratio	0.299	0.14	0.032	0.042	0.153
HCM Control Delay	9.5	9.6	7.6	8.5	8.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	1.3	0.5	0.1	0.1	0.5

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	45	72	9	0	34	82	30	0	11	415	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	49	78	10	0	37	89	33	0	12	451	57
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	10.8	11.1	12.7
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	5%	0%	100%	0%	100%	0%	23%	0%
Vol Thru, %	95%	80%	0%	89%	0%	73%	77%	75%
Vol Right, %	0%	20%	0%	11%	0%	27%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	219	260	45	81	34	112	109	112
LT Vol	208	208	0	72	0	82	84	84
Through Vol	0	52	0	9	0	30	0	28
RT Vol	11	0	45	0	34	0	25	0
Lane Flow Rate	238	282	49	88	37	122	118	121
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.388	0.448	0.099	0.164	0.075	0.222	0.208	0.203
Departure Headway (Hd)	5.883	5.716	7.305	6.717	7.264	6.564	6.336	6.041
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	610	629	490	533	492	545	565	593
Service Time	3.626	3.459	5.064	4.475	5.021	4.321	4.088	3.793
HCM Lane V/C Ratio	0.39	0.448	0.1	0.165	0.075	0.224	0.209	0.204
HCM Control Delay	12.3	13	10.9	10.8	10.6	11.2	10.8	10.3
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.8	2.3	0.3	0.6	0.2	0.8	0.8	0.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	25	167	28
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	182	30
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.5
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	7	8	6	0	41	10	36	0	27	351	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	9	7	0	45	11	39	0	29	382	38
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.5	10.1	11
HCM LOS	A	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	13%	0%	33%	47%	10%	0%
Vol Thru, %	87%	83%	38%	11%	90%	97%
Vol Right, %	0%	17%	29%	41%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	203	211	21	87	279	259
LT Vol	176	176	8	10	252	252
Through Vol	0	35	6	36	0	7
RT Vol	27	0	7	41	27	0
Lane Flow Rate	220	229	23	95	303	282
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.338	0.34	0.04	0.157	0.452	0.415
Departure Headway (Hd)	5.635	5.35	6.241	5.988	5.371	5.303
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	643	664	577	602	664	670
Service Time	3.335	3.15	4.246	3.99	3.164	3.097
HCM Lane V/C Ratio	0.342	0.345	0.04	0.158	0.456	0.421
HCM Control Delay	11.2	10.9	9.5	10.1	12.6	11.9
HCM Lane LOS	B	B	A	B	B	B
HCM 95th-tile Q	1.5	1.5	0.1	0.6	2.4	2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	27	504	7
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	29	548	8
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	12.3
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	6	83	2	0	30	86	45	0	11	147	99
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	90	2	0	33	93	49	0	12	160	108
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.2	9.7	10.3
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	7%	19%	39%
Vol Thru, %	57%	91%	53%	55%
Vol Right, %	39%	2%	28%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	257	91	161	153
LT Vol	147	83	86	84
Through Vol	99	2	45	10
RT Vol	11	6	30	59
Lane Flow Rate	279	99	175	166
Geometry Grp	1	1	1	1
Degree of Util (X)	0.358	0.144	0.242	0.231
Departure Headway (Hd)	4.613	5.223	4.984	4.997
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	774	679	712	712
Service Time	2.681	3.315	3.068	3.076
HCM Lane V/C Ratio	0.36	0.146	0.246	0.233
HCM Control Delay	10.3	9.2	9.7	9.6
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.6	0.5	0.9	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	59	84	10
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	64	91	11
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.6
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	23.7
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	72	102	55	0	37	124	93	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	78	111	60	0	40	135	101	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	13.4	13.7
HCM LOS	B	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	15%	9%
Vol Thru, %	45%	49%	81%
Vol Right, %	24%	37%	10%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	229	254	529
LT Vol	102	124	427
Through Vol	55	93	55
RT Vol	72	37	47
Lane Flow Rate	249	276	575
Geometry Grp	1	1	1
Degree of Util (X)	0.416	0.45	0.862
Departure Headway (Hd)	6.016	5.866	5.399
Convergence, Y/N	Yes	Yes	Yes
Cap	595	610	667
Service Time	4.092	3.94	3.453
HCM Lane V/C Ratio	0.418	0.452	0.862
HCM Control Delay	13.4	13.7	32.9
HCM Lane LOS	B	B	D
HCM 95th-tile Q	2	2.3	10

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	47	427	55
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	51	464	60
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	32.9
HCM LOS	D

Lane

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	21	303	427	289	80	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	329	464	314	87	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	778	0	-	0	996	621
Stage 1	-	-	-	-	621	-
Stage 2	-	-	-	-	375	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	839	-	-	-	271	487
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	695	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	839	-	-	-	264	487
Mov Cap-2 Maneuver	-	-	-	-	264	-
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	676	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	24.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	839	-	-	-	282
HCM Lane V/C Ratio	0.027	-	-	-	0.358
HCM Control Delay (s)	9.4	-	-	-	24.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.6

Intersection	
Intersection Delay, s/veh	53.1
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	310	70	0	35	481	0	0	211	0	44
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	337	76	0	38	523	0	0	229	0	48
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	53.9	76	45.8
HCM LOS	F	F	E

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	83%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	17%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	255	310	70	35	481	141	292	45
LT Vol	0	310	0	0	481	0	292	0
Through Vol	44	0	70	0	0	0	0	45
RT Vol	211	0	0	35	0	141	0	0
Lane Flow Rate	277	337	76	38	523	153	317	49
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.809	0.927	0.194	0.113	1	0.411	0.808	0.115
Departure Headway (Hd)	10.506	9.901	9.198	10.681	10.156	9.665	9.165	8.464
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	344	364	389	337	361	372	394	422
Service Time	8.296	7.689	6.986	8.381	7.856	7.443	6.942	6.242
HCM Lane V/C Ratio	0.805	0.926	0.195	0.113	1.449	0.411	0.805	0.116
HCM Control Delay	45.8	62.9	14.2	14.7	80.5	19.1	41	12.3
HCM Lane LOS	E	F	B	B	F	C	E	B
HCM 95th-tile Q	6.9	9.7	0.7	0.4	11.5	2	7.2	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	141	292	45
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	153	317	49
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	31.8
HCM LOS	D

Lane

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	10	0	2	0	3	61	19	471	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	2	0	3	66	21	512	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1473	1728	536	1193	1741	257	1072	0	0
Stage 1	1174	1174	-	554	554	-	-	-	-
Stage 2	299	554	-	639	1187	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	88	88	489	142	86	742	646	-	-
Stage 1	204	264	-	484	512	-	-	-	-
Stage 2	685	512	-	431	260	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	73	80	489	132	79	742	646	-	-
Mov Cap-2 Maneuver	73	80	-	132	79	-	-	-	-
Stage 1	197	249	-	468	495	-	-	-	-
Stage 2	600	495	-	405	246	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	54.9	12.8	0.4
HCM LOS	F	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	646	-	-	85	533	1049	-	-
HCM Lane V/C Ratio	0.032	-	-	0.153	0.131	0.055	-	-
HCM Control Delay (s)	10.8	-	-	54.9	12.8	8.6	-	-
HCM Lane LOS	B	-	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.4	0.2	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	53	963	23
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	58	1047	25

Major/Minor	Major2		
Conflicting Flow All	513	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1049	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1049	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	6	0	3	0	0	43	1	449	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	3	0	0	47	1	488	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1317	1564	491	1072	1563	246	982	0	0
Stage 1	1071	1071	-	492	492	-	-	-	-
Stage 2	246	493	-	580	1071	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	115	111	523	175	111	754	699	-	-
Stage 1	236	295	-	527	546	-	-	-	-
Stage 2	736	545	-	467	295	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	104	106	523	168	106	754	699	-	-
Mov Cap-2 Maneuver	104	106	-	168	106	-	-	-	-
Stage 1	236	283	-	526	545	-	-	-	-
Stage 2	689	544	-	445	283	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	32.2	10.1	0
HCM LOS	D	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	699	-	-	142	754	1069	-	-
HCM Lane V/C Ratio	0.002	-	-	0.069	0.062	0.042	-	-
HCM Control Delay (s)	10.2	0	-	32.2	10.1	8.5	-	-
HCM Lane LOS	B	A	-	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	41	903	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	45	982	0

Major/Minor	Major2		
Conflicting Flow All	491	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1069	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1069	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	5	234	22	38	260	7	37	5	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	254	24	41	283	8	40	5	60

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	290	0	0	278	0	0	652	650	266
Stage 1	-	-	-	-	-	-	277	277	-
Stage 2	-	-	-	-	-	-	375	373	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1272	-	-	1285	-	-	381	388	773
Stage 1	-	-	-	-	-	-	729	681	-
Stage 2	-	-	-	-	-	-	646	618	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1272	-	-	1285	-	-	364	374	773
Mov Cap-2 Maneuver	-	-	-	-	-	-	364	374	-
Stage 1	-	-	-	-	-	-	726	678	-
Stage 2	-	-	-	-	-	-	615	598	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	1	13.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	521	1272	-	-	1285	-	-	441
HCM Lane V/C Ratio	0.202	0.004	-	-	0.032	-	-	0.042
HCM Control Delay (s)	13.7	7.8	-	-	7.9	-	-	13.5
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0.1	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	6	4	7
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	7	4	8

Major/Minor	Minor2		
Conflicting Flow All	679	658	286
Stage 1	369	369	-
Stage 2	310	289	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	366	384	753
Stage 1	651	621	-
Stage 2	700	673	-
Platoon blocked, %			
Mov Cap-1 Maneuver	325	370	753
Mov Cap-2 Maneuver	325	370	-
Stage 1	648	601	-
Stage 2	638	670	-

Approach	SB
HCM Control Delay, s	13.5
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	13	252	31	70	274	21	29	29	126
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	274	34	76	298	23	32	32	137

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	321	0	0	308	0	0	805	792	291
Stage 1	-	-	-	-	-	-	319	319	-
Stage 2	-	-	-	-	-	-	486	473	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1239	-	-	1253	-	-	301	322	748
Stage 1	-	-	-	-	-	-	693	653	-
Stage 2	-	-	-	-	-	-	563	558	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1239	-	-	1253	-	-	253	299	748
Mov Cap-2 Maneuver	-	-	-	-	-	-	253	299	-
Stage 1	-	-	-	-	-	-	685	646	-
Stage 2	-	-	-	-	-	-	483	524	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	1.5	17.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	484	1239	-	-	1253	-	-	290
HCM Lane V/C Ratio	0.413	0.011	-	-	0.061	-	-	0.229
HCM Control Delay (s)	17.6	7.9	-	-	8.1	-	-	21.1
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	2	0	-	-	0.2	-	-	0.9

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	15	35	11
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	16	38	12

Major/Minor	Minor2		
Conflicting Flow All	864	797	309
Stage 1	461	461	-
Stage 2	403	336	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	274	319	731
Stage 1	581	565	-
Stage 2	624	642	-
Platoon blocked, %			
Mov Cap-1 Maneuver	195	296	731
Mov Cap-2 Maneuver	195	296	-
Stage 1	574	531	-
Stage 2	479	635	-

Approach	SB
HCM Control Delay, s	21.1
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	82	2	21	0	0	6	3	0	12	22	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	89	2	23	0	0	7	3	0	13	24	0
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	8.8	8.1	8.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	35%	98%	0%	0%	39%	0%
Vol Thru, %	65%	2%	0%	67%	61%	0%
Vol Right, %	0%	0%	100%	33%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	84	21	9	28	148
LT Vol	22	2	0	6	17	0
Through Vol	0	0	21	3	0	148
RT Vol	12	82	0	0	11	0
Lane Flow Rate	37	91	23	10	30	161
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.053	0.141	0.028	0.014	0.043	0.188
Departure Headway (Hd)	5.139	5.551	4.359	5.003	5.103	4.204
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	698	648	823	717	704	856
Service Time	3.157	3.269	2.076	3.024	2.816	1.917
HCM Lane V/C Ratio	0.053	0.14	0.028	0.014	0.043	0.188
HCM Control Delay	8.4	9.2	7.2	8.1	8	7.9
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.5	0.1	0	0.1	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	11	17	148
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	12	18	161
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	7.9
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	11	34	63	0	5	26	12	0	18	254	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	37	68	0	5	28	13	0	20	276	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.9	8.6	9.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	12%	0%	10%	12%	3%	0%
Vol Thru, %	88%	98%	31%	60%	97%	93%
Vol Right, %	0%	2%	58%	28%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	145	129	108	43	106	111
LT Vol	127	127	34	26	103	103
Through Vol	0	2	63	12	0	8
RT Vol	18	0	11	5	3	0
Lane Flow Rate	158	140	117	47	115	121
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.229	0.201	0.159	0.067	0.168	0.174
Departure Headway (Hd)	5.232	5.158	4.89	5.184	5.248	5.183
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	684	693	730	687	681	689
Service Time	2.984	2.911	2.945	3.249	3.002	2.937
HCM Lane V/C Ratio	0.231	0.202	0.16	0.068	0.169	0.176
HCM Control Delay	9.5	9.2	8.9	8.6	9.1	9
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.9	0.7	0.6	0.2	0.6	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	206	8
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	224	9
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	87	49	0	167	78	0	35	242
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	95	53	0	182	85	0	38	263
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.7	10.8	10.8
HCM LOS	A	B	B

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	68%	0%	0%	0%	100%
Vol Right, %	32%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	245	87	49	35	242
LT Vol	167	0	0	0	242
Through Vol	78	0	49	0	0
RT Vol	0	87	0	35	0
Lane Flow Rate	266	95	53	38	263
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.365	0.168	0.077	0.06	0.38
Departure Headway (Hd)	4.934	6.396	5.185	5.707	5.203
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	727	558	685	625	689
Service Time	2.987	4.17	2.958	3.46	2.956
HCM Lane V/C Ratio	0.366	0.17	0.077	0.061	0.382
HCM Control Delay	10.8	10.5	8.4	8.8	11.1
HCM Lane LOS	B	B	A	A	B
HCM 95th-tile Q	1.7	0.6	0.2	0.2	1.8

Intersection	
Intersection Delay, s/veh	13.6
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	31	79	14	0	70	91	31	0	23	345	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	34	86	15	0	76	99	34	0	25	375	80
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	12	12.4	14.1
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	12%	0%	100%	0%	100%	0%	18%	0%
Vol Thru, %	88%	70%	0%	85%	0%	75%	82%	86%
Vol Right, %	0%	30%	0%	15%	0%	25%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	196	247	31	93	70	122	226	214
LT Vol	173	173	0	79	0	91	185	185
Through Vol	0	74	0	14	0	31	0	29
RT Vol	23	0	31	0	70	0	41	0
Lane Flow Rate	212	268	34	101	76	133	245	232
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.386	0.467	0.076	0.211	0.166	0.263	0.448	0.412
Departure Headway (Hd)	6.547	6.273	8.131	7.509	7.947	7.252	6.575	6.386
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	546	568	443	481	454	499	544	559
Service Time	4.342	4.069	5.831	5.209	5.647	4.952	4.369	4.18
HCM Lane V/C Ratio	0.388	0.472	0.077	0.21	0.167	0.267	0.45	0.415
HCM Control Delay	13.5	14.5	11.5	12.2	12.2	12.5	14.7	13.6
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.8	2.5	0.2	0.8	0.6	1	2.3	2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	41	369	29
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	45	401	32
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	14.2
HCM LOS	B

Lane

EXISTING PLUS PROJECT WITH MITIGATION

Project Title: **Redondo Beach Waterfront**
Intersection: **6 Valley Dr/Francisca Ave & Herondo St**
Description: **Existing + Project + Mitigations**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	22	1,600	0.014	N-S(1):	0.210 *
	TH	1.00	88	1,600	0.055	N-S(2):	0.194
	LT	1.00	137	1,600	0.086 *	E-W(1):	0.110 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.088
	TH	2.00	283	3,200	0.088		
	LT	1.00	47	1,600	0.029 *	V/C:	0.320
Northbound	RT	0.27	59	425	0.124 *	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	0.73	163	1,175	0.139		
Eastbound	RT	0.00	45	0	0.000	ICU:	0.420
	TH	2.00	215	3,200	0.081 *		
	LT	0.00	0	0	0.000	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	44	1,600	0.028	N-S(1):	0.232
	TH	1.00	286	1,600	0.179 *	N-S(2):	0.335 *
	LT	1.00	138	1,600	0.086	E-W(1):	0.137
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.146 *
	TH	2.00	468	3,200	0.146 *		
	LT	1.00	34	1,600	0.021	V/C:	0.481
Northbound	RT	0.17	43	275	0.146	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	0.83	207	1,325	0.156 *		
Eastbound	RT	0.00	69	0	0.000	ICU:	0.581
	TH	2.00	303	3,200	0.116		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **7 Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St**
Description: **Existing + Project + Mitigations**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	177	1,600	0.111	N-S(1):	0.561 *
	TH	2.00	923	3,200	0.288	N-S(2):	0.302
	LT	1.00	153	1,600	0.096 *	E-W(1):	0.173
Westbound	RT	1.00	401	1,600	0.155 *	E-W(2):	0.235 *
	TH	2.00	199	3,200	0.062		
	LT	2.00	267	2,880	0.093	V/C:	0.796
Northbound	RT	1.00	128	1,600	0.034	Lost Time:	0.100
	TH	3.00	2,231	4,800	0.465 *	ITS:	0.000
	LT	1.00	23	1,600	0.014		
Eastbound	RT	1.00	56	1,600	0.028	ICU:	0.896
	TH	2.00	256	3,200	0.080		
	LT	1.00	128	1,600	0.080 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	540	1,600	0.338	N-S(1):	0.432
	TH	2.00	1,893	3,200	0.592 *	N-S(2):	0.641 *
	LT	1.00	214	1,600	0.134	E-W(1):	0.207 *
Westbound	RT	1.00	266	1,600	0.033	E-W(2):	0.162
	TH	2.00	318	3,200	0.099		
	LT	2.00	336	2,880	0.117 *	V/C:	0.848
Northbound	RT	1.00	242	1,600	0.093	Lost Time:	0.100
	TH	3.00	1,428	4,800	0.298	ITS:	0.000
	LT	1.00	78	1,600	0.049 *		
Eastbound	RT	1.00	96	1,600	0.060	ICU:	0.948
	TH	2.00	287	3,200	0.090 *		
	LT	1.00	100	1,600	0.063	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **10 Pacific Coast Hwy & Catalina Ave**
Description: **Existing + Project + Mitigations**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000	N-S(1):	0.564 *
	TH	2.00	1,073	3,200	0.336	N-S(2):	0.340
	LT	0.00	0	0	0.000 *	E-W(1):	0.119
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.135 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.699
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,804	3,200	0.564 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.02	4	33	0.119	ICU:	0.799
	TH	0.00	0	0	0.000		
	LT	2.98	578	4,290	0.135 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	2	0	0.000	N-S(1):	0.420
	TH	2.00	2,067	3,200	0.647 *	N-S(2):	0.656 *
	LT	0.00	0	0	0.000	E-W(1):	0.085
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.100 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.756
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,343	3,200	0.420	ITS:	0.000
	LT	1.00	15	1,600	0.009 *		
Eastbound	RT	0.15	22	245	0.085	ICU:	0.856
	TH	0.00	0	0	0.000		
	LT	2.85	409	4,099	0.100 *	LOS:	D

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **19 Pacific Coast Hwy & Beryl St**
Description: **Existing + Project + Mitigations**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	25	1,600	0.006	N-S(1):	0.542 *
	TH	2.00	1,035	3,200	0.323	N-S(2):	0.351
	LT	1.00	19	1,600	0.012 *	E-W(1):	0.125 *
Westbound	RT	1.00	28	1,600	0.012	E-W(2):	0.085
	TH	1.00	106	1,600	0.066		
	LT	1.00	51	1,600	0.032 *	V/C:	0.667
Northbound	RT	0.00	45	0	0.000	Lost Time:	0.100
	TH	2.00	1,652	3,200	0.530 *	ITS:	0.000
	LT	1.00	44	1,600	0.028		
Eastbound	RT	0.00	27	0	0.000	ICU:	0.767
	TH	1.00	121	1,600	0.093 *		
	LT	1.00	31	1,600	0.019	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	65	1,600	0.014	N-S(1):	0.418
	TH	2.00	1,883	3,200	0.588 *	N-S(2):	0.619 *
	LT	1.00	41	1,600	0.026	E-W(1):	0.189 *
Westbound	RT	1.00	41	1,600	0.013	E-W(2):	0.185
	TH	1.00	211	1,600	0.132		
	LT	1.00	60	1,600	0.038 *	V/C:	0.808
Northbound	RT	0.00	46	0	0.000	Lost Time:	0.100
	TH	2.00	1,209	3,200	0.392	ITS:	0.000
	LT	1.00	49	1,600	0.031 *		
Eastbound	RT	0.00	62	0	0.000	ICU:	0.908
	TH	1.00	180	1,600	0.151 *		
	LT	1.00	84	1,600	0.053	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **26 Pacific Coast Hwy & Torrance Blvd**
Description: **Existing + Project + Mitigations**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.522 *
	TH	2.00	862	3,200	0.276	N-S(2):	0.317
	LT	1.00	228	1,600	0.143 *	E-W(1):	0.170 *
Westbound	RT	1.00	227	1,600	0.071	E-W(2):	0.138
	TH	2.00	349	3,200	0.109		
	LT	1.00	122	1,600	0.076 *	V/C:	0.692
Northbound	RT	1.00	66	1,600	0.003	Lost Time:	0.100
	TH	2.00	1,212	3,200	0.379 *	ITS:	0.000
	LT	1.00	66	1,600	0.041		
Eastbound	RT	1.00	55	1,600	0.000	ICU:	0.792
	TH	2.00	300	3,200	0.094 *		
	LT	1.00	46	1,600	0.029	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	39	0	0.000	N-S(1):	0.491
	TH	2.00	1,418	3,200	0.455 *	N-S(2):	0.528 *
	LT	1.00	309	1,600	0.193	E-W(1):	0.221 *
Westbound	RT	1.00	301	1,600	0.092	E-W(2):	0.189
	TH	2.00	464	3,200	0.145		
	LT	1.00	156	1,600	0.098 *	V/C:	0.749
Northbound	RT	1.00	89	1,600	0.007	Lost Time:	0.100
	TH	2.00	954	3,200	0.298	ITS:	0.000
	LT	1.00	117	1,600	0.073 *		
Eastbound	RT	1.00	104	1,600	0.000	ICU:	0.849
	TH	2.00	393	3,200	0.123 *		
	LT	1.00	71	1,600	0.044	LOS:	D

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **36 Pacific Coast Hwy & Palos Verdes Blvd**
Description: **Existing + Project + Mitigations**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	261	1,600	0.034	N-S(1):	0.310 *
	TH	2.00	555	3,200	0.173	N-S(2):	0.273
	LT	1.00	62	1,600	0.039 *	E-W(1):	0.252
Westbound	RT	0.00	98	0	0.000	E-W(2):	0.405 *
	TH	2.00	372	3,200	0.147 *		
	LT	1.00	58	1,600	0.036	V/C:	0.715
Northbound	RT	1.00	79	1,600	0.031	Lost Time:	0.100
	TH	2.00	866	3,200	0.271 *	ITS:	0.000
	LT	1.00	160	1,600	0.100		
Eastbound	RT	0.00	157	0	0.000	ICU:	0.815
	TH	2.00	534	3,200	0.216		
	LT	1.00	413	1,600	0.258 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	356	1,600	0.153	N-S(1):	0.344
	TH	2.00	969	3,200	0.303 *	N-S(2):	0.442 *
	LT	1.00	85	1,600	0.053	E-W(1):	0.237
Westbound	RT	0.00	135	0	0.000	E-W(2):	0.325 *
	TH	2.00	464	3,200	0.187 *		
	LT	1.00	89	1,600	0.056	V/C:	0.767
Northbound	RT	1.00	76	1,600	0.020	Lost Time:	0.100
	TH	2.00	932	3,200	0.291	ITS:	0.000
	LT	1.00	223	1,600	0.139 *		
Eastbound	RT	0.00	188	0	0.000	ICU:	0.867
	TH	2.00	390	3,200	0.181		
	LT	1.00	221	1,600	0.138 *	LOS:	D

* - Denotes critical movement

CUMULATIVE PLUS PROJECT WITH MITIGATION

Project Title: **Redondo Beach Waterfront**
Intersection: **6 Valley Dr/Francisca Ave & Herondo St**
Description: **Cumulative + Project + Mitigations**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	22	1,600	0.014	N-S(1):	0.215 *
	TH	1.00	90	1,600	0.056	N-S(2):	0.198
	LT	1.00	140	1,600	0.088 *	E-W(1):	0.168
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.181 *
	TH	1.00	289	1,600	0.181 *		
	LT	1.00	48	1,600	0.030	V/C:	0.396
Northbound	RT	0.26	60	423	0.127 *	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	0.74	167	1,177	0.142		
Eastbound	RT	1.00	46	1,600	0.029	ICU:	0.496
	TH	1.00	220	1,600	0.138		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	45	1,600	0.028	N-S(1):	0.236
	TH	1.00	292	1,600	0.183 *	N-S(2):	0.342 *
	LT	1.00	141	1,600	0.088	E-W(1):	0.216
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.301 *
	TH	1.00	481	1,600	0.301 *		
	LT	1.00	35	1,600	0.022	V/C:	0.643
Northbound	RT	0.17	44	276	0.148	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	0.83	211	1,324	0.159 *		
Eastbound	RT	1.00	70	1,600	0.044	ICU:	0.743
	TH	1.00	310	1,600	0.194		
	LT	0.00	0	0	0.000 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **7 Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St**
Description: **Cumulative + Project + Mitigations**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	183	1,600	0.114	N-S(1):	0.577 *
	TH	2.00	954	3,200	0.298	N-S(2):	0.312
	LT	1.00	156	1,600	0.098 *	E-W(1):	0.177
Westbound	RT	1.00	410	1,600	0.159 *	E-W(2):	0.242 *
	TH	2.00	204	3,200	0.064		
	LT	2.00	273	2,880	0.095	V/C:	0.819
Northbound	RT	1.00	130	1,600	0.034	Lost Time:	0.100
	TH	3.00	2,299	4,800	0.479 *	ITS:	0.000
	LT	1.00	23	1,600	0.014		
Eastbound	RT	1.00	57	1,600	0.028	ICU:	0.919
	TH	2.00	262	3,200	0.082		
	LT	1.00	132	1,600	0.083 *	LOS:	E

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	561	1,600	0.351	N-S(1):	0.446
	TH	2.00	1,972	3,200	0.616 *	N-S(2):	0.666 *
	LT	1.00	219	1,600	0.137	E-W(1):	0.212 *
Westbound	RT	1.00	272	1,600	0.033	E-W(2):	0.169
	TH	2.00	329	3,200	0.103		
	LT	2.00	346	2,880	0.120 *	V/C:	0.878
Northbound	RT	1.00	249	1,600	0.096	Lost Time:	0.100
	TH	3.00	1,482	4,800	0.309	ITS:	0.000
	LT	1.00	80	1,600	0.050 *		
Eastbound	RT	1.00	98	1,600	0.061	ICU:	0.978
	TH	2.00	295	3,200	0.092 *		
	LT	1.00	106	1,600	0.066	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **10 Pacific Coast Hwy & Catalina Ave**
Description: **Cumulative + Project + Mitigations**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000	N-S(1):	0.582 *
	TH	2.00	1,107	3,200	0.346	N-S(2):	0.350
	LT	0.00	0	0	0.000 *	E-W(1):	0.122
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.138 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.720
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,863	3,200	0.582 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.02	4	32	0.122	ICU:	0.820
	TH	0.00	0	0	0.000		
	LT	2.98	591	4,291	0.138 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	2	0	0.000	N-S(1):	0.436
	TH	2.00	2,149	3,200	0.672 *	N-S(2):	0.681 *
	LT	0.00	0	0	0.000	E-W(1):	0.087
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.102 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.783
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,395	3,200	0.436	ITS:	0.000
	LT	1.00	15	1,600	0.009 *		
Eastbound	RT	0.15	22	240	0.087	ICU:	0.883
	TH	0.00	0	0	0.000		
	LT	2.85	418	4,104	0.102 *	LOS:	D

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **19 Pacific Coast Hwy & Beryl St**
Description: **Cumulative + Project + Mitigations**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	27	1,600	0.007	N-S(1):	0.560 *
	TH	2.00	1,067	3,200	0.333	N-S(2):	0.362
	LT	1.00	19	1,600	0.012 *	E-W(1):	0.127 *
Westbound	RT	1.00	29	1,600	0.012	E-W(2):	0.090
	TH	1.00	110	1,600	0.069		
	LT	1.00	52	1,600	0.033 *	V/C:	0.687
Northbound	RT	0.00	46	0	0.000	Lost Time:	0.100
	TH	2.00	1,707	3,200	0.548 *	ITS:	0.000
	LT	1.00	46	1,600	0.029		
Eastbound	RT	0.00	27	0	0.000	ICU:	0.787
	TH	1.00	124	1,600	0.094 *		
	LT	1.00	33	1,600	0.021	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	71	1,600	0.017	N-S(1):	0.433
	TH	2.00	1,956	3,200	0.611 *	N-S(2):	0.644 *
	LT	1.00	42	1,600	0.026	E-W(1):	0.194 *
Westbound	RT	1.00	42	1,600	0.013	E-W(2):	0.194 *
	TH	1.00	222	1,600	0.139 *		
	LT	1.00	61	1,600	0.038 *	V/C:	0.838
Northbound	RT	0.00	47	0	0.000	Lost Time:	0.100
	TH	2.00	1,256	3,200	0.407	ITS:	0.000
	LT	1.00	52	1,600	0.033 *		
Eastbound	RT	0.00	64	0	0.000	ICU:	0.938
	TH	1.00	186	1,600	0.156 *		
	LT	1.00	88	1,600	0.055 *	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **26 Pacific Coast Hwy & Torrance Blvd**
Description: **Cumulative + Project + Mitigations**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.540 *
	TH	2.00	896	3,200	0.287	N-S(2):	0.331
	LT	1.00	233	1,600	0.146 *	E-W(1):	0.178 *
Westbound	RT	1.00	232	1,600	0.072	E-W(2):	0.141
	TH	2.00	359	3,200	0.112		
	LT	1.00	131	1,600	0.082 *	V/C:	0.718
Northbound	RT	1.00	77	1,600	0.007	Lost Time:	0.100
	TH	2.00	1,260	3,200	0.394 *	ITS:	0.000
	LT	1.00	70	1,600	0.044		
Eastbound	RT	1.00	57	1,600	0.000	ICU:	0.818
	TH	2.00	308	3,200	0.096 *		
	LT	1.00	47	1,600	0.029	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	40	0	0.000	N-S(1):	0.512
	TH	2.00	1,486	3,200	0.477 *	N-S(2):	0.554 *
	LT	1.00	316	1,600	0.198	E-W(1):	0.237 *
Westbound	RT	1.00	308	1,600	0.094	E-W(2):	0.198
	TH	2.00	485	3,200	0.152		
	LT	1.00	176	1,600	0.110 *	V/C:	0.791
Northbound	RT	1.00	104	1,600	0.010	Lost Time:	0.100
	TH	2.00	1,005	3,200	0.314	ITS:	0.000
	LT	1.00	123	1,600	0.077 *		
Eastbound	RT	1.00	109	1,600	0.000	ICU:	0.891
	TH	2.00	406	3,200	0.127 *		
	LT	1.00	73	1,600	0.046	LOS:	D

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **36 Pacific Coast Hwy & Palos Verdes Blvd**
Description: **Cumulative + Project + Mitigations**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	267	1,600	0.035	N-S(1):	0.335 *
	TH	2.00	581	3,200	0.182	N-S(2):	0.291
	LT	1.00	72	1,600	0.045 *	E-W(1):	0.269
Westbound	RT	0.00	100	0	0.000	E-W(2):	0.414 *
	TH	2.00	380	3,200	0.150 *		
	LT	1.00	73	1,600	0.046	V/C:	0.749
Northbound	RT	1.00	82	1,600	0.028	Lost Time:	0.100
	TH	2.00	927	3,200	0.290 *	ITS:	0.000
	LT	1.00	174	1,600	0.109		
Eastbound	RT	0.00	160	0	0.000	ICU:	0.849
	TH	2.00	552	3,200	0.223		
	LT	1.00	423	1,600	0.264 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	365	1,600	0.157	N-S(1):	0.385
	TH	2.00	1,037	3,200	0.324 *	N-S(2):	0.472 *
	LT	1.00	118	1,600	0.074	E-W(1):	0.265
Westbound	RT	0.00	138	0	0.000	E-W(2):	0.333 *
	TH	2.00	474	3,200	0.191 *		
	LT	1.00	118	1,600	0.074	V/C:	0.805
Northbound	RT	1.00	74	1,600	0.009	Lost Time:	0.100
	TH	2.00	994	3,200	0.311	ITS:	0.000
	LT	1.00	236	1,600	0.148 *		
Eastbound	RT	0.00	192	0	0.000	ICU:	0.905
	TH	2.00	419	3,200	0.191		
	LT	1.00	227	1,600	0.142 *	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **38 Pacific Coast Hwy & 10th/Aviation**
Description: **Cumulative + Project + Mitigations**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.515 *
	TH	3.00	709	4,800	0.148	N-S(2):	0.154
	LT	1.00	142	1,600	0.089 *	E-W(1):	0.183 *
Westbound	RT	1.00	158	1,600	0.010	E-W(2):	0.164
	TH	0.01	3	18	0.164		
	LT	1.99	522	2,864	0.182 *	V/C:	0.698
Northbound	RT	1.00	675	1,600	0.331	Lost Time:	0.100
	TH	3.00	2,045	4,800	0.426 *	ITS:	0.000
	LT	1.00	9	1,600	0.006		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.798
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.394
	TH	3.00	1,945	4,800	0.405 *	N-S(2):	0.413 *
	LT	1.00	227	1,600	0.142	E-W(1):	0.263 *
Westbound	RT	1.00	223	1,600	0.000	E-W(2):	0.236
	TH	0.03	10	42	0.236		
	LT	1.97	744	2,842	0.262 *	V/C:	0.676
Northbound	RT	1.00	529	1,600	0.200	Lost Time:	0.100
	TH	3.00	1,209	4,800	0.252	ITS:	0.000
	LT	1.00	13	1,600	0.008 *		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.776
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

* - Denotes critical movement

EXISTING PLUS PROJECT ALTERNATIVE 5 (NO PACIFIC RECONNECTION)

Project Title: **Redondo Beach Waterfront**
Intersection: **4 Harbor Dr/Hermosa Ave & Herondo St**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.308 *
	TH	1.00	139	1,600	0.087	N-S(2):	0.087
	LT	1.00	117	1,600	0.073 *	E-W(1):	0.082
Westbound	RT	1.00	288	1,600	0.143 *	E-W(2):	0.144 *
	TH	0.00	0	0	0.000		
	LT	1.00	131	1,600	0.082	V/C:	0.452
Northbound	RT	0.00	90	0	0.000	Lost Time:	0.100
	TH	1.00	286	1,600	0.235 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.552
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.336 *
	TH	1.00	365	1,600	0.228	N-S(2):	0.229
	LT	1.00	159	1,600	0.099 *	E-W(1):	0.159 *
Westbound	RT	1.00	188	1,600	0.068	E-W(2):	0.068
	TH	0.00	0	0	0.000		
	LT	1.00	254	1,600	0.159 *	V/C:	0.495
Northbound	RT	0.00	165	0	0.000	Lost Time:	0.100
	TH	1.00	213	1,600	0.237 *	ITS:	0.000
	LT	0.00	1	1,600	0.001		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.595
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **7 Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	177	1,600	0.111	N-S(1):	0.561 *
	TH	2.00	923	3,200	0.288	N-S(2):	0.302
	LT	1.00	153	1,600	0.096 *	E-W(1):	0.253 *
Westbound	RT	1.00	401	1,600	0.155	E-W(2):	0.235
	TH	1.00	199	1,600	0.124		
	LT	2.00	267	2,880	0.093 *	V/C:	0.814
Northbound	RT	1.00	128	1,600	0.034	Lost Time:	0.100
	TH	3.00	2,231	4,800	0.465 *	ITS:	0.000
	LT	1.00	23	1,600	0.014		
Eastbound	RT	1.00	56	1,600	0.028	ICU:	0.914
	TH	1.00	256	1,600	0.160 *		
	LT	1.00	128	1,600	0.080	LOS:	E

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	540	1,600	0.338	N-S(1):	0.432
	TH	2.00	1,893	3,200	0.592 *	N-S(2):	0.641 *
	LT	1.00	214	1,600	0.134	E-W(1):	0.296 *
Westbound	RT	1.00	266	1,600	0.033	E-W(2):	0.262
	TH	1.00	318	1,600	0.199		
	LT	2.00	336	2,880	0.117 *	V/C:	0.937
Northbound	RT	1.00	242	1,600	0.093	Lost Time:	0.100
	TH	3.00	1,428	4,800	0.298	ITS:	0.000
	LT	1.00	78	1,600	0.049 *		
Eastbound	RT	1.00	96	1,600	0.060	ICU:	1.037
	TH	1.00	287	1,600	0.179 *		
	LT	1.00	100	1,600	0.063	LOS:	F

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **8 Prospect Ave & Anita St**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	35	0	0.000	N-S(1):	0.308 *
	TH	2.00	324	3,200	0.112	N-S(2):	0.252
	LT	1.00	62	1,600	0.039 *	E-W(1):	0.264
Westbound	RT	0.00	83	0	0.000	E-W(2):	0.281 *
	TH	2.00	769	3,200	0.266 *		
	LT	1.00	144	1,600	0.090	V/C:	0.589
Northbound	RT	1.00	157	1,600	0.053	Lost Time:	0.100
	TH	1.00	430	1,600	0.269 *	ITS:	0.000
	LT	1.00	224	1,600	0.140		
Eastbound	RT	0.00	59	0	0.000	ICU:	0.689
	TH	2.00	499	3,200	0.174		
	LT	1.00	24	1,600	0.015 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	67	0	0.000	N-S(1):	0.240
	TH	2.00	558	3,200	0.195 *	N-S(2):	0.281 *
	LT	1.00	89	1,600	0.056	E-W(1):	0.300 *
Westbound	RT	0.00	80	0	0.000	E-W(2):	0.284
	TH	2.00	753	3,200	0.260		
	LT	1.00	107	1,600	0.067 *	V/C:	0.581
Northbound	RT	1.00	76	1,600	0.014	Lost Time:	0.100
	TH	1.00	295	1,600	0.184	ITS:	0.000
	LT	1.00	138	1,600	0.086 *		
Eastbound	RT	0.00	105	0	0.000	ICU:	0.681
	TH	2.00	641	3,200	0.233 *		
	LT	1.00	39	1,600	0.024	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **9 Harbor Dr & Yacht Club Way**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.245 *
	TH	1.00	205	1,600	0.141	N-S(2):	0.152
	LT	1.00	6	1,600	0.004 *	E-W(1):	0.033 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.024
	TH	1.00	1	1,600	0.002		
	LT	0.00	2	1,600	0.001 *	V/C:	0.278
Northbound	RT	0.00	1	0	0.000	Lost Time:	0.100
	TH	1.00	385	1,600	0.241 *	ITS:	0.000
	LT	1.00	17	1,600	0.011		
Eastbound	RT	0.00	15	0	0.000	ICU:	0.378
	TH	1.00	1	1,600	0.032 *		
	LT	0.00	35	1,600	0.022	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	50	0	0.000	N-S(1):	0.203
	TH	1.00	562	1,600	0.383 *	N-S(2):	0.397 *
	LT	1.00	11	1,600	0.007	E-W(1):	0.033
Westbound	RT	0.00	41	0	0.000	E-W(2):	0.047 *
	TH	1.00	0	1,600	0.028 *		
	LT	0.00	3	1,600	0.002	V/C:	0.444
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	1.00	312	1,600	0.196	ITS:	0.000
	LT	1.00	23	1,600	0.014 *		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.544
	TH	1.00	0	1,600	0.031		
	LT	0.00	31	1,600	0.019 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **10 Pacific Coast Hwy & Catalina Ave**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000	N-S(1):	0.564 *
	TH	2.00	1,073	3,200	0.336	N-S(2):	0.340
	LT	0.00	0	0	0.000 *	E-W(1):	0.180
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.202 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.766
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,804	3,200	0.564 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.01	4	22	0.180	ICU:	0.866
	TH	0.00	0	0	0.000		
	LT	1.99	578	2,860	0.202 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	2	0	0.000	N-S(1):	0.420
	TH	2.00	2,067	3,200	0.647 *	N-S(2):	0.656 *
	LT	0.00	0	0	0.000	E-W(1):	0.130
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.150 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.806
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,343	3,200	0.420	ITS:	0.000
	LT	1.00	15	1,600	0.009 *		
Eastbound	RT	0.10	22	163	0.130	ICU:	0.906
	TH	0.00	0	0	0.000		
	LT	1.90	409	2,733	0.150 *	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **11 Harbor Dr & Marina Way**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	76	1,600	0.048	N-S(1):	0.180 *
	TH	1.00	195	1,600	0.122	N-S(2):	0.158
	LT	0.00	0	0	0.000 *	E-W(1):	0.008
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.027 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.207
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	288	1,600	0.180 *	ITS:	0.000
	LT	1.00	57	1,600	0.036		
Eastbound	RT	1.00	42	1,600	0.008	ICU:	0.307
	TH	0.00	0	0	0.000		
	LT	1.00	43	1,600	0.027 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	72	1,600	0.045	N-S(1):	0.212
	TH	1.00	536	1,600	0.335 *	N-S(2):	0.389 *
	LT	0.00	0	0	0.000	E-W(1):	0.017
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.036 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.425
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	339	1,600	0.212	ITS:	0.000
	LT	1.00	87	1,600	0.054 *		
Eastbound	RT	1.00	71	1,600	0.017	ICU:	0.525
	TH	0.00	0	0	0.000		
	LT	1.00	58	1,600	0.036 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **12 Catalina Ave & Gertruda Ave**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	53	0	0.000	N-S(1):	0.171
	TH	2.00	266	3,200	0.100 *	N-S(2):	0.263 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.018
Westbound	RT	0.00	15	0	0.000	E-W(2):	0.028 *
	TH	1.00	3	1,600	0.020 *		
	LT	0.00	14	1,600	0.009	V/C:	0.291
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	514	3,200	0.167	ITS:	0.000
	LT	1.00	261	1,600	0.163 *		
Eastbound	RT	1.00	144	1,600	0.008	ICU:	0.391
	TH	1.00	2	1,600	0.009		
	LT	0.00	13	1,600	0.008 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	69	0	0.000	N-S(1):	0.122
	TH	2.00	707	3,200	0.243 *	N-S(2):	0.354 *
	LT	1.00	5	1,600	0.003	E-W(1):	0.165 *
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.044
	TH	1.00	4	1,600	0.013		
	LT	0.00	6	1,600	0.004 *	V/C:	0.519
Northbound	RT	0.00	7	0	0.000	Lost Time:	0.100
	TH	2.00	373	3,200	0.119	ITS:	0.000
	LT	1.00	178	1,600	0.111 *		
Eastbound	RT	1.00	347	1,600	0.161 *	ICU:	0.619
	TH	1.00	2	1,600	0.033		
	LT	0.00	50	1,600	0.031	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **15 Harbor Dr & Portofino Way/Beryl St**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	NBR, WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	46	1,600	0.014	N-S(1):	0.133 *
	TH	1.00	79	1,600	0.049	N-S(2):	0.053
	LT	1.00	118	1,600	0.074 *	E-W(1):	0.109
Westbound	RT	1.00	251	1,600	0.083 *	E-W(2):	0.112 *
	TH	1.00	126	1,600	0.079		
	LT	1.00	73	1,600	0.046	V/C:	0.245
Northbound	RT	0.00	51	0	0.000	Lost Time:	0.100
	TH	1.00	43	1,600	0.059 *	ITS:	0.000
	LT	1.00	7	1,600	0.004		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.345
	TH	1.00	95	1,600	0.063		
	LT	1.00	46	1,600	0.029 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	117	1,600	0.045	N-S(1):	0.307 *
	TH	1.00	214	1,600	0.134	N-S(2):	0.141
	LT	1.00	274	1,600	0.171 *	E-W(1):	0.260 *
Westbound	RT	1.00	300	1,600	0.016	E-W(2):	0.225
	TH	1.00	268	1,600	0.168		
	LT	1.00	190	1,600	0.119 *	V/C:	0.567
Northbound	RT	0.00	130	0	0.000	Lost Time:	0.100
	TH	1.00	87	1,600	0.136 *	ITS:	0.000
	LT	1.00	11	1,600	0.007		
Eastbound	RT	0.00	24	0	0.000	ICU:	0.667
	TH	1.00	201	1,600	0.141 *		
	LT	1.00	91	1,600	0.057	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **16 Catalina Ave & Beryl St**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	93	0	0.000	N-S(1):	0.202
	TH	2.00	255	3,200	0.109 *	N-S(2):	0.214 *
	LT	0.00	0	0	0.000	E-W(1):	0.050
Westbound	RT	1.00	7	1,600	0.004	E-W(2):	0.100 *
	TH	1.00	115	1,600	0.072 *		
	LT	1.00	24	1,600	0.015	V/C:	0.314
Northbound	RT	0.00	42	0	0.000	Lost Time:	0.100
	TH	2.00	604	3,200	0.202	ITS:	0.000
	LT	2.00	302	2,880	0.105 *		
Eastbound	RT	1.00	127	1,600	0.000	ICU:	0.414
	TH	1.00	56	1,600	0.035		
	LT	1.00	45	1,600	0.028 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	227	0	0.000	N-S(1):	0.145
	TH	2.00	663	3,200	0.279 *	N-S(2):	0.384 *
	LT	0.00	3	1,600	0.002	E-W(1):	0.137
Westbound	RT	1.00	19	1,600	0.011	E-W(2):	0.191 *
	TH	1.00	220	1,600	0.138 *		
	LT	1.00	37	1,600	0.023	V/C:	0.575
Northbound	RT	0.00	61	0	0.000	Lost Time:	0.100
	TH	2.00	396	3,200	0.143	ITS:	0.000
	LT	2.00	303	2,880	0.105 *		
Eastbound	RT	1.00	335	1,600	0.104	ICU:	0.675
	TH	1.00	182	1,600	0.114		
	LT	1.00	85	1,600	0.053 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **19 Pacific Coast Hwy & Beryl St**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	25	0	0.000	N-S(1):	0.544 *
	TH	2.00	1,035	3,200	0.331	N-S(2):	0.360
	LT	1.00	19	1,600	0.012 *	E-W(1):	0.127 *
Westbound	RT	1.00	28	1,600	0.012	E-W(2):	0.080
	TH	1.00	98	1,600	0.061		
	LT	1.00	59	1,600	0.037 *	V/C:	0.671
Northbound	RT	0.00	51	0	0.000	Lost Time:	0.100
	TH	2.00	1,652	3,200	0.532 *	ITS:	0.000
	LT	1.00	47	1,600	0.029		
Eastbound	RT	0.00	29	0	0.000	ICU:	0.771
	TH	1.00	115	1,600	0.090 *		
	LT	1.00	31	1,600	0.019	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	65	0	0.000	N-S(1):	0.422
	TH	2.00	1,883	3,200	0.609 *	N-S(2):	0.645 *
	LT	1.00	41	1,600	0.026	E-W(1):	0.196 *
Westbound	RT	1.00	41	1,600	0.013	E-W(2):	0.173
	TH	1.00	192	1,600	0.120		
	LT	1.00	79	1,600	0.049 *	V/C:	0.841
Northbound	RT	0.00	58	0	0.000	Lost Time:	0.100
	TH	2.00	1,209	3,200	0.396	ITS:	0.000
	LT	1.00	57	1,600	0.036 *		
Eastbound	RT	0.00	68	0	0.000	ICU:	0.941
	TH	1.00	167	1,600	0.147 *		
	LT	1.00	84	1,600	0.053	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **21 Catalina Ave & Carnelian St**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	0	1,600	0.000	N-S(1):	0.315 *
	TH	2.00	388	3,200	0.121	N-S(2):	0.124
	LT	1.00	21	1,600	0.013 *	E-W(1):	0.023
Westbound	RT	0.00	35	0	0.000	E-W(2):	0.038 *
	TH	1.00	1	1,600	0.034 *		
	LT	0.00	19	1,600	0.012	V/C:	0.353
Northbound	RT	1.00	22	1,600	0.008	Lost Time:	0.100
	TH	2.00	967	3,200	0.302 *	ITS:	0.000
	LT	1.00	4	1,600	0.003		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.453
	TH	1.00	4	1,600	0.011		
	LT	0.00	7	1,600	0.004 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	5	1,600	0.003	N-S(1):	0.318
	TH	2.00	1,105	3,200	0.345 *	N-S(2):	0.350 *
	LT	1.00	90	1,600	0.056	E-W(1):	0.027
Westbound	RT	0.00	40	0	0.000	E-W(2):	0.052 *
	TH	1.00	8	1,600	0.051 *		
	LT	0.00	33	1,600	0.021	V/C:	0.402
Northbound	RT	1.00	41	1,600	0.015	Lost Time:	0.100
	TH	2.00	839	3,200	0.262	ITS:	0.000
	LT	1.00	8	1,600	0.005 *		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.502
	TH	1.00	4	1,600	0.006		
	LT	0.00	1	1,600	0.001 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **22 Catalina Ave & Diamond St**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	4	1,600	0.000	N-S(1):	0.303 *
	TH	2.00	376	3,200	0.118	N-S(2):	0.119
	LT	1.00	30	1,600	0.019 *	E-W(1):	0.041
Westbound	RT	0.00	57	0	0.000	E-W(2):	0.047 *
	TH	1.00	1	1,600	0.036 *		
	LT	1.00	33	1,600	0.021	V/C:	0.350
Northbound	RT	1.00	66	1,600	0.031	Lost Time:	0.100
	TH	2.00	909	3,200	0.284 *	ITS:	0.000
	LT	1.00	2	1,600	0.001		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.450
	TH	1.00	9	1,600	0.020		
	LT	0.00	17	1,600	0.011 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.005	N-S(1):	0.295
	TH	2.00	1,062	3,200	0.332 *	N-S(2):	0.338 *
	LT	1.00	64	1,600	0.040	E-W(1):	0.042
Westbound	RT	0.00	68	0	0.000	E-W(2):	0.048 *
	TH	1.00	4	1,600	0.045 *		
	LT	1.00	57	1,600	0.036	V/C:	0.386
Northbound	RT	1.00	64	1,600	0.022	Lost Time:	0.100
	TH	2.00	815	3,200	0.255	ITS:	0.000
	LT	1.00	10	1,600	0.006 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.486
	TH	1.00	2	1,600	0.006		
	LT	0.00	4	1,600	0.003 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **23 Catalina Ave & Emerald St**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	6	1,600	0.000	N-S(1):	0.299 *
	TH	2.00	385	3,200	0.120	N-S(2):	0.124
	LT	1.00	17	1,600	0.011 *	E-W(1):	0.065
Westbound	RT	0.00	33	0	0.000	E-W(2):	0.069 *
	TH	1.00	4	1,600	0.033 *		
	LT	0.00	15	1,600	0.009	V/C:	0.368
Northbound	RT	0.00	27	0	0.000	Lost Time:	0.100
	TH	2.00	893	3,200	0.288 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.00	24	0	0.000	ICU:	0.468
	TH	1.00	9	1,600	0.056		
	LT	0.00	57	1,600	0.036 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	28	1,600	0.009	N-S(1):	0.287
	TH	2.00	1,053	3,200	0.329 *	N-S(2):	0.341 *
	LT	1.00	39	1,600	0.024	E-W(1):	0.045
Westbound	RT	0.00	30	0	0.000	E-W(2):	0.054 *
	TH	1.00	6	1,600	0.038 *		
	LT	0.00	24	1,600	0.015	V/C:	0.395
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	823	3,200	0.263	ITS:	0.000
	LT	1.00	19	1,600	0.012 *		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.495
	TH	1.00	6	1,600	0.030		
	LT	0.00	26	1,600	0.016 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **24 Pacific Coast Hwy & Garnet St**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	8	0	0.000	N-S(1):	0.549 *
	TH	2.00	930	3,200	0.293	N-S(2):	0.293
	LT	0.00	1	1,600	0.001 *	E-W(1):	0.017
Westbound	RT	0.00	46	0	0.000	E-W(2):	0.046 *
	TH	1.00	18	1,600	0.040 *		
	LT	1.00	3	1,600	0.002	V/C:	0.595
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	1,743	3,200	0.548 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.695
	TH	1.00	5	1,600	0.015		
	LT	1.00	9	1,600	0.006 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	30	0	0.000	N-S(1):	0.422
	TH	2.00	1,658	3,200	0.529 *	N-S(2):	0.529 *
	LT	0.00	4	1,600	0.003	E-W(1):	0.032
Westbound	RT	0.00	41	0	0.000	E-W(2):	0.043 *
	TH	1.00	16	1,600	0.036 *		
	LT	1.00	13	1,600	0.008	V/C:	0.572
Northbound	RT	0.00	43	0	0.000	Lost Time:	0.100
	TH	2.00	1,298	3,200	0.419	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.672
	TH	1.00	16	1,600	0.024		
	LT	1.00	11	1,600	0.007 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **25 Catalina Ave & Torrance Blvd**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	82	1,600	0.037	N-S(1):	0.274 *
	TH	2.00	255	3,200	0.080	N-S(2):	0.093
	LT	1.00	126	1,600	0.079 *	E-W(1):	0.066 *
Westbound	RT	1.00	176	1,600	0.031	E-W(2):	0.059
	TH	2.00	89	3,200	0.028		
	LT	1.00	78	1,600	0.049 *	V/C:	0.340
Northbound	RT	1.00	156	1,600	0.073	Lost Time:	0.100
	TH	2.00	623	3,200	0.195 *	ITS:	0.000
	LT	1.00	20	1,600	0.013		
Eastbound	RT	1.00	15	1,600	0.003	ICU:	0.440
	TH	2.00	54	3,200	0.017 *		
	LT	1.00	45	1,600	0.028	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	161	1,600	0.072	N-S(1):	0.294 *
	TH	2.00	725	3,200	0.227	N-S(2):	0.259
	LT	1.00	236	1,600	0.148 *	E-W(1):	0.115
Westbound	RT	1.00	255	1,600	0.012	E-W(2):	0.122 *
	TH	2.00	209	3,200	0.065 *		
	LT	1.00	99	1,600	0.062	V/C:	0.416
Northbound	RT	1.00	98	1,600	0.030	Lost Time:	0.100
	TH	2.00	466	3,200	0.146 *	ITS:	0.000
	LT	1.00	51	1,600	0.032		
Eastbound	RT	1.00	37	1,600	0.007	ICU:	0.516
	TH	2.00	169	3,200	0.053		
	LT	1.00	91	1,600	0.057 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **26 Pacific Coast Hwy & Torrance Blvd**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	29	0	0.000	N-S(1):	0.542 *
	TH	2.00	862	3,200	0.278	N-S(2):	0.319
	LT	1.00	228	1,600	0.143 *	E-W(1):	0.187 *
Westbound	RT	1.00	227	1,600	0.071	E-W(2):	0.142
	TH	2.00	349	3,200	0.109		
	LT	1.00	122	1,600	0.076 *	V/C:	0.729
Northbound	RT	0.00	66	0	0.000	Lost Time:	0.100
	TH	2.00	1,212	3,200	0.399 *	ITS:	0.000
	LT	1.00	66	1,600	0.041		
Eastbound	RT	0.00	55	0	0.000	ICU:	0.829
	TH	2.00	300	3,200	0.111 *		
	LT	1.00	52	1,600	0.033	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	58	0	0.000	N-S(1):	0.519
	TH	2.00	1,418	3,200	0.461 *	N-S(2):	0.534 *
	LT	1.00	309	1,600	0.193	E-W(1):	0.253 *
Westbound	RT	1.00	301	1,600	0.092	E-W(2):	0.197
	TH	2.00	464	3,200	0.145		
	LT	1.00	156	1,600	0.098 *	V/C:	0.787
Northbound	RT	0.00	89	0	0.000	Lost Time:	0.100
	TH	2.00	954	3,200	0.326	ITS:	0.000
	LT	1.00	117	1,600	0.073 *		
Eastbound	RT	0.00	104	0	0.000	ICU:	0.887
	TH	2.00	393	3,200	0.155 *		
	LT	1.00	83	1,600	0.052	LOS:	D

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **27 Helberta Ave/Camino Real & Torrance Blvd**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	16	0	0.000	N-S(1):	0.155 *
	TH	1.00	63	1,600	0.063 *	N-S(2):	0.000
	LT	0.00	21	1,600	0.013	E-W(1):	0.227 *
Westbound	RT	0.00	25	0	0.000	E-W(2):	0.200
	TH	2.00	572	3,200	0.187		
	LT	1.00	29	1,600	0.018 *	V/C:	0.382
Northbound	RT	0.00	37	0	0.000	Lost Time:	0.100
	TH	0.60	42	954	0.083	ITS:	0.000
	LT	1.40	186	2,021	0.092 *		
Eastbound	RT	0.00	115	0	0.000	ICU:	0.482
	TH	2.00	555	3,200	0.209 *		
	LT	1.00	20	1,600	0.013	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	11	0	0.000	N-S(1):	0.136 *
	TH	1.00	28	1,600	0.036 *	N-S(2):	0.000
	LT	0.00	19	1,600	0.012	E-W(1):	0.296 *
Westbound	RT	0.00	16	0	0.000	E-W(2):	0.225
	TH	2.00	683	3,200	0.218		
	LT	1.00	45	1,600	0.028 *	V/C:	0.432
Northbound	RT	0.00	28	0	0.000	Lost Time:	0.100
	TH	0.40	30	647	0.090	ITS:	0.000
	LT	1.60	229	2,298	0.100 *		
Eastbound	RT	0.00	166	0	0.000	ICU:	0.532
	TH	2.00	691	3,200	0.268 *		
	LT	1.00	11	1,600	0.007	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **28 Prospect Ave & Torrance Blvd**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	65	0	0.000	N-S(1):	0.421 *
	TH	2.00	586	3,200	0.203	N-S(2):	0.237
	LT	1.00	198	1,600	0.124 *	E-W(1):	0.273
Westbound	RT	0.00	168	0	0.000	E-W(2):	0.302 *
	TH	2.00	586	3,200	0.236 *		
	LT	1.00	154	1,600	0.096	V/C:	0.723
Northbound	RT	0.00	241	0	0.000	Lost Time:	0.100
	TH	2.00	708	3,200	0.297 *	ITS:	0.000
	LT	1.00	54	1,600	0.034		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.823
	TH	2.00	544	3,200	0.177		
	LT	1.00	106	1,600	0.066 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	132	0	0.000	N-S(1):	0.325 *
	TH	2.00	742	3,200	0.273	N-S(2):	0.301
	LT	1.00	207	1,600	0.129 *	E-W(1):	0.315
Westbound	RT	0.00	168	0	0.000	E-W(2):	0.326 *
	TH	2.00	688	3,200	0.268 *		
	LT	1.00	170	1,600	0.106	V/C:	0.651
Northbound	RT	0.00	112	0	0.000	Lost Time:	0.100
	TH	2.00	516	3,200	0.196 *	ITS:	0.000
	LT	1.00	45	1,600	0.028		
Eastbound	RT	0.00	43	0	0.000	ICU:	0.751
	TH	2.00	625	3,200	0.209		
	LT	1.00	92	1,600	0.058 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **29 Catalina Ave & Pearl St**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	142	1,600	0.049	N-S(1):	0.197 *
	TH	2.00	195	3,200	0.063	N-S(2):	0.067
	LT	0.00	5	1,600	0.003 *	E-W(1):	0.094 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	12	1,600	0.015 *		
	LT	0.00	0	0	0.000	V/C:	0.291
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	604	3,200	0.194 *	ITS:	0.000
	LT	0.00	7	1,600	0.004		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.391
	TH	0.15	12	240	0.071		
	LT	1.85	210	2,664	0.079 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	280	1,600	0.133	N-S(1):	0.143
	TH	2.00	541	3,200	0.178 *	N-S(2):	0.180 *
	LT	0.00	30	1,600	0.019	E-W(1):	0.100 *
Westbound	RT	0.00	13	0	0.000	E-W(2):	0.000
	TH	1.00	9	1,600	0.016 *		
	LT	0.00	4	1,600	0.003	V/C:	0.280
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	386	3,200	0.124	ITS:	0.000
	LT	0.00	3	1,600	0.002 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.380
	TH	0.11	10	173	0.075		
	LT	1.89	228	2,725	0.084 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **31 Pacific Coast Hwy & Sapphire St/Francisca Ave**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	5	0	0.000	N-S(1):	0.475 *
	TH	2.00	904	3,200	0.284	N-S(2):	0.296
	LT	1.00	26	1,600	0.016 *	E-W(1):	0.045 *
Westbound	RT	0.00	19	0	0.000	E-W(2):	0.030
	TH	1.00	10	1,600	0.021		
	LT	0.00	5	1,600	0.003 *	V/C:	0.520
Northbound	RT	0.00	37	0	0.000	Lost Time:	0.100
	TH	2.00	1,431	3,200	0.459 *	ITS:	0.000
	LT	1.00	19	1,600	0.012		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.620
	TH	1.00	36	1,600	0.042 *		
	LT	0.00	15	1,600	0.009	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	7	0	0.000	N-S(1):	0.378
	TH	2.00	1,518	3,200	0.477 *	N-S(2):	0.491 *
	LT	1.00	34	1,600	0.021	E-W(1):	0.073 *
Westbound	RT	0.00	21	0	0.000	E-W(2):	0.047
	TH	1.00	11	1,600	0.023		
	LT	0.00	5	1,600	0.003 *	V/C:	0.564
Northbound	RT	0.00	27	0	0.000	Lost Time:	0.100
	TH	2.00	1,116	3,200	0.357	ITS:	0.000
	LT	1.00	22	1,600	0.014 *		
Eastbound	RT	0.00	36	0	0.000	ICU:	0.664
	TH	1.00	37	1,600	0.070 *		
	LT	0.00	39	1,600	0.024	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **34 Pacific Coast Hwy & Knob Hill Ave**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	32	0	0.000	N-S(1):	0.461 *
	TH	2.00	859	3,200	0.278	N-S(2):	0.294
	LT	1.00	51	1,600	0.032 *	E-W(1):	0.084
Westbound	RT	0.00	58	0	0.000	E-W(2):	0.102 *
	TH	1.00	51	1,600	0.068 *		
	LT	1.00	54	1,600	0.034	V/C:	0.563
Northbound	RT	0.00	35	0	0.000	Lost Time:	0.100
	TH	2.00	1,339	3,200	0.429 *	ITS:	0.000
	LT	1.00	25	1,600	0.016		
Eastbound	RT	1.00	30	1,600	0.011	ICU:	0.663
	TH	1.00	80	1,600	0.050		
	LT	1.00	55	1,600	0.034 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	29	0	0.000	N-S(1):	0.407
	TH	2.00	1,361	3,200	0.434 *	N-S(2):	0.467 *
	LT	1.00	62	1,600	0.039	E-W(1):	0.109
Westbound	RT	0.00	58	0	0.000	E-W(2):	0.145 *
	TH	1.00	127	1,600	0.116 *		
	LT	1.00	83	1,600	0.052	V/C:	0.612
Northbound	RT	0.00	70	0	0.000	Lost Time:	0.100
	TH	2.00	1,108	3,200	0.368	ITS:	0.000
	LT	1.00	52	1,600	0.033 *		
Eastbound	RT	1.00	65	1,600	0.024	ICU:	0.712
	TH	1.00	91	1,600	0.057		
	LT	1.00	47	1,600	0.029 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **36 Pacific Coast Hwy & Palos Verdes Blvd**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	261	0	0.000	N-S(1):	0.310
	TH	2.00	555	3,200	0.255 *	N-S(2):	0.355 *
	LT	1.00	62	1,600	0.039	E-W(1):	0.252
Westbound	RT	0.00	98	0	0.000	E-W(2):	0.405 *
	TH	2.00	372	3,200	0.147 *		
	LT	1.00	58	1,600	0.036	V/C:	0.760
Northbound	RT	1.00	79	1,600	0.031	Lost Time:	0.100
	TH	2.00	866	3,200	0.271	ITS:	0.000
	LT	1.00	160	1,600	0.100 *		
Eastbound	RT	0.00	157	0	0.000	ICU:	0.860
	TH	2.00	534	3,200	0.216		
	LT	1.00	413	1,600	0.258 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	356	0	0.000	N-S(1):	0.344
	TH	2.00	969	3,200	0.414 *	N-S(2):	0.553 *
	LT	1.00	85	1,600	0.053	E-W(1):	0.237
Westbound	RT	0.00	135	0	0.000	E-W(2):	0.325 *
	TH	2.00	464	3,200	0.187 *		
	LT	1.00	89	1,600	0.056	V/C:	0.878
Northbound	RT	1.00	76	1,600	0.020	Lost Time:	0.100
	TH	2.00	932	3,200	0.291	ITS:	0.000
	LT	1.00	223	1,600	0.139 *		
Eastbound	RT	0.00	188	0	0.000	ICU:	0.978
	TH	2.00	390	3,200	0.181		
	LT	1.00	221	1,600	0.138 *	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **37 Pacific Coast Hwy & 2nd St**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	34	0	0.000	N-S(1):	0.498 *
	TH	3.00	1,096	4,800	0.235	N-S(2):	0.241
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.104 *
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.000
	TH	1.00	2	1,600	0.021 *		
	LT	0.00	11	1,600	0.007	V/C:	0.602
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	3.00	2,386	4,800	0.498 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.32	42	509	0.079	ICU:	0.702
	TH	0.00	0	0	0.000		
	LT	0.68	90	1,091	0.083 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	71	0	0.000	N-S(1):	0.330
	TH	3.00	2,268	4,800	0.487 *	N-S(2):	0.513 *
	LT	1.00	1	1,600	0.001	E-W(1):	0.102 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	4	1,600	0.019 *		
	LT	0.00	14	1,600	0.009	V/C:	0.615
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,574	4,800	0.329	ITS:	0.000
	LT	1.00	41	1,600	0.026 *		
Eastbound	RT	0.32	42	509	0.070	ICU:	0.715
	TH	0.00	0	0	0.000		
	LT	0.68	90	1,091	0.083 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **38 Pacific Coast Hwy & 10th/Aviation**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.504 *
	TH	3.00	695	4,800	0.145	N-S(2):	0.151
	LT	1.00	139	1,600	0.087 *	E-W(1):	0.179 *
Westbound	RT	1.00	155	1,600	0.010	E-W(2):	0.161
	TH	0.01	3	19	0.161		
	LT	1.99	511	2,863	0.178 *	V/C:	0.683
Northbound	RT	1.00	661	1,600	0.324	Lost Time:	0.100
	TH	3.00	2,002	4,800	0.417 *	ITS:	0.000
	LT	1.00	9	1,600	0.006		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.783
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.386
	TH	3.00	1,906	4,800	0.397 *	N-S(2):	0.405 *
	LT	1.00	222	1,600	0.139	E-W(1):	0.257 *
Westbound	RT	1.00	218	1,600	0.000	E-W(2):	0.231
	TH	0.03	10	43	0.231		
	LT	1.97	728	2,841	0.256 *	V/C:	0.662
Northbound	RT	1.00	518	1,600	0.196	Lost Time:	0.100
	TH	3.00	1,185	4,800	0.247	ITS:	0.000
	LT	1.00	13	1,600	0.008 *		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.762
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **39 Pacific Coast Hwy & Pier/14th St**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	62	0	0.000	N-S(1):	0.386 *
	TH	3.00	682	4,800	0.155	N-S(2):	0.219
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.085 *
Westbound	RT	1.00	6	1,600	0.004 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	V/C:	0.471
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,852	4,800	0.386 *	ITS:	0.000
	LT	2.00	183	2,880	0.064		
Eastbound	RT	1.00	168	1,600	0.041	ICU:	0.571
	TH	0.00	0	0	0.000		
	LT	2.00	232	2,880	0.081 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	147	0	0.000	N-S(1):	0.240
	TH	3.00	1,898	4,800	0.426 *	N-S(2):	0.537 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.086 *
Westbound	RT	1.00	12	1,600	0.006 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001	V/C:	0.623
Northbound	RT	0.00	6	0	0.000	Lost Time:	0.100
	TH	3.00	1,126	4,800	0.236	ITS:	0.000
	LT	2.00	320	2,880	0.111 *		
Eastbound	RT	1.00	245	1,600	0.042	ICU:	0.723
	TH	0.00	0	0	0.000		
	LT	2.00	230	2,880	0.080 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **40 Pacific Coast Hwy & 16th St**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	146	1,600	0.068	N-S(1):	0.353 *
	TH	3.00	908	4,800	0.189	N-S(2):	0.238
	LT	1.00	15	1,600	0.009 *	E-W(1):	0.079 *
Westbound	RT	0.48	24	768	0.027	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.52	26	832	0.031 *	V/C:	0.432
Northbound	RT	0.00	47	0	0.000	Lost Time:	0.100
	TH	3.00	1,606	4,800	0.344 *	ITS:	0.000
	LT	1.00	79	1,600	0.049		
Eastbound	RT	1.00	62	1,600	0.014	ICU:	0.532
	TH	0.00	0	0	0.000		
	LT	1.00	76	1,600	0.048 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	203	1,600	0.092	N-S(1):	0.256
	TH	3.00	1,970	4,800	0.410 *	N-S(2):	0.474 *
	LT	1.00	3	1,600	0.002	E-W(1):	0.081 *
Westbound	RT	0.16	3	253	0.011	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.84	16	1,347	0.012 *	V/C:	0.555
Northbound	RT	0.00	24	0	0.000	Lost Time:	0.100
	TH	3.00	1,196	4,800	0.254	ITS:	0.000
	LT	1.00	102	1,600	0.064 *		
Eastbound	RT	1.00	85	1,600	0.021	ICU:	0.655
	TH	0.00	0	0	0.000		
	LT	1.00	111	1,600	0.069 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **41 Pacific Coast Hwy & Prosect Ave**
Description: **Existing Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	67	1,600	0.020	N-S(1):	0.184 *
	TH	1.00	6	1,600	0.152 *	N-S(2):	0.000
	LT	0.00	237	1,600	0.148	E-W(1):	0.238
Westbound	RT	0.00	212	0	0.000	E-W(2):	0.427 *
	TH	2.00	1,018	3,200	0.384 *		
	LT	1.00	4	1,600	0.003	V/C:	0.611
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	1.00	34	1,600	0.032 *	ITS:	0.000
	LT	0.00	8	1,600	0.005		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.711
	TH	2.00	753	3,200	0.235		
	LT	1.00	69	1,600	0.043 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	88	1,600	0.038	N-S(1):	0.207 *
	TH	1.00	15	1,600	0.178 *	N-S(2):	0.000
	LT	0.00	269	1,600	0.168	E-W(1):	0.349
Westbound	RT	0.00	215	0	0.000	E-W(2):	0.486 *
	TH	2.00	1,231	3,200	0.452 *		
	LT	1.00	13	1,600	0.008	V/C:	0.693
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	1.00	21	1,600	0.029 *	ITS:	0.000
	LT	0.00	5	1,600	0.003		
Eastbound	RT	0.00	8	0	0.000	ICU:	0.793
	TH	2.00	1,082	3,200	0.341		
	LT	1.00	54	1,600	0.034 *	LOS:	C

* - Denotes critical movement

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	6	12	5	0	27	8	26	0	51	510	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	13	5	0	29	9	28	0	55	554	83
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.3	9.5	12.4
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	17%	0%	26%	44%	43%	0%
Vol Thru, %	83%	77%	52%	13%	57%	98%
Vol Right, %	0%	23%	22%	43%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	306	331	23	61	166	97
LT Vol	255	255	12	8	95	95
Through Vol	0	76	5	26	0	2
RT Vol	51	0	6	27	71	0
Lane Flow Rate	333	360	25	66	180	105
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.476	0.491	0.041	0.106	0.285	0.16
Departure Headway (Hd)	5.155	4.909	5.921	5.738	5.681	5.451
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	695	730	599	620	628	654
Service Time	2.908	2.663	4.014	3.817	3.451	3.221
HCM Lane V/C Ratio	0.479	0.493	0.042	0.106	0.287	0.161
HCM Control Delay	12.5	12.4	9.3	9.5	10.7	9.3
HCM Lane LOS	B	B	A	A	B	A
HCM 95th-tile Q	2.6	2.7	0.1	0.4	1.2	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	71	190	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	77	207	2
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.2
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	22	104	21	0	12	34	12	0	12	48	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	24	113	23	0	13	37	13	0	13	52	67
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.6	8	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	15%	21%	38%
Vol Thru, %	39%	71%	59%	47%
Vol Right, %	51%	14%	21%	16%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	122	147	58	96
LT Vol	48	104	34	45
Through Vol	62	21	12	15
RT Vol	12	22	12	36
Lane Flow Rate	133	160	63	104
Geometry Grp	1	1	1	1
Degree of Util (X)	0.158	0.199	0.08	0.133
Departure Headway (Hd)	4.288	4.488	4.573	4.579
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	837	801	783	784
Service Time	2.312	2.512	2.602	2.604
HCM Lane V/C Ratio	0.159	0.2	0.08	0.133
HCM Control Delay	8.1	8.6	8	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.7	0.3	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	36	45	15
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	39	49	16
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.3
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	82	121	62	0	15	48	25	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	89	132	67	0	16	52	27	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	10	8.3
HCM LOS	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	17%	9%
Vol Thru, %	46%	55%	79%
Vol Right, %	23%	28%	13%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	265	88	191
LT Vol	121	48	150
Through Vol	62	25	24
RT Vol	82	15	17
Lane Flow Rate	288	96	208
Geometry Grp	1	1	1
Degree of Util (X)	0.358	0.123	0.274
Departure Headway (Hd)	4.48	4.636	4.749
Convergence, Y/N	Yes	Yes	Yes
Cap	801	771	756
Service Time	2.512	2.677	2.786
HCM Lane V/C Ratio	0.36	0.125	0.275
HCM Control Delay	10	8.3	9.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.6	0.4	1.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	17	150	24
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	18	163	26
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.6
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	22	185	426	54	68	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	201	463	59	74	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	522	0	-	0	741	492
Stage 1	-	-	-	-	492	-
Stage 2	-	-	-	-	249	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1044	-	-	-	384	577
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1044	-	-	-	375	577
Mov Cap-2 Maneuver	-	-	-	-	375	-
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	774	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	16.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1044	-	-	-	400
HCM Lane V/C Ratio	0.023	-	-	-	0.226
HCM Control Delay (s)	8.5	-	-	-	16.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9

Intersection	
Intersection Delay, s/veh	19
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	215	45	0	47	283	0	0	175	0	59
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	234	49	0	51	308	0	0	190	0	64
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	17.6	22.5	21.8
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	75%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	25%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	234	215	45	47	283	137	103	22
LT Vol	0	215	0	0	283	0	103	0
Through Vol	59	0	45	0	0	0	0	22
RT Vol	175	0	0	47	0	137	0	0
Lane Flow Rate	254	234	49	51	308	149	112	24
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.58	0.516	0.098	0.117	0.658	0.334	0.235	0.045
Departure Headway (Hd)	8.208	7.95	7.231	8.211	7.698	8.081	7.568	6.849
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	437	451	493	435	468	444	472	520
Service Time	5.995	5.737	5.017	5.993	5.48	5.867	5.353	4.633
HCM Lane V/C Ratio	0.581	0.519	0.099	0.117	0.658	0.336	0.237	0.046
HCM Control Delay	21.8	19	10.8	12.1	24.2	14.9	12.7	10
HCM Lane LOS	C	C	B	B	C	B	B	A
HCM 95th-tile Q	3.6	2.9	0.3	0.4	4.7	1.4	0.9	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	137	103	22
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	149	112	24
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.6
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	2	0	1	5	3	35	23	756	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	1	5	3	38	25	822	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	937	1349	224	1122	1361	413	449	0	0
Stage 1	474	474	-	873	873	-	-	-	-
Stage 2	463	875	-	249	488	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	219	149	779	161	147	588	1108	-	-
Stage 1	540	556	-	311	366	-	-	-	-
Stage 2	548	365	-	733	548	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	194	142	779	155	140	588	1108	-	-
Mov Cap-2 Maneuver	194	142	-	155	140	-	-	-	-
Stage 1	528	542	-	304	358	-	-	-	-
Stage 2	496	357	-	714	534	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	19.1	15.8	0.2
HCM LOS	C	C	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1108	-	-	259	380	801	-	-
HCM Lane V/C Ratio	0.023	-	-	0.013	0.123	0.024	-	-
HCM Control Delay (s)	8.3	-	-	19.1	15.8	9.6	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0.4	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	18	387	26
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	20	421	28

Major/Minor	Major2		
Conflicting Flow All	825	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	801	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	801	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	0	1	1	1	108	1	659	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	1	1	1	117	1	716	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	800	1159	188	970	1158	359	376	0	0
Stage 1	439	439	-	719	719	-	-	-	-
Stage 2	361	720	-	251	439	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	276	194	822	208	195	638	1179	-	-
Stage 1	567	576	-	386	431	-	-	-	-
Stage 2	630	430	-	731	576	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	218	187	822	202	188	638	1179	-	-
Mov Cap-2 Maneuver	218	187	-	202	188	-	-	-	-
Stage 1	566	555	-	386	431	-	-	-	-
Stage 2	512	430	-	703	555	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	20.6	12.3	0
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1179	-	-	240	613	880	-	-
HCM Lane V/C Ratio	0.001	-	-	0.036	0.195	0.036	-	-
HCM Control Delay (s)	8.1	0	-	20.6	12.3	9.2	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	29	346	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	32	376	0

Major/Minor	Major2		
Conflicting Flow All	717	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	880	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	880	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.7
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	88	6	15	121	11	22	102	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	96	7	16	132	12	24	111	50

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	143	0	0	102	0	0	287	277	99
Stage 1	-	-	-	-	-	-	101	101	-
Stage 2	-	-	-	-	-	-	186	176	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1440	-	-	1490	-	-	665	631	957
Stage 1	-	-	-	-	-	-	905	811	-
Stage 2	-	-	-	-	-	-	816	753	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1440	-	-	1490	-	-	633	624	957
Mov Cap-2 Maneuver	-	-	-	-	-	-	633	624	-
Stage 1	-	-	-	-	-	-	904	810	-
Stage 2	-	-	-	-	-	-	773	745	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.8	12.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	690	1440	-	-	1490	-	-	627
HCM Lane V/C Ratio	0.268	0.001	-	-	0.011	-	-	0.055
HCM Control Delay (s)	12.1	7.5	-	-	7.4	-	-	11.1
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	2	28	2
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	2	30	2

Major/Minor	Minor2		
Conflicting Flow All	352	274	138
Stage 1	170	170	-
Stage 2	182	104	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	603	633	910
Stage 1	832	758	-
Stage 2	820	809	-
Platoon blocked, %			
Mov Cap-1 Maneuver	489	626	910
Mov Cap-2 Maneuver	489	626	-
Stage 1	831	750	-
Stage 2	670	808	-

Approach	SB
HCM Control Delay, s	11.1
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	128	18	52	142	17	9	13	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	139	20	57	154	18	10	14	58

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	173	0	0	159	0	0	451	450	149
Stage 1	-	-	-	-	-	-	164	164	-
Stage 2	-	-	-	-	-	-	287	286	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1404	-	-	1420	-	-	519	504	898
Stage 1	-	-	-	-	-	-	838	762	-
Stage 2	-	-	-	-	-	-	720	675	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1404	-	-	1420	-	-	486	481	898
Mov Cap-2 Maneuver	-	-	-	-	-	-	486	481	-
Stage 1	-	-	-	-	-	-	833	758	-
Stage 2	-	-	-	-	-	-	671	648	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	1.9	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	717	1404	-	-	1420	-	-	510
HCM Lane V/C Ratio	0.114	0.005	-	-	0.04	-	-	0.064
HCM Control Delay (s)	10.7	7.6	-	-	7.6	-	-	12.5
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	11	13	6
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	12	14	7

Major/Minor	Minor2		
Conflicting Flow All	477	451	164
Stage 1	277	277	-
Stage 2	200	174	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	498	504	881
Stage 1	729	681	-
Stage 2	802	755	-
Platoon blocked, %			
Mov Cap-1 Maneuver	440	481	881
Mov Cap-2 Maneuver	440	481	-
Stage 1	725	654	-
Stage 2	732	751	-

Approach	SB
HCM Control Delay, s	12.5
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	59	1	2	0	0	4	1	0	3	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	64	1	2	0	0	4	1	0	3	2	0
Number of Lanes	0	1	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	8.2	7.9	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	60%	100%	90%	0%	60%	0%
Vol Thru, %	40%	0%	3%	80%	40%	0%
Vol Right, %	0%	0%	6%	20%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	31	31	5	5	127
LT Vol	2	0	1	4	2	0
Through Vol	0	0	2	1	0	127
RT Vol	3	31	28	0	3	0
Lane Flow Rate	5	33	34	5	5	138
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.008	0.049	0.049	0.007	0.007	0.152
Departure Headway (Hd)	4.992	5.295	5.202	4.725	4.962	3.961
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	721	672	684	746	714	893
Service Time	2.992	3.062	2.969	2.824	2.74	1.739
HCM Lane V/C Ratio	0.007	0.049	0.05	0.007	0.007	0.155
HCM Control Delay	8	8.3	8.2	7.9	7.8	7.5
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0	0.2	0.2	0	0	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	2	127
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	2	138
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	7.5
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	14	16	47	0	4	14	24	0	29	264	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	17	51	0	4	15	26	0	32	287	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.5	8.3	9.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	18%	0%	18%	10%	4%	0%
Vol Thru, %	82%	97%	21%	33%	96%	94%
Vol Right, %	0%	3%	61%	57%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	161	136	77	42	92	94
LT Vol	132	132	16	14	88	88
Through Vol	0	4	47	24	0	6
RT Vol	29	0	14	4	4	0
Lane Flow Rate	175	148	84	46	100	102
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.249	0.206	0.113	0.062	0.144	0.145
Departure Headway (Hd)	5.127	5.015	4.852	4.916	5.175	5.108
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	700	714	737	725	692	701
Service Time	2.865	2.753	2.897	2.966	2.916	2.85
HCM Lane V/C Ratio	0.25	0.207	0.114	0.063	0.145	0.146
HCM Control Delay	9.6	9.1	8.5	8.3	8.8	8.7
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	1	0.8	0.4	0.2	0.5	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	4	176	6
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	191	7
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.7
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	76	22	0	127	84	0	24	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	83	24	0	138	91	0	26	107
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.1	9.4	8.6
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	60%	0%	0%	0%	100%
Vol Right, %	40%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	211	76	22	24	98
LT Vol	127	0	0	0	98
Through Vol	84	0	22	0	0
RT Vol	0	76	0	24	0
Lane Flow Rate	229	83	24	26	107
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.29	0.135	0.031	0.04	0.149
Departure Headway (Hd)	4.556	5.89	4.684	5.523	5.021
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	789	609	764	649	715
Service Time	2.577	3.622	2.415	3.247	2.745
HCM Lane V/C Ratio	0.29	0.136	0.031	0.04	0.15
HCM Control Delay	9.4	9.5	7.6	8.5	8.6
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	1.2	0.5	0.1	0.1	0.5

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	44	65	9	0	33	71	29	0	11	406	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	48	71	10	0	36	77	32	0	12	441	55
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	10.6	10.7	12.3
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	5%	0%	100%	0%	100%	0%	23%	0%
Vol Thru, %	95%	80%	0%	88%	0%	71%	77%	75%
Vol Right, %	0%	20%	0%	12%	0%	29%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	214	254	44	74	33	100	106	109
LT Vol	203	203	0	65	0	71	82	82
Through Vol	0	51	0	9	0	29	0	27
RT Vol	11	0	44	0	33	0	24	0
Lane Flow Rate	233	276	48	80	36	109	115	118
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.374	0.431	0.096	0.148	0.072	0.195	0.199	0.195
Departure Headway (Hd)	5.785	5.617	7.213	6.617	7.184	6.469	6.217	5.926
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	621	641	496	541	498	554	576	604
Service Time	3.519	3.351	4.962	4.367	4.933	4.218	3.962	3.671
HCM Lane V/C Ratio	0.375	0.431	0.097	0.148	0.072	0.197	0.2	0.195
HCM Control Delay	12	12.6	10.7	10.5	10.5	10.8	10.5	10.1
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.7	2.2	0.3	0.5	0.2	0.7	0.7	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	24	164	27
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	26	178	29
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.3
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	7	8	6	0	40	10	35	0	26	345	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	9	7	0	43	11	38	0	28	375	37
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.4	9.9	10.8
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	13%	0%	33%	47%	10%	0%
Vol Thru, %	87%	84%	38%	12%	90%	97%
Vol Right, %	0%	16%	29%	41%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	199	207	21	85	255	236
LT Vol	173	173	8	10	229	229
Through Vol	0	34	6	35	0	7
RT Vol	26	0	7	40	26	0
Lane Flow Rate	216	224	23	92	277	257
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.327	0.329	0.039	0.149	0.412	0.376
Departure Headway (Hd)	5.464	5.282	6.128	5.793	5.35	5.278
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	652	673	588	613	668	675
Service Time	3.249	3.066	4.128	3.892	3.129	3.057
HCM Lane V/C Ratio	0.331	0.333	0.039	0.15	0.415	0.381
HCM Control Delay	10.9	10.7	9.4	9.9	11.9	11.2
HCM Lane LOS	B	B	A	A	B	B
HCM 95th-tile Q	1.4	1.4	0.1	0.5	2	1.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	26	458	7
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	28	498	8
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	11.6
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	6	81	2	0	29	84	44	0	11	144	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	88	2	0	32	91	48	0	12	157	105
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.1	9.6	10.1
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	7%	18%	39%
Vol Thru, %	57%	91%	54%	55%
Vol Right, %	38%	2%	28%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	252	89	157	150
LT Vol	144	81	84	82
Through Vol	97	2	44	10
RT Vol	11	6	29	58
Lane Flow Rate	274	97	171	163
Geometry Grp	1	1	1	1
Degree of Util (X)	0.349	0.139	0.235	0.225
Departure Headway (Hd)	4.588	5.191	4.958	4.968
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	778	684	718	717
Service Time	2.652	3.277	3.034	3.041
HCM Lane V/C Ratio	0.352	0.142	0.238	0.227
HCM Control Delay	10.1	9.1	9.6	9.5
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.6	0.5	0.9	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	58	82	10
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	63	89	11
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.5
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	27.3
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	70	100	54	0	36	121	91	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	76	109	59	0	39	132	99	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	13.5	13.8
HCM LOS	B	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	15%	8%
Vol Thru, %	45%	49%	82%
Vol Right, %	24%	37%	10%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	224	248	557
LT Vol	100	121	457
Through Vol	54	91	54
RT Vol	70	36	46
Lane Flow Rate	243	270	605
Geometry Grp	1	1	1
Degree of Util (X)	0.413	0.446	0.906
Departure Headway (Hd)	6.1	5.95	5.389
Convergence, Y/N	Yes	Yes	Yes
Cap	587	601	672
Service Time	4.181	4.03	3.444
HCM Lane V/C Ratio	0.414	0.449	0.9
HCM Control Delay	13.5	13.8	38.9
HCM Lane LOS	B	B	E
HCM 95th-tile Q	2	2.3	11.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	46	457	54
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	50	497	59
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	38.9
HCM LOS	E

Lane

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	21	296	440	283	78	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	322	478	308	85	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	786	0	-	0	999	632
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	367	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	833	-	-	-	270	480
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	701	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	833	-	-	-	263	480
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	682	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	24.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	833	-	-	-	281
HCM Lane V/C Ratio	0.027	-	-	-	0.352
HCM Control Delay (s)	9.4	-	-	-	24.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.5

Intersection	
Intersection Delay, s/veh	59.7
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	303	69	0	34	468	0	0	232	0	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	329	75	0	37	509	0	0	252	0	47
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	57.8	77.6	59.9
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	84%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	16%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	275	303	69	34	468	138	324	44
LT Vol	0	303	0	0	468	0	324	0
Through Vol	43	0	69	0	0	0	0	44
RT Vol	232	0	0	34	0	138	0	0
Lane Flow Rate	299	329	75	37	509	150	352	48
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.895	0.943	0.2	0.113	1	0.409	0.911	0.114
Departure Headway (Hd)	10.774	10.303	9.599	11.024	10.497	9.941	9.441	8.74
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	338	352	375	326	351	365	387	413
Service Time	8.494	8.023	7.32	8.765	8.238	7.641	7.141	6.44
HCM Lane V/C Ratio	0.885	0.935	0.2	0.113	1.45	0.411	0.91	0.116
HCM Control Delay	59.9	67.6	14.7	15.2	82.1	19.4	57.5	12.6
HCM Lane LOS	F	F	B	C	F	C	F	B
HCM 95th-tile Q	8.6	9.9	0.7	0.4	11.3	1.9	9.5	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	138	324	44
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	150	352	48
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	43.2
HCM LOS	E

Lane

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	10	0	2	0	3	60	19	485	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	2	0	3	65	21	527	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1493	1756	543	1212	1768	264	1086	0	0
Stage 1	1186	1186	-	569	569	-	-	-	-
Stage 2	307	570	-	643	1199	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	85	84	484	138	83	734	638	-	-
Stage 1	200	260	-	474	504	-	-	-	-
Stage 2	678	504	-	428	257	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	70	77	484	128	76	734	638	-	-
Mov Cap-2 Maneuver	70	77	-	128	76	-	-	-	-
Stage 1	193	246	-	458	487	-	-	-	-
Stage 2	593	487	-	403	243	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	57	13	0.4
HCM LOS	F	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	638	-	-	82	520	1035	-	-
HCM Lane V/C Ratio	0.032	-	-	0.159	0.132	0.055	-	-
HCM Control Delay (s)	10.8	-	-	57	13	8.7	-	-
HCM Lane LOS	B	-	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.5	0.2	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	52	976	23
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	57	1061	25

Major/Minor	Major2		
Conflicting Flow All	528	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1035	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1035	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	6	0	3	0	0	42	1	464	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	3	0	0	46	1	504	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1339	1595	499	1094	1593	254	998	0	0
Stage 1	1085	1085	-	508	508	-	-	-	-
Stage 2	254	510	-	586	1085	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	111	106	517	168	106	745	689	-	-
Stage 1	231	291	-	516	537	-	-	-	-
Stage 2	728	536	-	463	291	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	101	101	517	161	101	745	689	-	-
Mov Cap-2 Maneuver	101	101	-	161	101	-	-	-	-
Stage 1	231	279	-	515	536	-	-	-	-
Stage 2	682	535	-	441	279	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	33.1	10.1	0
HCM LOS	D	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	689	-	-	138	745	1053	-	-
HCM Lane V/C Ratio	0.002	-	-	0.071	0.061	0.041	-	-
HCM Control Delay (s)	10.2	0	-	33.1	10.1	8.6	-	-
HCM Lane LOS	B	A	-	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	40	918	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	43	998	0

Major/Minor	Major2		
Conflicting Flow All	508	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1053	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1053	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	5	223	13	37	245	7	23	5	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	242	14	40	266	8	25	5	59

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	274	0	0	257	0	0	617	614	249
Stage 1	-	-	-	-	-	-	260	260	-
Stage 2	-	-	-	-	-	-	357	354	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1289	-	-	1308	-	-	402	407	790
Stage 1	-	-	-	-	-	-	745	693	-
Stage 2	-	-	-	-	-	-	661	630	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1289	-	-	1308	-	-	384	393	790
Mov Cap-2 Maneuver	-	-	-	-	-	-	384	393	-
Stage 1	-	-	-	-	-	-	742	690	-
Stage 2	-	-	-	-	-	-	630	611	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	1	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	582	1289	-	-	1308	-	-	462
HCM Lane V/C Ratio	0.153	0.004	-	-	0.031	-	-	0.04
HCM Control Delay (s)	12.3	7.8	-	-	7.8	-	-	13.1
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	6	4	7
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	7	4	8

Major/Minor	Minor2		
Conflicting Flow All	643	618	270
Stage 1	351	351	-
Stage 2	292	267	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	386	405	769
Stage 1	666	632	-
Stage 2	716	688	-
Platoon blocked, %			
Mov Cap-1 Maneuver	344	391	769
Mov Cap-2 Maneuver	344	391	-
Stage 1	663	613	-
Stage 2	655	685	-

Approach	SB
HCM Control Delay, s	13.1
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	13	240	30	69	258	21	28	28	123
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	261	33	75	280	23	30	30	134

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	303	0	0	293	0	0	771	758	277
Stage 1	-	-	-	-	-	-	305	305	-
Stage 2	-	-	-	-	-	-	466	453	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1258	-	-	1269	-	-	317	336	762
Stage 1	-	-	-	-	-	-	705	662	-
Stage 2	-	-	-	-	-	-	577	570	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1258	-	-	1269	-	-	269	313	762
Mov Cap-2 Maneuver	-	-	-	-	-	-	269	313	-
Stage 1	-	-	-	-	-	-	697	655	-
Stage 2	-	-	-	-	-	-	498	536	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	1.6	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	504	1258	-	-	1269	-	-	306
HCM Lane V/C Ratio	0.386	0.011	-	-	0.059	-	-	0.213
HCM Control Delay (s)	16.6	7.9	-	-	8	-	-	19.9
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.8	0	-	-	0.2	-	-	0.8

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	15	34	11
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	16	37	12

Major/Minor	Minor2		
Conflicting Flow All	830	764	292
Stage 1	442	442	-
Stage 2	388	322	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	289	334	747
Stage 1	594	576	-
Stage 2	636	651	-
Platoon blocked, %			
Mov Cap-1 Maneuver	209	311	747
Mov Cap-2 Maneuver	209	311	-
Stage 1	587	542	-
Stage 2	494	644	-

Approach	SB
HCM Control Delay, s	19.9
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	173	2	21	0	0	6	3	0	12	22	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	188	2	23	0	0	7	3	0	13	24	0
Number of Lanes	0	1	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	9.2	8.2	8.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	35%	100%	76%	0%	39%	0%
Vol Thru, %	65%	0%	2%	67%	61%	0%
Vol Right, %	0%	0%	22%	33%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	99	97	9	28	145
LT Vol	22	0	2	6	17	0
Through Vol	0	0	21	3	0	145
RT Vol	12	99	74	0	11	0
Lane Flow Rate	37	107	106	10	30	158
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.055	0.166	0.156	0.014	0.045	0.196
Departure Headway (Hd)	5.404	5.574	5.304	5.136	5.372	4.471
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	663	644	676	696	668	804
Service Time	3.436	3.303	3.033	3.174	3.093	2.192
HCM Lane V/C Ratio	0.056	0.166	0.157	0.014	0.045	0.197
HCM Control Delay	8.8	9.4	9	8.2	8.3	8.3
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.6	0.6	0	0.1	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	11	17	145
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	12	18	158
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	8.3
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	11	33	62	0	5	25	12	0	18	249	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	36	67	0	5	27	13	0	20	271	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.8	8.6	9.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	13%	0%	10%	12%	3%	0%
Vol Thru, %	87%	98%	31%	60%	97%	93%
Vol Right, %	0%	2%	58%	29%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	143	127	106	42	104	109
LT Vol	125	125	33	25	101	101
Through Vol	0	2	62	12	0	8
RT Vol	18	0	11	5	3	0
Lane Flow Rate	155	137	115	46	113	118
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.225	0.197	0.156	0.065	0.164	0.17
Departure Headway (Hd)	5.219	5.145	4.867	5.154	5.234	5.167
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	686	696	734	691	683	692
Service Time	2.969	2.894	2.919	3.218	2.985	2.919
HCM Lane V/C Ratio	0.226	0.197	0.157	0.067	0.165	0.171
HCM Control Delay	9.5	9.2	8.8	8.6	9	9
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.9	0.7	0.6	0.2	0.6	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	202	8
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	220	9
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	84	47	0	163	75	0	33	237
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	91	51	0	177	82	0	36	258
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.6	10.6	10.7
HCM LOS	A	B	B

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	68%	0%	0%	0%	100%
Vol Right, %	32%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	84	47	33	237
LT Vol	163	0	0	0	237
Through Vol	75	0	47	0	0
RT Vol	0	84	0	33	0
Lane Flow Rate	259	91	51	36	258
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.353	0.161	0.073	0.057	0.37
Departure Headway (Hd)	4.909	6.359	5.148	5.68	5.177
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	730	562	691	629	693
Service Time	2.957	4.13	2.918	3.429	2.925
HCM Lane V/C Ratio	0.355	0.162	0.074	0.057	0.372
HCM Control Delay	10.6	10.4	8.3	8.8	11
HCM Lane LOS	B	B	A	A	B
HCM 95th-tile Q	1.6	0.6	0.2	0.2	1.7

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	30	64	14	0	69	80	30	0	23	338	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	33	70	15	0	75	87	33	0	25	367	78
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.5	11.9	13.3
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	12%	0%	100%	0%	100%	0%	18%	0%
Vol Thru, %	88%	70%	0%	82%	0%	73%	82%	87%
Vol Right, %	0%	30%	0%	18%	0%	27%	0%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	192	241	30	78	69	110	221	209
LT Vol	169	169	0	64	0	80	181	181
Through Vol	0	72	0	14	0	30	0	28
RT Vol	23	0	30	0	69	0	40	0
Lane Flow Rate	209	262	33	85	75	120	240	227
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.37	0.444	0.072	0.171	0.161	0.233	0.427	0.392
Departure Headway (Hd)	6.38	6.107	7.894	7.253	7.708	7.001	6.408	6.221
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	561	587	451	491	463	509	558	576
Service Time	4.156	3.883	5.689	5.048	5.493	4.786	4.183	3.996
HCM Lane V/C Ratio	0.373	0.446	0.073	0.173	0.162	0.236	0.43	0.394
HCM Control Delay	12.9	13.7	11.3	11.6	12	11.9	13.9	13
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.7	2.3	0.2	0.6	0.6	0.9	2.1	1.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	40	361	28
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	43	392	30
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.5
HCM LOS	B

Lane

CUMULATIVE PLUS PROJECT ALTERNATIVE 5 (NO PACIFIC RECONNECTION)

Project Title: **Redondo Beach Waterfront**
Intersection: **4 Harbor Dr/Hermosa Ave & Herondo St**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.315 *
	TH	1.00	142	1,600	0.089	N-S(2):	0.089
	LT	1.00	120	1,600	0.075 *	E-W(1):	0.084
Westbound	RT	1.00	294	1,600	0.146 *	E-W(2):	0.147 *
	TH	0.00	0	0	0.000		
	LT	1.00	134	1,600	0.084	V/C:	0.462
Northbound	RT	0.00	92	0	0.000	Lost Time:	0.100
	TH	1.00	292	1,600	0.240 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.562
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.343 *
	TH	1.00	372	1,600	0.233	N-S(2):	0.234
	LT	1.00	162	1,600	0.101 *	E-W(1):	0.164 *
Westbound	RT	1.00	192	1,600	0.069	E-W(2):	0.069
	TH	0.00	0	0	0.000		
	LT	1.00	263	1,600	0.164 *	V/C:	0.507
Northbound	RT	0.00	169	0	0.000	Lost Time:	0.100
	TH	1.00	217	1,600	0.242 *	ITS:	0.000
	LT	0.00	1	1,600	0.001		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.607
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **7 Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	183	1,600	0.114	N-S(1):	0.577 *
	TH	2.00	954	3,200	0.298	N-S(2):	0.312
	LT	1.00	156	1,600	0.098 *	E-W(1):	0.259 *
Westbound	RT	1.00	410	1,600	0.159	E-W(2):	0.242
	TH	1.00	204	1,600	0.128		
	LT	2.00	273	2,880	0.095 *	V/C:	0.836
Northbound	RT	1.00	130	1,600	0.034	Lost Time:	0.100
	TH	3.00	2,299	4,800	0.479 *	ITS:	0.000
	LT	1.00	23	1,600	0.014		
Eastbound	RT	1.00	57	1,600	0.028	ICU:	0.936
	TH	1.00	262	1,600	0.164 *		
	LT	1.00	132	1,600	0.083	LOS:	E

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	561	1,600	0.351	N-S(1):	0.446
	TH	2.00	1,972	3,200	0.616 *	N-S(2):	0.666 *
	LT	1.00	219	1,600	0.137	E-W(1):	0.304 *
Westbound	RT	1.00	272	1,600	0.033	E-W(2):	0.272
	TH	1.00	329	1,600	0.206		
	LT	2.00	346	2,880	0.120 *	V/C:	0.970
Northbound	RT	1.00	249	1,600	0.096	Lost Time:	0.100
	TH	3.00	1,482	4,800	0.309	ITS:	0.000
	LT	1.00	80	1,600	0.050 *		
Eastbound	RT	1.00	98	1,600	0.061	ICU:	1.070
	TH	1.00	295	1,600	0.184 *		
	LT	1.00	106	1,600	0.066	LOS:	F

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **8 Prospect Ave & Anita St**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	36	0	0.000	N-S(1):	0.313 *
	TH	2.00	331	3,200	0.115	N-S(2):	0.258
	LT	1.00	63	1,600	0.039 *	E-W(1):	0.270
Westbound	RT	0.00	85	0	0.000	E-W(2):	0.287 *
	TH	2.00	786	3,200	0.272 *		
	LT	1.00	147	1,600	0.092	V/C:	0.600
Northbound	RT	1.00	160	1,600	0.054	Lost Time:	0.100
	TH	1.00	439	1,600	0.274 *	ITS:	0.000
	LT	1.00	229	1,600	0.143		
Eastbound	RT	0.00	60	0	0.000	ICU:	0.700
	TH	2.00	511	3,200	0.178		
	LT	1.00	24	1,600	0.015 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	68	0	0.000	N-S(1):	0.245
	TH	2.00	570	3,200	0.199 *	N-S(2):	0.287 *
	LT	1.00	91	1,600	0.057	E-W(1):	0.308 *
Westbound	RT	0.00	82	0	0.000	E-W(2):	0.293
	TH	2.00	775	3,200	0.268		
	LT	1.00	109	1,600	0.068 *	V/C:	0.595
Northbound	RT	1.00	78	1,600	0.015	Lost Time:	0.100
	TH	1.00	301	1,600	0.188	ITS:	0.000
	LT	1.00	141	1,600	0.088 *		
Eastbound	RT	0.00	107	0	0.000	ICU:	0.695
	TH	2.00	660	3,200	0.240 *		
	LT	1.00	40	1,600	0.025	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **9 Harbor Dr & Yacht Club Way**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.250 *
	TH	1.00	209	1,600	0.144	N-S(2):	0.155
	LT	1.00	6	1,600	0.004 *	E-W(1):	0.034 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.025
	TH	1.00	1	1,600	0.002		
	LT	0.00	2	1,600	0.001 *	V/C:	0.284
Northbound	RT	0.00	1	0	0.000	Lost Time:	0.100
	TH	1.00	393	1,600	0.246 *	ITS:	0.000
	LT	1.00	17	1,600	0.011		
Eastbound	RT	0.00	15	0	0.000	ICU:	0.384
	TH	1.00	1	1,600	0.033 *		
	LT	0.00	36	1,600	0.023	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	51	0	0.000	N-S(1):	0.208
	TH	1.00	577	1,600	0.393 *	N-S(2):	0.407 *
	LT	1.00	11	1,600	0.007	E-W(1):	0.034
Westbound	RT	0.00	42	0	0.000	E-W(2):	0.048 *
	TH	1.00	0	1,600	0.028 *		
	LT	0.00	3	1,600	0.002	V/C:	0.455
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	1.00	319	1,600	0.201	ITS:	0.000
	LT	1.00	23	1,600	0.014 *		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.555
	TH	1.00	0	1,600	0.032		
	LT	0.00	32	1,600	0.020 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **10 Pacific Coast Hwy & Catalina Ave**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000	N-S(1):	0.582 *
	TH	2.00	1,107	3,200	0.346	N-S(2):	0.350
	LT	0.00	0	0	0.000 *	E-W(1):	0.184
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.207 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.789
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,863	3,200	0.582 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.01	4	22	0.184	ICU:	0.889
	TH	0.00	0	0	0.000		
	LT	1.99	591	2,861	0.207 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	2	0	0.000	N-S(1):	0.436
	TH	2.00	2,149	3,200	0.672 *	N-S(2):	0.681 *
	LT	0.00	0	0	0.000	E-W(1):	0.133
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.153 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.834
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,395	3,200	0.436	ITS:	0.000
	LT	1.00	15	1,600	0.009 *		
Eastbound	RT	0.10	22	160	0.133	ICU:	0.934
	TH	0.00	0	0	0.000		
	LT	1.90	418	2,736	0.153 *	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **11 Harbor Dr & Marina Way**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	78	1,600	0.049	N-S(1):	0.184 *
	TH	1.00	199	1,600	0.124	N-S(2):	0.160
	LT	0.00	0	0	0.000 *	E-W(1):	0.009
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.028 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.212
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	294	1,600	0.184 *	ITS:	0.000
	LT	1.00	58	1,600	0.036		
Eastbound	RT	1.00	43	1,600	0.009	ICU:	0.312
	TH	0.00	0	0	0.000		
	LT	1.00	44	1,600	0.028 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	74	1,600	0.046	N-S(1):	0.216
	TH	1.00	550	1,600	0.344 *	N-S(2):	0.400 *
	LT	0.00	0	0	0.000	E-W(1):	0.018
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.037 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.437
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	346	1,600	0.216	ITS:	0.000
	LT	1.00	89	1,600	0.056 *		
Eastbound	RT	1.00	73	1,600	0.018	ICU:	0.537
	TH	0.00	0	0	0.000		
	LT	1.00	59	1,600	0.037 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **12 Catalina Ave & Gertruda Ave**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	54	0	0.000	N-S(1):	0.174
	TH	2.00	273	3,200	0.102 *	N-S(2):	0.268 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.018
Westbound	RT	0.00	15	0	0.000	E-W(2):	0.028 *
	TH	1.00	3	1,600	0.020 *		
	LT	0.00	14	1,600	0.009	V/C:	0.296
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	525	3,200	0.170	ITS:	0.000
	LT	1.00	266	1,600	0.166 *		
Eastbound	RT	1.00	147	1,600	0.009	ICU:	0.396
	TH	1.00	2	1,600	0.009		
	LT	0.00	13	1,600	0.008 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	70	0	0.000	N-S(1):	0.125
	TH	2.00	726	3,200	0.249 *	N-S(2):	0.362 *
	LT	1.00	5	1,600	0.003	E-W(1):	0.168 *
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.045
	TH	1.00	4	1,600	0.013		
	LT	0.00	6	1,600	0.004 *	V/C:	0.530
Northbound	RT	0.00	7	0	0.000	Lost Time:	0.100
	TH	2.00	382	3,200	0.122	ITS:	0.000
	LT	1.00	181	1,600	0.113 *		
Eastbound	RT	1.00	353	1,600	0.164 *	ICU:	0.630
	TH	1.00	2	1,600	0.033		
	LT	0.00	51	1,600	0.032	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **15 Harbor Dr & Portofino Way/Beryl St**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	NBR, WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	46	1,600	0.014	N-S(1):	0.136 *
	TH	1.00	80	1,600	0.050	N-S(2):	0.054
	LT	1.00	121	1,600	0.076 *	E-W(1):	0.111
Westbound	RT	1.00	256	1,600	0.084 *	E-W(2):	0.113 *
	TH	1.00	127	1,600	0.079		
	LT	1.00	75	1,600	0.047	V/C:	0.249
Northbound	RT	0.00	52	0	0.000	Lost Time:	0.100
	TH	1.00	44	1,600	0.060 *	ITS:	0.000
	LT	1.00	7	1,600	0.004		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.349
	TH	1.00	96	1,600	0.064		
	LT	1.00	46	1,600	0.029 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	118	1,600	0.045	N-S(1):	0.313 *
	TH	1.00	218	1,600	0.136	N-S(2):	0.143
	LT	1.00	280	1,600	0.175 *	E-W(1):	0.264 *
Westbound	RT	1.00	306	1,600	0.016	E-W(2):	0.226
	TH	1.00	271	1,600	0.169		
	LT	1.00	194	1,600	0.121 *	V/C:	0.577
Northbound	RT	0.00	133	0	0.000	Lost Time:	0.100
	TH	1.00	88	1,600	0.138 *	ITS:	0.000
	LT	1.00	11	1,600	0.007		
Eastbound	RT	0.00	25	0	0.000	ICU:	0.677
	TH	1.00	203	1,600	0.143 *		
	LT	1.00	91	1,600	0.057	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **16 Catalina Ave & Beryl St**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	96	0	0.000	N-S(1):	0.206
	TH	2.00	260	3,200	0.111 *	N-S(2):	0.221 *
	LT	0.00	0	0	0.000	E-W(1):	0.053
Westbound	RT	1.00	7	1,600	0.004	E-W(2):	0.105 *
	TH	1.00	121	1,600	0.076 *		
	LT	1.00	25	1,600	0.016	V/C:	0.326
Northbound	RT	0.00	43	0	0.000	Lost Time:	0.100
	TH	2.00	616	3,200	0.206	ITS:	0.000
	LT	2.00	316	2,880	0.110 *		
Eastbound	RT	1.00	133	1,600	0.000	ICU:	0.426
	TH	1.00	59	1,600	0.037		
	LT	1.00	47	1,600	0.029 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	236	0	0.000	N-S(1):	0.147
	TH	2.00	675	3,200	0.286 *	N-S(2):	0.404 *
	LT	0.00	3	1,600	0.002	E-W(1):	0.143
Westbound	RT	1.00	19	1,600	0.011	E-W(2):	0.204 *
	TH	1.00	238	1,600	0.149 *		
	LT	1.00	38	1,600	0.024	V/C:	0.608
Northbound	RT	0.00	62	0	0.000	Lost Time:	0.100
	TH	2.00	403	3,200	0.145	ITS:	0.000
	LT	2.00	340	2,880	0.118 *		
Eastbound	RT	1.00	354	1,600	0.103	ICU:	0.708
	TH	1.00	191	1,600	0.119		
	LT	1.00	88	1,600	0.055 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **19 Pacific Coast Hwy & Beryl St**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	27	0	0.000	N-S(1):	0.562 *
	TH	2.00	1,067	3,200	0.342	N-S(2):	0.373
	LT	1.00	19	1,600	0.012 *	E-W(1):	0.130 *
Westbound	RT	1.00	29	1,600	0.012	E-W(2):	0.085
	TH	1.00	102	1,600	0.064		
	LT	1.00	60	1,600	0.038 *	V/C:	0.692
Northbound	RT	0.00	52	0	0.000	Lost Time:	0.100
	TH	2.00	1,707	3,200	0.550 *	ITS:	0.000
	LT	1.00	49	1,600	0.031		
Eastbound	RT	0.00	29	0	0.000	ICU:	0.792
	TH	1.00	118	1,600	0.092 *		
	LT	1.00	33	1,600	0.021	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	71	0	0.000	N-S(1):	0.437
	TH	2.00	1,956	3,200	0.633 *	N-S(2):	0.671 *
	LT	1.00	42	1,600	0.026	E-W(1):	0.202 *
Westbound	RT	1.00	42	1,600	0.013	E-W(2):	0.182
	TH	1.00	203	1,600	0.127		
	LT	1.00	80	1,600	0.050 *	V/C:	0.873
Northbound	RT	0.00	59	0	0.000	Lost Time:	0.100
	TH	2.00	1,256	3,200	0.411	ITS:	0.000
	LT	1.00	60	1,600	0.038 *		
Eastbound	RT	0.00	70	0	0.000	ICU:	0.973
	TH	1.00	173	1,600	0.152 *		
	LT	1.00	88	1,600	0.055	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **21 Catalina Ave & Carnelian St**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	0	1,600	0.000	N-S(1):	0.321 *
	TH	2.00	395	3,200	0.123	N-S(2):	0.126
	LT	1.00	21	1,600	0.013 *	E-W(1):	0.023
Westbound	RT	0.00	36	0	0.000	E-W(2):	0.039 *
	TH	1.00	1	1,600	0.035 *		
	LT	0.00	19	1,600	0.012	V/C:	0.360
Northbound	RT	1.00	22	1,600	0.008	Lost Time:	0.100
	TH	2.00	987	3,200	0.308 *	ITS:	0.000
	LT	1.00	4	1,600	0.003		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.460
	TH	1.00	4	1,600	0.011		
	LT	0.00	7	1,600	0.004 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	5	1,600	0.003	N-S(1):	0.325
	TH	2.00	1,126	3,200	0.352 *	N-S(2):	0.357 *
	LT	1.00	92	1,600	0.058	E-W(1):	0.027
Westbound	RT	0.00	41	0	0.000	E-W(2):	0.053 *
	TH	1.00	8	1,600	0.052 *		
	LT	0.00	34	1,600	0.021	V/C:	0.410
Northbound	RT	1.00	42	1,600	0.016	Lost Time:	0.100
	TH	2.00	855	3,200	0.267	ITS:	0.000
	LT	1.00	8	1,600	0.005 *		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.510
	TH	1.00	4	1,600	0.006		
	LT	0.00	1	1,600	0.001 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **22 Catalina Ave & Diamond St**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	4	1,600	0.000	N-S(1):	0.309 *
	TH	2.00	383	3,200	0.120	N-S(2):	0.121
	LT	1.00	31	1,600	0.019 *	E-W(1):	0.041
Westbound	RT	0.00	58	0	0.000	E-W(2):	0.048 *
	TH	1.00	1	1,600	0.037 *		
	LT	1.00	34	1,600	0.021	V/C:	0.357
Northbound	RT	1.00	67	1,600	0.031	Lost Time:	0.100
	TH	2.00	928	3,200	0.290 *	ITS:	0.000
	LT	1.00	2	1,600	0.001		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.457
	TH	1.00	9	1,600	0.020		
	LT	0.00	17	1,600	0.011 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.005	N-S(1):	0.300
	TH	2.00	1,082	3,200	0.338 *	N-S(2):	0.344 *
	LT	1.00	65	1,600	0.041	E-W(1):	0.042
Westbound	RT	0.00	69	0	0.000	E-W(2):	0.049 *
	TH	1.00	4	1,600	0.046 *		
	LT	1.00	58	1,600	0.036	V/C:	0.393
Northbound	RT	1.00	65	1,600	0.023	Lost Time:	0.100
	TH	2.00	830	3,200	0.259	ITS:	0.000
	LT	1.00	10	1,600	0.006 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.493
	TH	1.00	2	1,600	0.006		
	LT	0.00	4	1,600	0.003 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **23 Catalina Ave & Emerald St**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	6	1,600	0.000	N-S(1):	0.304 *
	TH	2.00	392	3,200	0.123	N-S(2):	0.127
	LT	1.00	17	1,600	0.011 *	E-W(1):	0.067
Westbound	RT	0.00	34	0	0.000	E-W(2):	0.069 *
	TH	1.00	4	1,600	0.033 *		
	LT	0.00	15	1,600	0.009	V/C:	0.373
Northbound	RT	0.00	28	0	0.000	Lost Time:	0.100
	TH	2.00	911	3,200	0.293 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.00	25	0	0.000	ICU:	0.473
	TH	1.00	9	1,600	0.058		
	LT	0.00	58	1,600	0.036 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	29	1,600	0.010	N-S(1):	0.293
	TH	2.00	1,073	3,200	0.335 *	N-S(2):	0.347 *
	LT	1.00	40	1,600	0.025	E-W(1):	0.047
Westbound	RT	0.00	31	0	0.000	E-W(2):	0.056 *
	TH	1.00	6	1,600	0.039 *		
	LT	0.00	25	1,600	0.016	V/C:	0.403
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	839	3,200	0.268	ITS:	0.000
	LT	1.00	19	1,600	0.012 *		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.503
	TH	1.00	6	1,600	0.031		
	LT	0.00	27	1,600	0.017 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **24 Pacific Coast Hwy & Garnet St**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	8	0	0.000	N-S(1):	0.567 *
	TH	2.00	965	3,200	0.304	N-S(2):	0.304
	LT	0.00	1	1,600	0.001 *	E-W(1):	0.017
Westbound	RT	0.00	47	0	0.000	E-W(2):	0.047 *
	TH	1.00	18	1,600	0.041 *		
	LT	1.00	3	1,600	0.002	V/C:	0.614
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	1,802	3,200	0.566 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.714
	TH	1.00	5	1,600	0.015		
	LT	1.00	9	1,600	0.006 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	31	0	0.000	N-S(1):	0.441
	TH	2.00	1,731	3,200	0.552 *	N-S(2):	0.552 *
	LT	0.00	4	1,600	0.003	E-W(1):	0.032
Westbound	RT	0.00	42	0	0.000	E-W(2):	0.043 *
	TH	1.00	16	1,600	0.036 *		
	LT	1.00	13	1,600	0.008	V/C:	0.595
Northbound	RT	0.00	44	0	0.000	Lost Time:	0.100
	TH	2.00	1,357	3,200	0.438	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.695
	TH	1.00	16	1,600	0.024		
	LT	1.00	11	1,600	0.007 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **25 Catalina Ave & Torrance Blvd**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	83	1,600	0.038	N-S(1):	0.280 *
	TH	2.00	260	3,200	0.081	N-S(2):	0.094
	LT	1.00	129	1,600	0.081 *	E-W(1):	0.067 *
Westbound	RT	1.00	179	1,600	0.031	E-W(2):	0.059
	TH	2.00	92	3,200	0.029		
	LT	1.00	80	1,600	0.050 *	V/C:	0.347
Northbound	RT	1.00	159	1,600	0.074	Lost Time:	0.100
	TH	2.00	636	3,200	0.199 *	ITS:	0.000
	LT	1.00	20	1,600	0.013		
Eastbound	RT	1.00	15	1,600	0.003	ICU:	0.447
	TH	2.00	55	3,200	0.017 *		
	LT	1.00	45	1,600	0.028	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	162	1,600	0.073	N-S(1):	0.300 *
	TH	2.00	741	3,200	0.232	N-S(2):	0.265
	LT	1.00	241	1,600	0.151 *	E-W(1):	0.116
Westbound	RT	1.00	260	1,600	0.012	E-W(2):	0.125 *
	TH	2.00	214	3,200	0.067 *		
	LT	1.00	101	1,600	0.063	V/C:	0.425
Northbound	RT	1.00	100	1,600	0.031	Lost Time:	0.100
	TH	2.00	476	3,200	0.149 *	ITS:	0.000
	LT	1.00	52	1,600	0.033		
Eastbound	RT	1.00	38	1,600	0.008	ICU:	0.525
	TH	2.00	171	3,200	0.053		
	LT	1.00	92	1,600	0.058 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **26 Pacific Coast Hwy & Torrance Blvd**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	29	0	0.000	N-S(1):	0.564 *
	TH	2.00	896	3,200	0.289	N-S(2):	0.333
	LT	1.00	233	1,600	0.146 *	E-W(1):	0.196 *
Westbound	RT	1.00	232	1,600	0.072	E-W(2):	0.145
	TH	2.00	359	3,200	0.112		
	LT	1.00	131	1,600	0.082 *	V/C:	0.760
Northbound	RT	0.00	77	0	0.000	Lost Time:	0.100
	TH	2.00	1,260	3,200	0.418 *	ITS:	0.000
	LT	1.00	70	1,600	0.044		
Eastbound	RT	0.00	57	0	0.000	ICU:	0.860
	TH	2.00	308	3,200	0.114 *		
	LT	1.00	53	1,600	0.033	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	59	0	0.000	N-S(1):	0.545
	TH	2.00	1,486	3,200	0.483 *	N-S(2):	0.560 *
	LT	1.00	316	1,600	0.198	E-W(1):	0.271 *
Westbound	RT	1.00	308	1,600	0.094	E-W(2):	0.205
	TH	2.00	485	3,200	0.152		
	LT	1.00	176	1,600	0.110 *	V/C:	0.831
Northbound	RT	0.00	104	0	0.000	Lost Time:	0.100
	TH	2.00	1,005	3,200	0.347	ITS:	0.000
	LT	1.00	123	1,600	0.077 *		
Eastbound	RT	0.00	109	0	0.000	ICU:	0.931
	TH	2.00	406	3,200	0.161 *		
	LT	1.00	85	1,600	0.053	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **27 Helberta Ave/Camino Real & Torrance Blvd**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	16	0	0.000	N-S(1):	0.157 *
	TH	1.00	64	1,600	0.063 *	N-S(2):	0.000
	LT	0.00	21	1,600	0.013	E-W(1):	0.236 *
Westbound	RT	0.00	26	0	0.000	E-W(2):	0.205
	TH	2.00	588	3,200	0.192		
	LT	1.00	30	1,600	0.019 *	V/C:	0.393
Northbound	RT	0.00	38	0	0.000	Lost Time:	0.100
	TH	0.60	43	956	0.085	ITS:	0.000
	LT	1.40	190	2,019	0.094 *		
Eastbound	RT	0.00	117	0	0.000	ICU:	0.493
	TH	2.00	578	3,200	0.217 *		
	LT	1.00	20	1,600	0.013	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	11	0	0.000	N-S(1):	0.139 *
	TH	1.00	29	1,600	0.037 *	N-S(2):	0.000
	LT	0.00	19	1,600	0.012	E-W(1):	0.308 *
Westbound	RT	0.00	16	0	0.000	E-W(2):	0.234
	TH	2.00	710	3,200	0.227		
	LT	1.00	46	1,600	0.029 *	V/C:	0.447
Northbound	RT	0.00	29	0	0.000	Lost Time:	0.100
	TH	0.41	31	653	0.092	ITS:	0.000
	LT	1.59	234	2,292	0.102 *		
Eastbound	RT	0.00	169	0	0.000	ICU:	0.547
	TH	2.00	723	3,200	0.279 *		
	LT	1.00	11	1,600	0.007	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **28 Prospect Ave & Torrance Blvd**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	66	0	0.000	N-S(1):	0.429 *
	TH	2.00	599	3,200	0.208	N-S(2):	0.242
	LT	1.00	202	1,600	0.126 *	E-W(1):	0.279
Westbound	RT	0.00	172	0	0.000	E-W(2):	0.309 *
	TH	2.00	598	3,200	0.241 *		
	LT	1.00	157	1,600	0.098	V/C:	0.738
Northbound	RT	0.00	246	0	0.000	Lost Time:	0.100
	TH	2.00	723	3,200	0.303 *	ITS:	0.000
	LT	1.00	55	1,600	0.034		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.838
	TH	2.00	556	3,200	0.181		
	LT	1.00	108	1,600	0.068 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	135	0	0.000	N-S(1):	0.332 *
	TH	2.00	758	3,200	0.279	N-S(2):	0.308
	LT	1.00	211	1,600	0.132 *	E-W(1):	0.322
Westbound	RT	0.00	172	0	0.000	E-W(2):	0.332 *
	TH	2.00	702	3,200	0.273 *		
	LT	1.00	174	1,600	0.109	V/C:	0.664
Northbound	RT	0.00	114	0	0.000	Lost Time:	0.100
	TH	2.00	527	3,200	0.200 *	ITS:	0.000
	LT	1.00	46	1,600	0.029		
Eastbound	RT	0.00	44	0	0.000	ICU:	0.764
	TH	2.00	638	3,200	0.213		
	LT	1.00	94	1,600	0.059 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **29 Catalina Ave & Pearl St**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	145	1,600	0.051	N-S(1):	0.201 *
	TH	2.00	200	3,200	0.064	N-S(2):	0.068
	LT	0.00	5	1,600	0.003 *	E-W(1):	0.095 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	12	1,600	0.015 *		
	LT	0.00	0	0	0.000	V/C:	0.296
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	617	3,200	0.198 *	ITS:	0.000
	LT	0.00	7	1,600	0.004		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.396
	TH	0.15	12	235	0.072		
	LT	1.85	214	2,668	0.080 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	286	1,600	0.136	N-S(1):	0.146
	TH	2.00	553	3,200	0.183 *	N-S(2):	0.185 *
	LT	0.00	31	1,600	0.019	E-W(1):	0.101 *
Westbound	RT	0.00	13	0	0.000	E-W(2):	0.000
	TH	1.00	9	1,600	0.016 *		
	LT	0.00	4	1,600	0.003	V/C:	0.286
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	395	3,200	0.127	ITS:	0.000
	LT	0.00	3	1,600	0.002 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.386
	TH	0.11	10	169	0.077		
	LT	1.89	233	2,728	0.085 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **31 Pacific Coast Hwy & Sapphire St/Francisca Ave**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	5	0	0.000	N-S(1):	0.498 *
	TH	2.00	943	3,200	0.296	N-S(2):	0.308
	LT	1.00	27	1,600	0.017 *	E-W(1):	0.046 *
Westbound	RT	0.00	19	0	0.000	E-W(2):	0.030
	TH	1.00	10	1,600	0.021		
	LT	0.00	5	1,600	0.003 *	V/C:	0.544
Northbound	RT	0.00	38	0	0.000	Lost Time:	0.100
	TH	2.00	1,500	3,200	0.481 *	ITS:	0.000
	LT	1.00	19	1,600	0.012		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.644
	TH	1.00	37	1,600	0.043 *		
	LT	0.00	15	1,600	0.009	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	7	0	0.000	N-S(1):	0.406
	TH	2.00	1,603	3,200	0.503 *	N-S(2):	0.517 *
	LT	1.00	35	1,600	0.022	E-W(1):	0.075 *
Westbound	RT	0.00	21	0	0.000	E-W(2):	0.048
	TH	1.00	11	1,600	0.023		
	LT	0.00	5	1,600	0.003 *	V/C:	0.592
Northbound	RT	0.00	28	0	0.000	Lost Time:	0.100
	TH	2.00	1,200	3,200	0.384	ITS:	0.000
	LT	1.00	22	1,600	0.014 *		
Eastbound	RT	0.00	37	0	0.000	ICU:	0.692
	TH	1.00	38	1,600	0.072 *		
	LT	0.00	40	1,600	0.025	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **34 Pacific Coast Hwy & Knob Hill Ave**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	38	0	0.000	N-S(1):	0.483 *
	TH	2.00	892	3,200	0.291	N-S(2):	0.310
	LT	1.00	52	1,600	0.033 *	E-W(1):	0.086
Westbound	RT	0.00	59	0	0.000	E-W(2):	0.108 *
	TH	1.00	54	1,600	0.071 *		
	LT	1.00	55	1,600	0.034	V/C:	0.591
Northbound	RT	0.00	36	0	0.000	Lost Time:	0.100
	TH	2.00	1,403	3,200	0.450 *	ITS:	0.000
	LT	1.00	30	1,600	0.019		
Eastbound	RT	1.00	33	1,600	0.011	ICU:	0.691
	TH	1.00	83	1,600	0.052		
	LT	1.00	59	1,600	0.037 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	35	0	0.000	N-S(1):	0.432
	TH	2.00	1,437	3,200	0.460 *	N-S(2):	0.496 *
	LT	1.00	63	1,600	0.039	E-W(1):	0.113
Westbound	RT	0.00	59	0	0.000	E-W(2):	0.154 *
	TH	1.00	133	1,600	0.120 *		
	LT	1.00	85	1,600	0.053	V/C:	0.650
Northbound	RT	0.00	72	0	0.000	Lost Time:	0.100
	TH	2.00	1,185	3,200	0.393	ITS:	0.000
	LT	1.00	57	1,600	0.036 *		
Eastbound	RT	1.00	71	1,600	0.027	ICU:	0.750
	TH	1.00	96	1,600	0.060		
	LT	1.00	54	1,600	0.034 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **36 Pacific Coast Hwy & Palos Verdes Blvd**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	267	0	0.000	N-S(1):	0.335
	TH	2.00	581	3,200	0.265 *	N-S(2):	0.374 *
	LT	1.00	72	1,600	0.045	E-W(1):	0.269
Westbound	RT	0.00	100	0	0.000	E-W(2):	0.414 *
	TH	2.00	380	3,200	0.150 *		
	LT	1.00	73	1,600	0.046	V/C:	0.788
Northbound	RT	1.00	82	1,600	0.028	Lost Time:	0.100
	TH	2.00	927	3,200	0.290	ITS:	0.000
	LT	1.00	174	1,600	0.109 *		
Eastbound	RT	0.00	160	0	0.000	ICU:	0.888
	TH	2.00	552	3,200	0.223		
	LT	1.00	423	1,600	0.264 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	365	0	0.000	N-S(1):	0.385
	TH	2.00	1,037	3,200	0.438 *	N-S(2):	0.586 *
	LT	1.00	118	1,600	0.074	E-W(1):	0.265
Westbound	RT	0.00	138	0	0.000	E-W(2):	0.333 *
	TH	2.00	474	3,200	0.191 *		
	LT	1.00	118	1,600	0.074	V/C:	0.919
Northbound	RT	1.00	74	1,600	0.009	Lost Time:	0.100
	TH	2.00	994	3,200	0.311	ITS:	0.000
	LT	1.00	236	1,600	0.148 *		
Eastbound	RT	0.00	192	0	0.000	ICU:	1.019
	TH	2.00	419	3,200	0.191		
	LT	1.00	227	1,600	0.142 *	LOS:	F

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **37 Pacific Coast Hwy & 2nd St**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	35	0	0.000	N-S(1):	0.509 *
	TH	3.00	1,134	4,800	0.244	N-S(2):	0.250
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.105 *
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.000
	TH	1.00	2	1,600	0.021 *		
	LT	0.00	11	1,600	0.007	V/C:	0.614
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	3.00	2,439	4,800	0.509 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.32	43	510	0.081	ICU:	0.714
	TH	0.00	0	0	0.000		
	LT	0.68	92	1,090	0.084 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	73	0	0.000	N-S(1):	0.338
	TH	3.00	2,364	4,800	0.508 *	N-S(2):	0.534 *
	LT	1.00	1	1,600	0.001	E-W(1):	0.103 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	4	1,600	0.019 *		
	LT	0.00	14	1,600	0.009	V/C:	0.637
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,614	4,800	0.337	ITS:	0.000
	LT	1.00	42	1,600	0.026 *		
Eastbound	RT	0.32	43	510	0.071	ICU:	0.737
	TH	0.00	0	0	0.000		
	LT	0.68	92	1,090	0.084 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **38 Pacific Coast Hwy & 10th/Aviation**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.515 *
	TH	3.00	709	4,800	0.148	N-S(2):	0.154
	LT	1.00	142	1,600	0.089 *	E-W(1):	0.183 *
Westbound	RT	1.00	158	1,600	0.010	E-W(2):	0.164
	TH	0.01	3	18	0.164		
	LT	1.99	522	2,864	0.182 *	V/C:	0.698
Northbound	RT	1.00	675	1,600	0.331	Lost Time:	0.100
	TH	3.00	2,045	4,800	0.426 *	ITS:	0.000
	LT	1.00	9	1,600	0.006		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.798
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.394
	TH	3.00	1,945	4,800	0.405 *	N-S(2):	0.413 *
	LT	1.00	227	1,600	0.142	E-W(1):	0.263 *
Westbound	RT	1.00	223	1,600	0.000	E-W(2):	0.236
	TH	0.03	10	42	0.236		
	LT	1.97	744	2,842	0.262 *	V/C:	0.676
Northbound	RT	1.00	529	1,600	0.200	Lost Time:	0.100
	TH	3.00	1,209	4,800	0.252	ITS:	0.000
	LT	1.00	13	1,600	0.008 *		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.776
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **39 Pacific Coast Hwy & Pier/14th St**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	63	0	0.000	N-S(1):	0.395 *
	TH	3.00	696	4,800	0.158	N-S(2):	0.223
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.086 *
Westbound	RT	1.00	6	1,600	0.004 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	V/C:	0.481
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,891	4,800	0.395 *	ITS:	0.000
	LT	2.00	187	2,880	0.065		
Eastbound	RT	1.00	172	1,600	0.043	ICU:	0.581
	TH	0.00	0	0	0.000		
	LT	2.00	237	2,880	0.082 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	150	0	0.000	N-S(1):	0.245
	TH	3.00	1,937	4,800	0.435 *	N-S(2):	0.549 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.088 *
Westbound	RT	1.00	12	1,600	0.006 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001	V/C:	0.637
Northbound	RT	0.00	6	0	0.000	Lost Time:	0.100
	TH	3.00	1,149	4,800	0.241	ITS:	0.000
	LT	2.00	327	2,880	0.114 *		
Eastbound	RT	1.00	250	1,600	0.043	ICU:	0.737
	TH	0.00	0	0	0.000		
	LT	2.00	235	2,880	0.082 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **40 Pacific Coast Hwy & 16th St**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	149	1,600	0.069	N-S(1):	0.361 *
	TH	3.00	927	4,800	0.193	N-S(2):	0.244
	LT	1.00	15	1,600	0.009 *	E-W(1):	0.082 *
Westbound	RT	0.48	25	769	0.028	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.52	27	831	0.033 *	V/C:	0.443
Northbound	RT	0.00	48	0	0.000	Lost Time:	0.100
	TH	3.00	1,640	4,800	0.352 *	ITS:	0.000
	LT	1.00	81	1,600	0.051		
Eastbound	RT	1.00	63	1,600	0.014	ICU:	0.543
	TH	0.00	0	0	0.000		
	LT	1.00	78	1,600	0.049 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	207	1,600	0.094	N-S(1):	0.261
	TH	3.00	2,011	4,800	0.419 *	N-S(2):	0.484 *
	LT	1.00	3	1,600	0.002	E-W(1):	0.083 *
Westbound	RT	0.16	3	253	0.011	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.84	16	1,347	0.012 *	V/C:	0.567
Northbound	RT	0.00	25	0	0.000	Lost Time:	0.100
	TH	3.00	1,220	4,800	0.259	ITS:	0.000
	LT	1.00	104	1,600	0.065 *		
Eastbound	RT	1.00	87	1,600	0.022	ICU:	0.667
	TH	0.00	0	0	0.000		
	LT	1.00	113	1,600	0.071 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **41 Pacific Coast Hwy & Prospect Ave**
Description: **Cumulative Plus Project without Pacific Connection**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	75	1,600	0.025	N-S(1):	0.190 *
	TH	1.00	8	1,600	0.156 *	N-S(2):	0.000
	LT	0.00	242	1,600	0.151	E-W(1):	0.249
Westbound	RT	0.00	217	0	0.000	E-W(2):	0.441 *
	TH	2.00	1,055	3,200	0.398 *		
	LT	1.00	4	1,600	0.003	V/C:	0.631
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	1.00	38	1,600	0.034 *	ITS:	0.000
	LT	0.00	8	1,600	0.005		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.731
	TH	2.00	788	3,200	0.246		
	LT	1.00	69	1,600	0.043 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	114	1,600	0.053	N-S(1):	0.215 *
	TH	1.00	19	1,600	0.184 *	N-S(2):	0.000
	LT	0.00	275	1,600	0.172	E-W(1):	0.362
Westbound	RT	0.00	209	0	0.000	E-W(2):	0.495 *
	TH	2.00	1,261	3,200	0.459 *		
	LT	1.00	13	1,600	0.008	V/C:	0.710
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	1.00	24	1,600	0.031 *	ITS:	0.000
	LT	0.00	5	1,600	0.003		
Eastbound	RT	0.00	8	0	0.000	ICU:	0.810
	TH	2.00	1,126	3,200	0.354		
	LT	1.00	57	1,600	0.036 *	LOS:	D

* - Denotes critical movement

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	6	12	5	0	28	8	27	0	52	520	78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	13	5	0	30	9	29	0	57	565	85
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.3	9.6	12.7
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	17%	0%	26%	44%	43%	0%
Vol Thru, %	83%	77%	52%	13%	57%	98%
Vol Right, %	0%	23%	22%	43%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	312	338	23	63	170	99
LT Vol	260	260	12	8	97	97
Through Vol	0	78	5	27	0	2
RT Vol	52	0	6	28	73	0
Lane Flow Rate	339	367	25	68	185	108
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.487	0.503	0.041	0.11	0.293	0.164
Departure Headway (Hd)	5.171	4.925	5.96	5.769	5.708	5.477
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	695	727	595	616	626	650
Service Time	2.926	2.68	4.056	3.851	3.48	3.249
HCM Lane V/C Ratio	0.488	0.505	0.042	0.11	0.296	0.166
HCM Control Delay	12.8	12.6	9.3	9.6	10.9	9.3
HCM Lane LOS	B	B	A	A	B	A
HCM 95th-tile Q	2.7	2.9	0.1	0.4	1.2	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	73	194	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	79	211	2
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.3
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	22	106	21	0	12	35	12	0	12	49	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	24	115	23	0	13	38	13	0	13	53	68
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.7	8	8.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	15%	20%	38%
Vol Thru, %	40%	71%	59%	47%
Vol Right, %	51%	14%	20%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	149	59	98
LT Vol	49	106	35	46
Through Vol	63	21	12	15
RT Vol	12	22	12	37
Lane Flow Rate	135	162	64	107
Geometry Grp	1	1	1	1
Degree of Util (X)	0.161	0.202	0.082	0.136
Departure Headway (Hd)	4.3	4.5	4.588	4.593
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	834	798	780	781
Service Time	2.324	2.526	2.618	2.62
HCM Lane V/C Ratio	0.162	0.203	0.082	0.137
HCM Control Delay	8.2	8.7	8	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.8	0.3	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	37	46	15
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	40	50	16
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.3
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	84	124	63	0	15	49	26	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	91	135	68	0	16	53	28	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	10.1	8.4
HCM LOS	B	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	17%	9%
Vol Thru, %	46%	54%	78%
Vol Right, %	23%	29%	13%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	271	90	195
LT Vol	124	49	153
Through Vol	63	26	25
RT Vol	84	15	17
Lane Flow Rate	295	98	212
Geometry Grp	1	1	1
Degree of Util (X)	0.368	0.126	0.281
Departure Headway (Hd)	4.496	4.653	4.767
Convergence, Y/N	Yes	Yes	Yes
Cap	798	768	752
Service Time	2.53	2.698	2.807
HCM Lane V/C Ratio	0.37	0.128	0.282
HCM Control Delay	10.1	8.4	9.7
HCM Lane LOS	B	A	A
HCM 95th-tile Q	1.7	0.4	1.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	17	153	25
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	18	166	27
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.7
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	22	189	435	55	69	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	205	473	60	75	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	533	0	-	0	756	503
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	253	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1035	-	-	-	376	569
Stage 1	-	-	-	-	607	-
Stage 2	-	-	-	-	789	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1035	-	-	-	367	569
Mov Cap-2 Maneuver	-	-	-	-	367	-
Stage 1	-	-	-	-	607	-
Stage 2	-	-	-	-	771	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	17
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1035	-	-	-	392
HCM Lane V/C Ratio	0.023	-	-	-	0.233
HCM Control Delay (s)	8.6	-	-	-	17
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9

Intersection	
Intersection Delay, s/veh	20
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	220	46	0	48	289	0	0	179	0	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	239	50	0	52	314	0	0	195	0	65
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	18.4	23.9	23
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	75%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	25%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	239	220	46	48	289	140	105	22
LT Vol	0	220	0	0	289	0	105	0
Through Vol	60	0	46	0	0	0	0	22
RT Vol	179	0	0	48	0	140	0	0
Lane Flow Rate	260	239	50	52	314	152	114	24
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.6	0.535	0.102	0.121	0.681	0.346	0.243	0.046
Departure Headway (Hd)	8.319	8.06	7.34	8.317	7.804	8.188	7.674	6.955
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	431	445	485	429	462	437	466	511
Service Time	6.114	5.856	5.135	6.104	5.591	5.982	5.468	4.747
HCM Lane V/C Ratio	0.603	0.537	0.103	0.121	0.68	0.348	0.245	0.047
HCM Control Delay	23	19.9	11	12.3	25.8	15.3	12.9	10.1
HCM Lane LOS	C	C	B	B	D	C	B	B
HCM 95th-tile Q	3.8	3.1	0.3	0.4	5	1.5	0.9	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	140	105	22
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	152	114	24
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.9
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	2	0	1	5	3	36	23	772	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	1	5	3	39	25	839	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	955	1376	230	1145	1390	421	460	0	0
Stage 1	484	484	-	891	891	-	-	-	-
Stage 2	471	892	-	254	499	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	213	144	772	154	141	581	1097	-	-
Stage 1	533	550	-	304	359	-	-	-	-
Stage 2	542	358	-	728	542	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	188	137	772	148	134	581	1097	-	-
Mov Cap-2 Maneuver	188	137	-	148	134	-	-	-	-
Stage 1	521	536	-	297	351	-	-	-	-
Stage 2	489	350	-	709	528	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	19.5	16.1	0.2
HCM LOS	C	C	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1097	-	-	251	372	789	-	-
HCM Lane V/C Ratio	0.023	-	-	0.013	0.129	0.025	-	-
HCM Control Delay (s)	8.4	-	-	19.5	16.1	9.7	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0.4	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	18	396	27
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	20	430	29

Major/Minor	Major2		
Conflicting Flow All	842	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	789	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	789	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	0	1	1	1	110	1	673	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	1	1	1	120	1	732	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	818	1185	192	992	1184	366	385	0	0
Stage 1	450	450	-	734	734	-	-	-	-
Stage 2	368	735	-	258	450	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	268	188	817	200	188	631	1170	-	-
Stage 1	558	570	-	378	424	-	-	-	-
Stage 2	624	424	-	724	570	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	210	181	817	194	181	631	1170	-	-
Mov Cap-2 Maneuver	210	181	-	194	181	-	-	-	-
Stage 1	557	548	-	378	424	-	-	-	-
Stage 2	504	424	-	696	548	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	21.2	12.4	0
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1170	-	-	231	605	868	-	-
HCM Lane V/C Ratio	0.001	-	-	0.038	0.201	0.038	-	-
HCM Control Delay (s)	8.1	0	-	21.2	12.4	9.3	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0.1	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	30	354	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	33	385	0

Major/Minor	Major2		
Conflicting Flow All	733	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	868	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	868	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.7
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	90	6	15	123	11	22	104	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	98	7	16	134	12	24	113	51

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	146	0	0	104	0	0	292	281	101
Stage 1	-	-	-	-	-	-	103	103	-
Stage 2	-	-	-	-	-	-	189	178	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1436	-	-	1488	-	-	660	627	954
Stage 1	-	-	-	-	-	-	903	810	-
Stage 2	-	-	-	-	-	-	813	752	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1436	-	-	1488	-	-	627	620	954
Mov Cap-2 Maneuver	-	-	-	-	-	-	627	620	-
Stage 1	-	-	-	-	-	-	902	809	-
Stage 2	-	-	-	-	-	-	769	744	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.7	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	686	1436	-	-	1488	-	-	623
HCM Lane V/C Ratio	0.274	0.001	-	-	0.011	-	-	0.058
HCM Control Delay (s)	12.2	7.5	-	-	7.4	-	-	11.1
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	2	29	2
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	2	32	2

Major/Minor	Minor2		
Conflicting Flow All	357	279	140
Stage 1	172	172	-
Stage 2	185	107	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	598	629	908
Stage 1	830	756	-
Stage 2	817	807	-
Platoon blocked, %			
Mov Cap-1 Maneuver	483	622	908
Mov Cap-2 Maneuver	483	622	-
Stage 1	829	748	-
Stage 2	665	806	-

Approach	SB
HCM Control Delay, s	11.1
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	131	18	53	145	17	9	13	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	142	20	58	158	18	10	14	59

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	176	0	0	162	0	0	459	458	152
Stage 1	-	-	-	-	-	-	167	167	-
Stage 2	-	-	-	-	-	-	292	291	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1400	-	-	1417	-	-	512	499	894
Stage 1	-	-	-	-	-	-	835	760	-
Stage 2	-	-	-	-	-	-	716	672	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1400	-	-	1417	-	-	479	476	894
Mov Cap-2 Maneuver	-	-	-	-	-	-	479	476	-
Stage 1	-	-	-	-	-	-	830	756	-
Stage 2	-	-	-	-	-	-	667	644	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	1.9	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	714	1400	-	-	1417	-	-	504
HCM Lane V/C Ratio	0.116	0.005	-	-	0.041	-	-	0.065
HCM Control Delay (s)	10.7	7.6	-	-	7.6	-	-	12.6
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	11	13	6
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	12	14	7

Major/Minor	Minor2		
Conflicting Flow All	486	459	167
Stage 1	282	282	-
Stage 2	204	177	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	492	499	877
Stage 1	725	678	-
Stage 2	798	753	-
Platoon blocked, %			
Mov Cap-1 Maneuver	433	476	877
Mov Cap-2 Maneuver	433	476	-
Stage 1	721	650	-
Stage 2	727	749	-

Approach	SB
HCM Control Delay, s	12.6
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	60	1	2	0	0	4	1	0	3	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	65	1	2	0	0	4	1	0	3	2	0
Number of Lanes	0	1	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	8.3	7.9	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	60%	100%	91%	0%	60%	0%
Vol Thru, %	40%	0%	3%	80%	40%	0%
Vol Right, %	0%	0%	6%	20%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	31	32	5	5	130
LT Vol	2	0	1	4	2	0
Through Vol	0	0	2	1	0	130
RT Vol	3	31	29	0	3	0
Lane Flow Rate	5	34	35	5	5	141
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.008	0.05	0.05	0.007	0.007	0.156
Departure Headway (Hd)	5	5.301	5.21	4.834	4.964	3.963
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	720	671	683	745	714	893
Service Time	3	3.07	2.978	2.834	2.744	1.742
HCM Lane V/C Ratio	0.007	0.051	0.051	0.007	0.007	0.158
HCM Control Delay	8	8.4	8.3	7.9	7.8	7.5
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0	0.2	0.2	0	0	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	2	130
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	2	141
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	7.5
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	14	16	48	0	4	14	25	0	30	270	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	17	52	0	4	15	27	0	33	293	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.6	8.3	9.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	18%	0%	18%	9%	4%	0%
Vol Thru, %	82%	97%	21%	33%	96%	94%
Vol Right, %	0%	3%	62%	58%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	165	139	78	43	94	96
LT Vol	135	135	16	14	90	90
Through Vol	0	4	48	25	0	6
RT Vol	30	0	14	4	4	0
Lane Flow Rate	179	151	85	47	102	104
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.256	0.211	0.115	0.064	0.147	0.149
Departure Headway (Hd)	5.138	5.026	4.876	4.936	5.19	5.124
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	698	713	733	722	690	698
Service Time	2.879	2.767	2.922	2.989	2.934	2.868
HCM Lane V/C Ratio	0.256	0.212	0.116	0.065	0.148	0.149
HCM Control Delay	9.7	9.1	8.6	8.3	8.8	8.8
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	1	0.8	0.4	0.2	0.5	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	4	180	6
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	196	7
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.8
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	78	22	0	130	87	0	25	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	85	24	0	141	95	0	27	109
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.2	9.5	8.7
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	60%	0%	0%	0%	100%
Vol Right, %	40%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	217	78	22	25	100
LT Vol	130	0	0	0	100
Through Vol	87	0	22	0	0
RT Vol	0	78	0	25	0
Lane Flow Rate	236	85	24	27	109
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.299	0.139	0.031	0.042	0.152
Departure Headway (Hd)	4.567	5.912	4.705	5.539	5.037
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	788	606	760	648	713
Service Time	2.587	3.647	2.44	3.262	2.759
HCM Lane V/C Ratio	0.299	0.14	0.032	0.042	0.153
HCM Control Delay	9.5	9.6	7.6	8.5	8.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	1.3	0.5	0.1	0.1	0.5

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	45	72	9	0	34	82	30	0	11	415	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	49	78	10	0	37	89	33	0	12	451	57
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	10.8	11.1	12.7
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	5%	0%	100%	0%	100%	0%	23%	0%
Vol Thru, %	95%	80%	0%	89%	0%	73%	77%	75%
Vol Right, %	0%	20%	0%	11%	0%	27%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	219	260	45	81	34	112	109	112
LT Vol	208	208	0	72	0	82	84	84
Through Vol	0	52	0	9	0	30	0	28
RT Vol	11	0	45	0	34	0	25	0
Lane Flow Rate	238	282	49	88	37	122	118	121
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.388	0.448	0.099	0.164	0.075	0.222	0.208	0.203
Departure Headway (Hd)	5.883	5.716	7.305	6.717	7.264	6.564	6.336	6.041
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	610	629	490	533	492	545	565	593
Service Time	3.626	3.459	5.064	4.475	5.021	4.321	4.088	3.793
HCM Lane V/C Ratio	0.39	0.448	0.1	0.165	0.075	0.224	0.209	0.204
HCM Control Delay	12.3	13	10.9	10.8	10.6	11.2	10.8	10.3
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.8	2.3	0.3	0.6	0.2	0.8	0.8	0.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	25	167	28
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	182	30
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.5
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	137	0	0
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	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	149	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	149	0	0	0	-	0
Stage 1	0	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	843	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	843	-	-	-	-	-
Mov Cap-2 Maneuver	843	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	879	-	-	-	-	-

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

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

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	7	8	6	0	41	10	36	0	27	351	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	9	7	0	45	11	39	0	29	382	38
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.4	10	10.9
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	13%	0%	33%	47%	10%	0%
Vol Thru, %	87%	83%	38%	11%	90%	97%
Vol Right, %	0%	17%	29%	41%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	203	211	21	87	261	241
LT Vol	176	176	8	10	234	234
Through Vol	0	35	6	36	0	7
RT Vol	27	0	7	41	27	0
Lane Flow Rate	220	229	23	95	283	261
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.336	0.337	0.039	0.156	0.422	0.385
Departure Headway (Hd)	5.488	5.303	6.174	5.925	5.369	5.297
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	649	670	583	609	663	672
Service Time	3.281	3.096	4.179	3.927	3.16	3.087
HCM Lane V/C Ratio	0.339	0.342	0.039	0.156	0.427	0.388
HCM Control Delay	11.1	10.8	9.4	10	12.1	11.4
HCM Lane LOS	B	B	A	A	B	B
HCM 95th-tile Q	1.5	1.5	0.1	0.5	2.1	1.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	27	467	7
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	29	508	8
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	11.8
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	6	83	2	0	30	86	45	0	11	147	99
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	90	2	0	33	93	49	0	12	160	108
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.2	9.7	10.3
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	7%	19%	39%
Vol Thru, %	57%	91%	53%	55%
Vol Right, %	39%	2%	28%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	257	91	161	153
LT Vol	147	83	86	84
Through Vol	99	2	45	10
RT Vol	11	6	30	59
Lane Flow Rate	279	99	175	166
Geometry Grp	1	1	1	1
Degree of Util (X)	0.358	0.144	0.242	0.231
Departure Headway (Hd)	4.613	5.223	4.984	4.997
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	774	679	712	712
Service Time	2.681	3.315	3.068	3.076
HCM Lane V/C Ratio	0.36	0.146	0.246	0.233
HCM Control Delay	10.3	9.2	9.7	9.6
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.6	0.5	0.9	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	59	84	10
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	64	91	11
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.6
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	29.8
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	72	102	55	0	37	124	93	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	78	111	60	0	40	135	101	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	13.8	14.2
HCM LOS	B	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	15%	8%
Vol Thru, %	45%	49%	82%
Vol Right, %	24%	37%	10%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	229	254	567
LT Vol	102	124	465
Through Vol	55	93	55
RT Vol	72	37	47
Lane Flow Rate	249	276	616
Geometry Grp	1	1	1
Degree of Util (X)	0.426	0.461	0.93
Departure Headway (Hd)	6.166	6.013	5.432
Convergence, Y/N	Yes	Yes	Yes
Cap	580	594	666
Service Time	4.253	4.098	3.49
HCM Lane V/C Ratio	0.429	0.465	0.925
HCM Control Delay	13.8	14.2	43.2
HCM Lane LOS	B	B	E
HCM 95th-tile Q	2.1	2.4	12.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	47	465	55
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	51	505	60
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	43.2
HCM LOS	E

Lane

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	21	301	447	289	80	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	327	486	314	87	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	800	0	-	0	1016	643
Stage 1	-	-	-	-	643	-
Stage 2	-	-	-	-	373	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	823	-	-	-	264	473
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	696	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	823	-	-	-	257	473
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	677	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	25.5
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	823	-	-	-	275
HCM Lane V/C Ratio	0.028	-	-	-	0.368
HCM Control Delay (s)	9.5	-	-	-	25.5
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	1.6

Intersection	
Intersection Delay, s/veh	63
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	308	70	0	35	476	0	0	236	0	44
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	335	76	0	38	517	0	0	257	0	48
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	62.8	78.2	65.1
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	84%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	16%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	280	308	70	35	476	141	330	45
LT Vol	0	308	0	0	476	0	330	0
Through Vol	44	0	70	0	0	0	0	45
RT Vol	236	0	0	35	0	141	0	0
Lane Flow Rate	304	335	76	38	517	153	359	49
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.92	0.968	0.205	0.118	1	0.422	0.937	0.118
Departure Headway (Hd)	10.879	10.414	9.711	11.189	10.661	10.033	9.533	8.832
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	335	352	371	321	347	362	384	408
Service Time	8.6	8.135	7.432	8.931	8.403	7.733	7.233	6.532
HCM Lane V/C Ratio	0.907	0.952	0.205	0.118	1.49	0.423	0.935	0.12
HCM Control Delay	65.1	73.7	14.9	15.4	82.8	19.9	63	12.7
HCM Lane LOS	F	F	B	C	F	C	F	B
HCM 95th-tile Q	9.2	10.5	0.8	0.4	11.2	2	10.1	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	141	330	45
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	153	359	49
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	46.8
HCM LOS	E

Lane

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	10	0	2	0	3	61	19	494	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	2	0	3	66	21	537	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1519	1787	553	1234	1800	269	1105	0	0
Stage 1	1208	1208	-	579	579	-	-	-	-
Stage 2	311	579	-	655	1221	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	82	80	477	133	79	729	628	-	-
Stage 1	194	254	-	468	499	-	-	-	-
Stage 2	674	499	-	421	251	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	67	73	477	123	72	729	628	-	-
Mov Cap-2 Maneuver	67	73	-	123	72	-	-	-	-
Stage 1	188	240	-	452	482	-	-	-	-
Stage 2	588	482	-	395	237	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	60.2	13.2	0.4
HCM LOS	F	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	628	-	-	78	511	1026	-	-
HCM Lane V/C Ratio	0.033	-	-	0.167	0.136	0.056	-	-
HCM Control Delay (s)	10.9	-	-	60.2	13.2	8.7	-	-
HCM Lane LOS	B	-	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.5	0.2	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	53	994	23
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	58	1080	25

Major/Minor	Major2		
Conflicting Flow All	538	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1026	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1026	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	6	0	3	0	0	43	1	472	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	3	0	0	47	1	513	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1363	1622	508	1114	1621	258	1015	0	0
Stage 1	1104	1104	-	517	517	-	-	-	-
Stage 2	259	518	-	597	1104	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	107	102	510	163	102	741	679	-	-
Stage 1	225	285	-	509	532	-	-	-	-
Stage 2	723	531	-	456	285	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	97	97	510	156	97	741	679	-	-
Mov Cap-2 Maneuver	97	97	-	156	97	-	-	-	-
Stage 1	225	273	-	508	531	-	-	-	-
Stage 2	676	530	-	434	273	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	34.2	10.2	0
HCM LOS	D	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	679	-	-	133	741	1046	-	-
HCM Lane V/C Ratio	0.002	-	-	0.074	0.063	0.043	-	-
HCM Control Delay (s)	10.3	0	-	34.2	10.2	8.6	-	-
HCM Lane LOS	B	A	-	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	41	934	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	45	1015	0

Major/Minor	Major2		
Conflicting Flow All	516	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1046	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1046	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	5	227	13	38	249	7	23	5	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	247	14	41	271	8	25	5	60

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	278	0	0	261	0	0	628	626	254
Stage 1	-	-	-	-	-	-	265	265	-
Stage 2	-	-	-	-	-	-	363	361	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1285	-	-	1303	-	-	395	401	785
Stage 1	-	-	-	-	-	-	740	689	-
Stage 2	-	-	-	-	-	-	656	626	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1285	-	-	1303	-	-	377	387	785
Mov Cap-2 Maneuver	-	-	-	-	-	-	377	387	-
Stage 1	-	-	-	-	-	-	737	686	-
Stage 2	-	-	-	-	-	-	625	606	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	1	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	576	1285	-	-	1303	-	-	456
HCM Lane V/C Ratio	0.157	0.004	-	-	0.032	-	-	0.041
HCM Control Delay (s)	12.4	7.8	-	-	7.9	-	-	13.2
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	6	4	7
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	7	4	8

Major/Minor	Minor2		
Conflicting Flow All	654	629	274
Stage 1	357	357	-
Stage 2	297	272	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	380	399	765
Stage 1	661	628	-
Stage 2	712	685	-
Platoon blocked, %			
Mov Cap-1 Maneuver	338	385	765
Mov Cap-2 Maneuver	338	385	-
Stage 1	658	608	-
Stage 2	650	682	-

Approach	SB
HCM Control Delay, s	13.2
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	13	245	31	70	263	21	29	29	126
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	266	34	76	286	23	32	32	137

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	309	0	0	300	0	0	785	772	283
Stage 1	-	-	-	-	-	-	311	311	-
Stage 2	-	-	-	-	-	-	474	461	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1252	-	-	1261	-	-	310	330	756
Stage 1	-	-	-	-	-	-	699	658	-
Stage 2	-	-	-	-	-	-	571	565	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1252	-	-	1261	-	-	261	307	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	261	307	-
Stage 1	-	-	-	-	-	-	691	651	-
Stage 2	-	-	-	-	-	-	491	531	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	1.6	17.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	494	1252	-	-	1261	-	-	299
HCM Lane V/C Ratio	0.405	0.011	-	-	0.06	-	-	0.222
HCM Control Delay (s)	17.2	7.9	-	-	8	-	-	20.4
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.9	0	-	-	0.2	-	-	0.8

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	15	35	11
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	16	38	12

Major/Minor	Minor2		
Conflicting Flow All	845	777	297
Stage 1	449	449	-
Stage 2	396	328	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	283	328	742
Stage 1	589	572	-
Stage 2	629	647	-
Platoon blocked, %			
Mov Cap-1 Maneuver	202	305	742
Mov Cap-2 Maneuver	202	305	-
Stage 1	582	538	-
Stage 2	485	640	-

Approach	SB
HCM Control Delay, s	20.4
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	177	2	21	0	0	6	3	0	12	22	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	192	2	23	0	0	7	3	0	13	24	0
Number of Lanes	0	1	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	9.3	8.3	8.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	35%	100%	77%	0%	39%	0%
Vol Thru, %	65%	0%	2%	67%	61%	0%
Vol Right, %	0%	0%	21%	33%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	101	99	9	28	148
LT Vol	22	0	2	6	17	0
Through Vol	0	0	21	3	0	148
RT Vol	12	101	76	0	11	0
Lane Flow Rate	37	110	108	10	30	161
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.056	0.17	0.159	0.014	0.046	0.2
Departure Headway (Hd)	5.422	5.582	5.316	5.151	5.386	4.486
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	661	643	674	694	667	801
Service Time	3.452	3.314	3.048	3.191	3.106	2.206
HCM Lane V/C Ratio	0.056	0.171	0.16	0.014	0.045	0.201
HCM Control Delay	8.8	9.5	9.1	8.3	8.4	8.3
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.6	0.6	0	0.1	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	11	17	148
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	12	18	161
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	8.3
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	11	34	63	0	5	26	12	0	18	254	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	37	68	0	5	28	13	0	20	276	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.9	8.6	9.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	12%	0%	10%	12%	3%	0%
Vol Thru, %	88%	98%	31%	60%	97%	93%
Vol Right, %	0%	2%	58%	28%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	145	129	108	43	106	111
LT Vol	127	127	34	26	103	103
Through Vol	0	2	63	12	0	8
RT Vol	18	0	11	5	3	0
Lane Flow Rate	158	140	117	47	115	121
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.229	0.201	0.159	0.067	0.168	0.174
Departure Headway (Hd)	5.232	5.158	4.89	5.184	5.248	5.183
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	684	693	730	687	681	689
Service Time	2.984	2.911	2.945	3.249	3.002	2.937
HCM Lane V/C Ratio	0.231	0.202	0.16	0.068	0.169	0.176
HCM Control Delay	9.5	9.2	8.9	8.6	9.1	9
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.9	0.7	0.6	0.2	0.6	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	206	8
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	224	9
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	86	48	0	167	77	0	34	242
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	93	52	0	182	84	0	37	263
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.7	10.8	10.8
HCM LOS	A	B	B

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	68%	0%	0%	0%	100%
Vol Right, %	32%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	244	86	48	34	242
LT Vol	167	0	0	0	242
Through Vol	77	0	48	0	0
RT Vol	0	86	0	34	0
Lane Flow Rate	265	93	52	37	263
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.363	0.166	0.075	0.059	0.38
Departure Headway (Hd)	4.928	6.39	5.179	5.699	5.196
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	727	558	686	627	689
Service Time	2.98	4.166	2.953	3.45	2.947
HCM Lane V/C Ratio	0.365	0.167	0.076	0.059	0.382
HCM Control Delay	10.8	10.4	8.4	8.8	11.1
HCM Lane LOS	B	B	A	A	B
HCM 95th-tile Q	1.7	0.6	0.2	0.2	1.8

Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	31	65	14	0	70	82	31	0	23	345	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	34	71	15	0	76	89	34	0	25	375	80
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.6	12.1	13.7
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	12%	0%	100%	0%	100%	0%	18%	0%
Vol Thru, %	88%	70%	0%	82%	0%	73%	82%	86%
Vol Right, %	0%	30%	0%	18%	0%	27%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	196	247	31	79	70	113	226	214
LT Vol	173	173	0	65	0	82	185	185
Through Vol	0	74	0	14	0	31	0	29
RT Vol	23	0	31	0	70	0	41	0
Lane Flow Rate	212	268	34	86	76	123	245	232
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.38	0.458	0.075	0.175	0.164	0.241	0.44	0.404
Departure Headway (Hd)	6.432	6.159	7.964	7.324	7.769	7.061	6.459	6.27
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	557	581	447	486	460	505	554	571
Service Time	4.211	3.937	5.763	5.122	5.559	4.851	4.238	4.049
HCM Lane V/C Ratio	0.381	0.461	0.076	0.177	0.165	0.244	0.442	0.406
HCM Control Delay	13.1	14.1	11.4	11.7	12.1	12.1	14.3	13.3
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.8	2.4	0.2	0.6	0.6	0.9	2.2	1.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	41	369	29
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	45	401	32
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.8
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	166	0	0
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	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	180	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	180	0	0	0	-	0
Stage 1	0	-	-	-	-	-
Stage 2	180	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	810	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	851	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	810	-	-	-	-	-
Mov Cap-2 Maneuver	810	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	851	-	-	-	-	-

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

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

EXISTING PLUS PROJECT ALTERNATIVE 7 (REDUCED DENSITY)

Project Title: **Redondo Beach Waterfront**
Intersection: **4 Harbor Dr/Hermosa Ave & Herondo St**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.296 *
	TH	1.00	137	1,600	0.086	N-S(2):	0.086
	LT	1.00	117	1,600	0.073 *	E-W(1):	0.069
Westbound	RT	1.00	276	1,600	0.136 *	E-W(2):	0.137 *
	TH	0.00	0	0	0.000		
	LT	1.00	110	1,600	0.069	V/C:	0.433
Northbound	RT	0.00	76	0	0.000	Lost Time:	0.100
	TH	1.00	281	1,600	0.223 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.533
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.315 *
	TH	1.00	373	1,600	0.233	N-S(2):	0.234
	LT	1.00	159	1,600	0.099 *	E-W(1):	0.137 *
Westbound	RT	1.00	163	1,600	0.052	E-W(2):	0.052
	TH	0.00	0	0	0.000		
	LT	1.00	219	1,600	0.137 *	V/C:	0.452
Northbound	RT	0.00	139	0	0.000	Lost Time:	0.100
	TH	1.00	206	1,600	0.216 *	ITS:	0.000
	LT	0.00	1	1,600	0.001		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.552
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **7 Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	166	1,600	0.104	N-S(1):	0.559 *
	TH	2.00	908	3,200	0.284	N-S(2):	0.298
	LT	1.00	153	1,600	0.096 *	E-W(1):	0.244 *
Westbound	RT	1.00	401	1,600	0.155	E-W(2):	0.231
	TH	1.00	188	1,600	0.118		
	LT	2.00	256	2,880	0.089 *	V/C:	0.803
Northbound	RT	1.00	120	1,600	0.031	Lost Time:	0.100
	TH	3.00	2,221	4,800	0.463 *	ITS:	0.000
	LT	1.00	23	1,600	0.014		
Eastbound	RT	1.00	56	1,600	0.028	ICU:	0.903
	TH	1.00	248	1,600	0.155 *		
	LT	1.00	121	1,600	0.076	LOS:	E

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	523	1,600	0.327	N-S(1):	0.428
	TH	2.00	1,867	3,200	0.583 *	N-S(2):	0.632 *
	LT	1.00	214	1,600	0.134	E-W(1):	0.281 *
Westbound	RT	1.00	266	1,600	0.033	E-W(2):	0.242
	TH	1.00	300	1,600	0.188		
	LT	2.00	318	2,880	0.110 *	V/C:	0.913
Northbound	RT	1.00	229	1,600	0.088	Lost Time:	0.100
	TH	3.00	1,409	4,800	0.294	ITS:	0.000
	LT	1.00	78	1,600	0.049 *		
Eastbound	RT	1.00	96	1,600	0.060	ICU:	1.013
	TH	1.00	274	1,600	0.171 *		
	LT	1.00	87	1,600	0.054	LOS:	F

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **8 Prospect Ave & Anita St**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	32	0	0.000	N-S(1):	0.308 *
	TH	2.00	324	3,200	0.111	N-S(2):	0.251
	LT	1.00	62	1,600	0.039 *	E-W(1):	0.260
Westbound	RT	0.00	83	0	0.000	E-W(2):	0.275 *
	TH	2.00	751	3,200	0.261 *		
	LT	1.00	144	1,600	0.090	V/C:	0.583
Northbound	RT	1.00	157	1,600	0.053	Lost Time:	0.100
	TH	1.00	430	1,600	0.269 *	ITS:	0.000
	LT	1.00	224	1,600	0.140		
Eastbound	RT	0.00	59	0	0.000	ICU:	0.683
	TH	2.00	486	3,200	0.170		
	LT	1.00	22	1,600	0.014 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	62	0	0.000	N-S(1):	0.240
	TH	2.00	558	3,200	0.194 *	N-S(2):	0.280 *
	LT	1.00	89	1,600	0.056	E-W(1):	0.293 *
Westbound	RT	0.00	80	0	0.000	E-W(2):	0.273
	TH	2.00	723	3,200	0.251		
	LT	1.00	107	1,600	0.067 *	V/C:	0.573
Northbound	RT	1.00	76	1,600	0.014	Lost Time:	0.100
	TH	1.00	295	1,600	0.184	ITS:	0.000
	LT	1.00	138	1,600	0.086 *		
Eastbound	RT	0.00	105	0	0.000	ICU:	0.673
	TH	2.00	618	3,200	0.226 *		
	LT	1.00	35	1,600	0.022	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **9 Harbor Dr & Yacht Club Way**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.233 *
	TH	1.00	182	1,600	0.127	N-S(2):	0.138
	LT	1.00	6	1,600	0.004 *	E-W(1):	0.033 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.024
	TH	1.00	1	1,600	0.002		
	LT	0.00	2	1,600	0.001 *	V/C:	0.266
Northbound	RT	0.00	1	0	0.000	Lost Time:	0.100
	TH	1.00	366	1,600	0.229 *	ITS:	0.000
	LT	1.00	17	1,600	0.011		
Eastbound	RT	0.00	15	0	0.000	ICU:	0.366
	TH	1.00	1	1,600	0.032 *		
	LT	0.00	35	1,600	0.022	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	50	0	0.000	N-S(1):	0.182
	TH	1.00	535	1,600	0.366 *	N-S(2):	0.380 *
	LT	1.00	11	1,600	0.007	E-W(1):	0.033
Westbound	RT	0.00	41	0	0.000	E-W(2):	0.047 *
	TH	1.00	0	1,600	0.028 *		
	LT	0.00	3	1,600	0.002	V/C:	0.427
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	1.00	278	1,600	0.175	ITS:	0.000
	LT	1.00	23	1,600	0.014 *		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.527
	TH	1.00	0	1,600	0.031		
	LT	0.00	31	1,600	0.019 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **10 Pacific Coast Hwy & Catalina Ave**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000	N-S(1):	0.564 *
	TH	2.00	1,073	3,200	0.336	N-S(2):	0.340
	LT	0.00	0	0	0.000 *	E-W(1):	0.174
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.196 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.760
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,804	3,200	0.564 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.01	4	23	0.174	ICU:	0.860
	TH	0.00	0	0	0.000		
	LT	1.99	560	2,860	0.196 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	2	0	0.000	N-S(1):	0.420
	TH	2.00	2,067	3,200	0.647 *	N-S(2):	0.656 *
	LT	0.00	0	0	0.000	E-W(1):	0.120
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.138 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.794
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,343	3,200	0.420	ITS:	0.000
	LT	1.00	15	1,600	0.009 *		
Eastbound	RT	0.11	22	177	0.120	ICU:	0.894
	TH	0.00	0	0	0.000		
	LT	1.89	376	2,721	0.138 *	LOS:	D

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **11 Harbor Dr & Marina Way**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	76	1,600	0.048	N-S(1):	0.168 *
	TH	1.00	172	1,600	0.108	N-S(2):	0.144
	LT	0.00	0	0	0.000 *	E-W(1):	0.008
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.027 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.195
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	269	1,600	0.168 *	ITS:	0.000
	LT	1.00	57	1,600	0.036		
Eastbound	RT	1.00	42	1,600	0.008	ICU:	0.295
	TH	0.00	0	0	0.000		
	LT	1.00	43	1,600	0.027 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	72	1,600	0.045	N-S(1):	0.191
	TH	1.00	509	1,600	0.318 *	N-S(2):	0.372 *
	LT	0.00	0	0	0.000	E-W(1):	0.017
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.036 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.408
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	305	1,600	0.191	ITS:	0.000
	LT	1.00	87	1,600	0.054 *		
Eastbound	RT	1.00	71	1,600	0.017	ICU:	0.508
	TH	0.00	0	0	0.000		
	LT	1.00	58	1,600	0.036 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **12 Catalina Ave & Gertruda Ave**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	53	0	0.000	N-S(1):	0.165
	TH	2.00	240	3,200	0.092 *	N-S(2):	0.248 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.018
Westbound	RT	0.00	15	0	0.000	E-W(2):	0.028 *
	TH	1.00	3	1,600	0.020 *		
	LT	0.00	14	1,600	0.009	V/C:	0.276
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	496	3,200	0.161	ITS:	0.000
	LT	1.00	249	1,600	0.156 *		
Eastbound	RT	1.00	121	1,600	0.000	ICU:	0.376
	TH	1.00	2	1,600	0.009		
	LT	0.00	13	1,600	0.008 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	69	0	0.000	N-S(1):	0.111
	TH	2.00	663	3,200	0.229 *	N-S(2):	0.325 *
	LT	1.00	5	1,600	0.003	E-W(1):	0.142 *
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.044
	TH	1.00	4	1,600	0.013		
	LT	0.00	6	1,600	0.004 *	V/C:	0.467
Northbound	RT	0.00	7	0	0.000	Lost Time:	0.100
	TH	2.00	340	3,200	0.108	ITS:	0.000
	LT	1.00	153	1,600	0.096 *		
Eastbound	RT	1.00	297	1,600	0.138 *	ICU:	0.567
	TH	1.00	2	1,600	0.033		
	LT	0.00	50	1,600	0.031	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **15 Harbor Dr & Portofino Way/Beryl St**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	NBR, WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	25	1,600	0.008	N-S(1):	0.150 *
	TH	1.00	159	1,600	0.099	N-S(2):	0.103
	LT	1.00	35	1,600	0.022 *	E-W(1):	0.092 *
Westbound	RT	1.00	138	1,600	0.064	E-W(2):	0.080
	TH	1.00	86	1,600	0.054		
	LT	1.00	70	1,600	0.044 *	V/C:	0.242
Northbound	RT	0.00	49	0	0.000	Lost Time:	0.100
	TH	1.00	156	1,600	0.128 *	ITS:	0.000
	LT	1.00	7	1,600	0.004		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.342
	TH	1.00	71	1,600	0.048 *		
	LT	1.00	26	1,600	0.016	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	82	1,600	0.034	N-S(1):	0.282 *
	TH	1.00	414	1,600	0.259	N-S(2):	0.266
	LT	1.00	82	1,600	0.051 *	E-W(1):	0.227 *
Westbound	RT	1.00	145	1,600	0.039	E-W(2):	0.160
	TH	1.00	201	1,600	0.126		
	LT	1.00	182	1,600	0.114 *	V/C:	0.509
Northbound	RT	0.00	125	0	0.000	Lost Time:	0.100
	TH	1.00	244	1,600	0.231 *	ITS:	0.000
	LT	1.00	11	1,600	0.007		
Eastbound	RT	0.00	24	0	0.000	ICU:	0.609
	TH	1.00	156	1,600	0.113 *		
	LT	1.00	55	1,600	0.034	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **16 Catalina Ave & Beryl St**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	72	0	0.000	N-S(1):	0.196 *
	TH	2.00	226	3,200	0.093	N-S(2):	0.154
	LT	0.00	0	0	0.000 *	E-W(1):	0.049
Westbound	RT	1.00	7	1,600	0.004	E-W(2):	0.090 *
	TH	1.00	107	1,600	0.067 *		
	LT	1.00	26	1,600	0.016	V/C:	0.286
Northbound	RT	0.00	42	0	0.000	Lost Time:	0.100
	TH	2.00	584	3,200	0.196 *	ITS:	0.000
	LT	2.00	175	2,880	0.061		
Eastbound	RT	1.00	30	1,600	0.000	ICU:	0.386
	TH	1.00	53	1,600	0.033		
	LT	1.00	37	1,600	0.023 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	192	0	0.000	N-S(1):	0.132
	TH	2.00	604	3,200	0.250 *	N-S(2):	0.291 *
	LT	0.00	3	1,600	0.002	E-W(1):	0.138
Westbound	RT	1.00	19	1,600	0.011	E-W(2):	0.174 *
	TH	1.00	210	1,600	0.131 *		
	LT	1.00	43	1,600	0.027	V/C:	0.465
Northbound	RT	0.00	61	0	0.000	Lost Time:	0.100
	TH	2.00	355	3,200	0.130	ITS:	0.000
	LT	2.00	119	2,880	0.041 *		
Eastbound	RT	1.00	115	1,600	0.031	ICU:	0.565
	TH	1.00	177	1,600	0.111		
	LT	1.00	69	1,600	0.043 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **19 Pacific Coast Hwy & Beryl St**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	25	0	0.000	N-S(1):	0.542 *
	TH	2.00	1,035	3,200	0.331	N-S(2):	0.357
	LT	1.00	19	1,600	0.012 *	E-W(1):	0.119 *
Westbound	RT	1.00	28	1,600	0.012	E-W(2):	0.078
	TH	1.00	95	1,600	0.059		
	LT	1.00	51	1,600	0.032 *	V/C:	0.661
Northbound	RT	0.00	45	0	0.000	Lost Time:	0.100
	TH	2.00	1,652	3,200	0.530 *	ITS:	0.000
	LT	1.00	41	1,600	0.026		
Eastbound	RT	0.00	25	0	0.000	ICU:	0.761
	TH	1.00	114	1,600	0.087 *		
	LT	1.00	31	1,600	0.019	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	65	0	0.000	N-S(1):	0.418
	TH	2.00	1,883	3,200	0.609 *	N-S(2):	0.637 *
	LT	1.00	41	1,600	0.026	E-W(1):	0.179 *
Westbound	RT	1.00	41	1,600	0.013	E-W(2):	0.174
	TH	1.00	194	1,600	0.121		
	LT	1.00	60	1,600	0.038 *	V/C:	0.816
Northbound	RT	0.00	46	0	0.000	Lost Time:	0.100
	TH	2.00	1,209	3,200	0.392	ITS:	0.000
	LT	1.00	44	1,600	0.028 *		
Eastbound	RT	0.00	58	0	0.000	ICU:	0.916
	TH	1.00	167	1,600	0.141 *		
	LT	1.00	84	1,600	0.053	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **21 Catalina Ave & Carnelian St**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	0	1,600	0.000	N-S(1):	0.268 *
	TH	2.00	225	3,200	0.070	N-S(2):	0.073
	LT	1.00	21	1,600	0.013 *	E-W(1):	0.023
Westbound	RT	0.00	35	0	0.000	E-W(2):	0.038 *
	TH	1.00	1	1,600	0.034 *		
	LT	0.00	19	1,600	0.012	V/C:	0.306
Northbound	RT	1.00	22	1,600	0.008	Lost Time:	0.100
	TH	2.00	815	3,200	0.255 *	ITS:	0.000
	LT	1.00	4	1,600	0.003		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.406
	TH	1.00	4	1,600	0.011		
	LT	0.00	7	1,600	0.004 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	5	1,600	0.003	N-S(1):	0.244 *
	TH	2.00	732	3,200	0.229	N-S(2):	0.234
	LT	1.00	90	1,600	0.056 *	E-W(1):	0.027
Westbound	RT	0.00	40	0	0.000	E-W(2):	0.052 *
	TH	1.00	8	1,600	0.051 *		
	LT	0.00	33	1,600	0.021	V/C:	0.296
Northbound	RT	1.00	41	1,600	0.015	Lost Time:	0.100
	TH	2.00	601	3,200	0.188 *	ITS:	0.000
	LT	1.00	8	1,600	0.005		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.396
	TH	1.00	4	1,600	0.006		
	LT	0.00	1	1,600	0.001 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **22 Catalina Ave & Diamond St**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	4	1,600	0.000	N-S(1):	0.254 *
	TH	2.00	216	3,200	0.068	N-S(2):	0.069
	LT	1.00	26	1,600	0.016 *	E-W(1):	0.039
Westbound	RT	0.00	52	0	0.000	E-W(2):	0.044 *
	TH	1.00	1	1,600	0.033 *		
	LT	1.00	31	1,600	0.019	V/C:	0.298
Northbound	RT	1.00	65	1,600	0.031	Lost Time:	0.100
	TH	2.00	762	3,200	0.238 *	ITS:	0.000
	LT	1.00	2	1,600	0.001		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.398
	TH	1.00	9	1,600	0.020		
	LT	0.00	17	1,600	0.011 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.005	N-S(1):	0.220
	TH	2.00	697	3,200	0.218 *	N-S(2):	0.224 *
	LT	1.00	57	1,600	0.036	E-W(1):	0.042 *
Westbound	RT	0.00	57	0	0.000	E-W(2):	0.041
	TH	1.00	4	1,600	0.038		
	LT	1.00	57	1,600	0.036 *	V/C:	0.266
Northbound	RT	1.00	63	1,600	0.022	Lost Time:	0.100
	TH	2.00	589	3,200	0.184	ITS:	0.000
	LT	1.00	10	1,600	0.006 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.366
	TH	1.00	2	1,600	0.006 *		
	LT	0.00	4	1,600	0.003	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **23 Catalina Ave & Emerald St**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	6	1,600	0.000	N-S(1):	0.252 *
	TH	2.00	224	3,200	0.070	N-S(2):	0.074
	LT	1.00	17	1,600	0.011 *	E-W(1):	0.065
Westbound	RT	0.00	33	0	0.000	E-W(2):	0.069 *
	TH	1.00	4	1,600	0.033 *		
	LT	0.00	15	1,600	0.009	V/C:	0.321
Northbound	RT	0.00	27	0	0.000	Lost Time:	0.100
	TH	2.00	745	3,200	0.241 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.00	24	0	0.000	ICU:	0.421
	TH	1.00	9	1,600	0.056		
	LT	0.00	57	1,600	0.036 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	28	1,600	0.009	N-S(1):	0.217
	TH	2.00	687	3,200	0.215 *	N-S(2):	0.227 *
	LT	1.00	39	1,600	0.024	E-W(1):	0.045
Westbound	RT	0.00	30	0	0.000	E-W(2):	0.054 *
	TH	1.00	6	1,600	0.038 *		
	LT	0.00	24	1,600	0.015	V/C:	0.281
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	596	3,200	0.193	ITS:	0.000
	LT	1.00	19	1,600	0.012 *		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.381
	TH	1.00	6	1,600	0.030		
	LT	0.00	26	1,600	0.016 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **24 Pacific Coast Hwy & Garnet St**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	8	0	0.000	N-S(1):	0.546 *
	TH	2.00	920	3,200	0.290	N-S(2):	0.290
	LT	0.00	1	1,600	0.001 *	E-W(1):	0.017
Westbound	RT	0.00	46	0	0.000	E-W(2):	0.046 *
	TH	1.00	18	1,600	0.040 *		
	LT	1.00	3	1,600	0.002	V/C:	0.592
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	1,734	3,200	0.545 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.692
	TH	1.00	5	1,600	0.015		
	LT	1.00	9	1,600	0.006 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	30	0	0.000	N-S(1):	0.417
	TH	2.00	1,635	3,200	0.522 *	N-S(2):	0.522 *
	LT	0.00	4	1,600	0.003	E-W(1):	0.032
Westbound	RT	0.00	41	0	0.000	E-W(2):	0.043 *
	TH	1.00	16	1,600	0.036 *		
	LT	1.00	13	1,600	0.008	V/C:	0.565
Northbound	RT	0.00	43	0	0.000	Lost Time:	0.100
	TH	2.00	1,281	3,200	0.414	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.665
	TH	1.00	16	1,600	0.024		
	LT	1.00	11	1,600	0.007 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **25 Catalina Ave & Torrance Blvd**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	52	1,600	0.025	N-S(1):	0.244 *
	TH	2.00	170	3,200	0.053	N-S(2):	0.062
	LT	1.00	80	1,600	0.050 *	E-W(1):	0.104 *
Westbound	RT	1.00	51	1,600	0.000	E-W(2):	0.070
	TH	2.00	180	3,200	0.056		
	LT	1.00	78	1,600	0.049 *	V/C:	0.348
Northbound	RT	1.00	156	1,600	0.073	Lost Time:	0.100
	TH	2.00	620	3,200	0.194 *	ITS:	0.000
	LT	1.00	15	1,600	0.009		
Eastbound	RT	1.00	95	1,600	0.055 *	ICU:	0.448
	TH	2.00	77	3,200	0.024		
	LT	1.00	23	1,600	0.014	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	101	1,600	0.048	N-S(1):	0.223 *
	TH	2.00	530	3,200	0.166	N-S(2):	0.192
	LT	1.00	125	1,600	0.078 *	E-W(1):	0.188 *
Westbound	RT	1.00	74	1,600	0.000	E-W(2):	0.134
	TH	2.00	328	3,200	0.103		
	LT	1.00	99	1,600	0.062 *	V/C:	0.411
Northbound	RT	1.00	98	1,600	0.030	Lost Time:	0.100
	TH	2.00	463	3,200	0.145 *	ITS:	0.000
	LT	1.00	42	1,600	0.026		
Eastbound	RT	1.00	222	1,600	0.126 *	ICU:	0.511
	TH	2.00	235	3,200	0.073		
	LT	1.00	49	1,600	0.031	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **26 Pacific Coast Hwy & Torrance Blvd**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.541 *
	TH	2.00	860	3,200	0.275	N-S(2):	0.307
	LT	1.00	228	1,600	0.143 *	E-W(1):	0.181 *
Westbound	RT	1.00	227	1,600	0.071	E-W(2):	0.135
	TH	2.00	338	3,200	0.106		
	LT	1.00	122	1,600	0.076 *	V/C:	0.722
Northbound	RT	0.00	66	0	0.000	Lost Time:	0.100
	TH	2.00	1,209	3,200	0.398 *	ITS:	0.000
	LT	1.00	51	1,600	0.032		
Eastbound	RT	0.00	45	0	0.000	ICU:	0.822
	TH	2.00	292	3,200	0.105 *		
	LT	1.00	46	1,600	0.029	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	39	0	0.000	N-S(1):	0.517 *
	TH	2.00	1,414	3,200	0.454	N-S(2):	0.512
	LT	1.00	309	1,600	0.193 *	E-W(1):	0.243 *
Westbound	RT	1.00	301	1,600	0.092	E-W(2):	0.183
	TH	2.00	446	3,200	0.139		
	LT	1.00	156	1,600	0.098 *	V/C:	0.760
Northbound	RT	0.00	89	0	0.000	Lost Time:	0.100
	TH	2.00	949	3,200	0.324 *	ITS:	0.000
	LT	1.00	92	1,600	0.058		
Eastbound	RT	0.00	85	0	0.000	ICU:	0.860
	TH	2.00	379	3,200	0.145 *		
	LT	1.00	71	1,600	0.044	LOS:	D

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **27 Helberta Ave/Camino Real & Torrance Blvd**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	16	0	0.000	N-S(1):	0.154 *
	TH	1.00	63	1,600	0.063 *	N-S(2):	0.000
	LT	0.00	21	1,600	0.013	E-W(1):	0.225 *
Westbound	RT	0.00	25	0	0.000	E-W(2):	0.197
	TH	2.00	564	3,200	0.184		
	LT	1.00	29	1,600	0.018 *	V/C:	0.379
Northbound	RT	0.00	37	0	0.000	Lost Time:	0.100
	TH	0.60	42	965	0.082	ITS:	0.000
	LT	1.40	183	2,012	0.091 *		
Eastbound	RT	0.00	113	0	0.000	ICU:	0.479
	TH	2.00	550	3,200	0.207 *		
	LT	1.00	20	1,600	0.013	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	11	0	0.000	N-S(1):	0.134 *
	TH	1.00	28	1,600	0.036 *	N-S(2):	0.000
	LT	0.00	19	1,600	0.012	E-W(1):	0.291 *
Westbound	RT	0.00	16	0	0.000	E-W(2):	0.222
	TH	2.00	671	3,200	0.215		
	LT	1.00	45	1,600	0.028 *	V/C:	0.425
Northbound	RT	0.00	28	0	0.000	Lost Time:	0.100
	TH	0.41	30	658	0.088	ITS:	0.000
	LT	1.59	224	2,288	0.098 *		
Eastbound	RT	0.00	162	0	0.000	ICU:	0.525
	TH	2.00	681	3,200	0.263 *		
	LT	1.00	11	1,600	0.007	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **28 Prospect Ave & Torrance Blvd**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	65	0	0.000	N-S(1):	0.421 *
	TH	2.00	586	3,200	0.203	N-S(2):	0.237
	LT	1.00	198	1,600	0.124 *	E-W(1):	0.271
Westbound	RT	0.00	168	0	0.000	E-W(2):	0.299 *
	TH	2.00	578	3,200	0.233 *		
	LT	1.00	154	1,600	0.096	V/C:	0.720
Northbound	RT	0.00	241	0	0.000	Lost Time:	0.100
	TH	2.00	708	3,200	0.297 *	ITS:	0.000
	LT	1.00	54	1,600	0.034		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.820
	TH	2.00	539	3,200	0.175		
	LT	1.00	106	1,600	0.066 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	132	0	0.000	N-S(1):	0.325 *
	TH	2.00	742	3,200	0.273	N-S(2):	0.301
	LT	1.00	207	1,600	0.129 *	E-W(1):	0.312
Westbound	RT	0.00	168	0	0.000	E-W(2):	0.322 *
	TH	2.00	676	3,200	0.264 *		
	LT	1.00	170	1,600	0.106	V/C:	0.647
Northbound	RT	0.00	112	0	0.000	Lost Time:	0.100
	TH	2.00	516	3,200	0.196 *	ITS:	0.000
	LT	1.00	45	1,600	0.028		
Eastbound	RT	0.00	43	0	0.000	ICU:	0.747
	TH	2.00	615	3,200	0.206		
	LT	1.00	92	1,600	0.058 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **29 Catalina Ave & Pearl St**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	140	1,600	0.049	N-S(1):	0.195 *
	TH	2.00	192	3,200	0.062	N-S(2):	0.066
	LT	0.00	5	1,600	0.003 *	E-W(1):	0.093 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	12	1,600	0.015 *		
	LT	0.00	0	0	0.000	V/C:	0.288
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	599	3,200	0.192 *	ITS:	0.000
	LT	0.00	7	1,600	0.004		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.388
	TH	0.15	12	243	0.070		
	LT	1.85	207	2,661	0.078 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	277	1,600	0.132	N-S(1):	0.141
	TH	2.00	534	3,200	0.176 *	N-S(2):	0.178 *
	LT	0.00	30	1,600	0.019	E-W(1):	0.099 *
Westbound	RT	0.00	13	0	0.000	E-W(2):	0.000
	TH	1.00	9	1,600	0.016 *		
	LT	0.00	4	1,600	0.003	V/C:	0.277
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	377	3,200	0.122	ITS:	0.000
	LT	0.00	3	1,600	0.002 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.377
	TH	0.11	10	175	0.074		
	LT	1.89	225	2,723	0.083 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **31 Pacific Coast Hwy & Sapphire St/Francisca Ave**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	5	0	0.000	N-S(1):	0.469 *
	TH	2.00	891	3,200	0.280	N-S(2):	0.292
	LT	1.00	26	1,600	0.016 *	E-W(1):	0.045 *
Westbound	RT	0.00	19	0	0.000	E-W(2):	0.030
	TH	1.00	10	1,600	0.021		
	LT	0.00	5	1,600	0.003 *	V/C:	0.514
Northbound	RT	0.00	37	0	0.000	Lost Time:	0.100
	TH	2.00	1,413	3,200	0.453 *	ITS:	0.000
	LT	1.00	19	1,600	0.012		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.614
	TH	1.00	36	1,600	0.042 *		
	LT	0.00	15	1,600	0.009	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	7	0	0.000	N-S(1):	0.369
	TH	2.00	1,495	3,200	0.469 *	N-S(2):	0.483 *
	LT	1.00	34	1,600	0.021	E-W(1):	0.073 *
Westbound	RT	0.00	21	0	0.000	E-W(2):	0.047
	TH	1.00	11	1,600	0.023		
	LT	0.00	5	1,600	0.003 *	V/C:	0.556
Northbound	RT	0.00	27	0	0.000	Lost Time:	0.100
	TH	2.00	1,086	3,200	0.348	ITS:	0.000
	LT	1.00	22	1,600	0.014 *		
Eastbound	RT	0.00	36	0	0.000	ICU:	0.656
	TH	1.00	37	1,600	0.070 *		
	LT	0.00	39	1,600	0.024	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **34 Pacific Coast Hwy & Knob Hill Ave**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	32	0	0.000	N-S(1):	0.456 *
	TH	2.00	846	3,200	0.274	N-S(2):	0.290
	LT	1.00	51	1,600	0.032 *	E-W(1):	0.084
Westbound	RT	0.00	58	0	0.000	E-W(2):	0.102 *
	TH	1.00	51	1,600	0.068 *		
	LT	1.00	54	1,600	0.034	V/C:	0.558
Northbound	RT	0.00	35	0	0.000	Lost Time:	0.100
	TH	2.00	1,321	3,200	0.424 *	ITS:	0.000
	LT	1.00	25	1,600	0.016		
Eastbound	RT	1.00	30	1,600	0.011	ICU:	0.658
	TH	1.00	80	1,600	0.050		
	LT	1.00	55	1,600	0.034 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	29	0	0.000	N-S(1):	0.398
	TH	2.00	1,338	3,200	0.427 *	N-S(2):	0.460 *
	LT	1.00	62	1,600	0.039	E-W(1):	0.109
Westbound	RT	0.00	58	0	0.000	E-W(2):	0.145 *
	TH	1.00	127	1,600	0.116 *		
	LT	1.00	83	1,600	0.052	V/C:	0.605
Northbound	RT	0.00	70	0	0.000	Lost Time:	0.100
	TH	2.00	1,078	3,200	0.359	ITS:	0.000
	LT	1.00	52	1,600	0.033 *		
Eastbound	RT	1.00	65	1,600	0.024	ICU:	0.705
	TH	1.00	91	1,600	0.057		
	LT	1.00	47	1,600	0.029 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **35 Harbor Dr & Pacific Avenue**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.087 *
	TH	1.00	127	1,600	0.079	N-S(2):	0.079
	LT	1.00	21	1,600	0.013 *	E-W(1):	0.000
Westbound	RT	1.00	129	1,600	0.081 *	E-W(2):	0.081 *
	TH	1.00	2	1,600	0.001		
	LT	0.00	0	0	0.000	V/C:	0.168
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	119	1,600	0.074 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.268
	TH	1.00	0	1,600	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.156
	TH	1.00	307	1,600	0.192 *	N-S(2):	0.192 *
	LT	1.00	80	1,600	0.050	E-W(1):	0.000
Westbound	RT	1.00	152	1,600	0.095 *	E-W(2):	0.095 *
	TH	1.00	6	1,600	0.004		
	LT	0.00	0	0	0.000	V/C:	0.287
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	170	1,600	0.106	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.387
	TH	1.00	0	1,600	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **36 Pacific Coast Hwy & Palos Verdes Blvd**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	259	0	0.000	N-S(1):	0.305
	TH	2.00	545	3,200	0.251 *	N-S(2):	0.351 *
	LT	1.00	62	1,600	0.039	E-W(1):	0.252
Westbound	RT	0.00	98	0	0.000	E-W(2):	0.403 *
	TH	2.00	372	3,200	0.147 *		
	LT	1.00	58	1,600	0.036	V/C:	0.754
Northbound	RT	1.00	79	1,600	0.031	Lost Time:	0.100
	TH	2.00	851	3,200	0.266	ITS:	0.000
	LT	1.00	160	1,600	0.100 *		
Eastbound	RT	0.00	157	0	0.000	ICU:	0.854
	TH	2.00	534	3,200	0.216		
	LT	1.00	410	1,600	0.256 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	352	0	0.000	N-S(1):	0.336
	TH	2.00	950	3,200	0.407 *	N-S(2):	0.546 *
	LT	1.00	85	1,600	0.053	E-W(1):	0.237
Westbound	RT	0.00	135	0	0.000	E-W(2):	0.322 *
	TH	2.00	464	3,200	0.187 *		
	LT	1.00	89	1,600	0.056	V/C:	0.868
Northbound	RT	1.00	76	1,600	0.020	Lost Time:	0.100
	TH	2.00	907	3,200	0.283	ITS:	0.000
	LT	1.00	223	1,600	0.139 *		
Eastbound	RT	0.00	188	0	0.000	ICU:	0.968
	TH	2.00	390	3,200	0.181		
	LT	1.00	216	1,600	0.135 *	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **37 Pacific Coast Hwy & 2nd St**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	34	0	0.000	N-S(1):	0.494 *
	TH	3.00	1,071	4,800	0.230	N-S(2):	0.236
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.104 *
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.000
	TH	1.00	2	1,600	0.021 *		
	LT	0.00	11	1,600	0.007	V/C:	0.598
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	3.00	2,369	4,800	0.494 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.32	42	509	0.079	ICU:	0.698
	TH	0.00	0	0	0.000		
	LT	0.68	90	1,091	0.083 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	71	0	0.000	N-S(1):	0.323
	TH	3.00	2,226	4,800	0.479 *	N-S(2):	0.505 *
	LT	1.00	1	1,600	0.001	E-W(1):	0.102 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	4	1,600	0.019 *		
	LT	0.00	14	1,600	0.009	V/C:	0.607
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,542	4,800	0.322	ITS:	0.000
	LT	1.00	41	1,600	0.026 *		
Eastbound	RT	0.32	42	509	0.070	ICU:	0.707
	TH	0.00	0	0	0.000		
	LT	0.68	90	1,091	0.083 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **38 Pacific Coast Hwy & 10th/Aviation**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.501 *
	TH	3.00	670	4,800	0.140	N-S(2):	0.146
	LT	1.00	139	1,600	0.087 *	E-W(1):	0.179 *
Westbound	RT	1.00	155	1,600	0.010	E-W(2):	0.161
	TH	0.01	3	19	0.161		
	LT	1.99	511	2,863	0.178 *	V/C:	0.680
Northbound	RT	1.00	661	1,600	0.324	Lost Time:	0.100
	TH	3.00	1,985	4,800	0.414 *	ITS:	0.000
	LT	1.00	9	1,600	0.006		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.780
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.379
	TH	3.00	1,864	4,800	0.388 *	N-S(2):	0.396 *
	LT	1.00	222	1,600	0.139	E-W(1):	0.257 *
Westbound	RT	1.00	218	1,600	0.000	E-W(2):	0.231
	TH	0.03	10	43	0.231		
	LT	1.97	728	2,841	0.256 *	V/C:	0.653
Northbound	RT	1.00	518	1,600	0.196	Lost Time:	0.100
	TH	3.00	1,153	4,800	0.240	ITS:	0.000
	LT	1.00	13	1,600	0.008 *		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.753
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **39 Pacific Coast Hwy & Pier/14th St**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	62	0	0.000	N-S(1):	0.383 *
	TH	3.00	657	4,800	0.150	N-S(2):	0.214
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.085 *
Westbound	RT	1.00	6	1,600	0.004 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	V/C:	0.468
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,835	4,800	0.383 *	ITS:	0.000
	LT	2.00	183	2,880	0.064		
Eastbound	RT	1.00	168	1,600	0.041	ICU:	0.568
	TH	0.00	0	0	0.000		
	LT	2.00	232	2,880	0.081 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	147	0	0.000	N-S(1):	0.233
	TH	3.00	1,856	4,800	0.417 *	N-S(2):	0.528 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.086 *
Westbound	RT	1.00	12	1,600	0.006 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001	V/C:	0.614
Northbound	RT	0.00	6	0	0.000	Lost Time:	0.100
	TH	3.00	1,094	4,800	0.229	ITS:	0.000
	LT	2.00	320	2,880	0.111 *		
Eastbound	RT	1.00	245	1,600	0.042	ICU:	0.714
	TH	0.00	0	0	0.000		
	LT	2.00	230	2,880	0.080 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **40 Pacific Coast Hwy & 16th St**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	146	1,600	0.068	N-S(1):	0.350 *
	TH	3.00	883	4,800	0.184	N-S(2):	0.233
	LT	1.00	15	1,600	0.009 *	E-W(1):	0.079 *
Westbound	RT	0.48	24	768	0.027	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.52	26	832	0.031 *	V/C:	0.429
Northbound	RT	0.00	47	0	0.000	Lost Time:	0.100
	TH	3.00	1,589	4,800	0.341 *	ITS:	0.000
	LT	1.00	79	1,600	0.049		
Eastbound	RT	1.00	62	1,600	0.014	ICU:	0.529
	TH	0.00	0	0	0.000		
	LT	1.00	76	1,600	0.048 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	203	1,600	0.092	N-S(1):	0.250
	TH	3.00	1,928	4,800	0.402 *	N-S(2):	0.466 *
	LT	1.00	3	1,600	0.002	E-W(1):	0.081 *
Westbound	RT	0.16	3	253	0.011	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.84	16	1,347	0.012 *	V/C:	0.547
Northbound	RT	0.00	24	0	0.000	Lost Time:	0.100
	TH	3.00	1,164	4,800	0.248	ITS:	0.000
	LT	1.00	102	1,600	0.064 *		
Eastbound	RT	1.00	85	1,600	0.021	ICU:	0.647
	TH	0.00	0	0	0.000		
	LT	1.00	111	1,600	0.069 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **41 Pacific Coast Hwy & Prospect Ave**
Description: **Existing Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	67	1,600	0.020	N-S(1):	0.184 *
	TH	1.00	6	1,600	0.152 *	N-S(2):	0.000
	LT	0.00	237	1,600	0.148	E-W(1):	0.235
Westbound	RT	0.00	212	0	0.000	E-W(2):	0.423 *
	TH	2.00	1,003	3,200	0.380 *		
	LT	1.00	4	1,600	0.003	V/C:	0.607
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	1.00	34	1,600	0.032 *	ITS:	0.000
	LT	0.00	8	1,600	0.005		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.707
	TH	2.00	743	3,200	0.232		
	LT	1.00	69	1,600	0.043 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	88	1,600	0.038	N-S(1):	0.207 *
	TH	1.00	15	1,600	0.178 *	N-S(2):	0.000
	LT	0.00	269	1,600	0.168	E-W(1):	0.343
Westbound	RT	0.00	215	0	0.000	E-W(2):	0.478 *
	TH	2.00	1,206	3,200	0.444 *		
	LT	1.00	13	1,600	0.008	V/C:	0.685
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	1.00	21	1,600	0.029 *	ITS:	0.000
	LT	0.00	5	1,600	0.003		
Eastbound	RT	0.00	8	0	0.000	ICU:	0.785
	TH	2.00	1,063	3,200	0.335		
	LT	1.00	54	1,600	0.034 *	LOS:	C

* - Denotes critical movement

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	6	12	5	0	26	8	26	0	51	494	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	13	5	0	28	9	28	0	55	537	83
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.2	9.4	12.2
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	17%	0%	26%	43%	43%	0%
Vol Thru, %	83%	76%	52%	13%	57%	98%
Vol Right, %	0%	24%	22%	43%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	298	323	23	60	166	97
LT Vol	247	247	12	8	95	95
Through Vol	0	76	5	26	0	2
RT Vol	51	0	6	26	71	0
Lane Flow Rate	324	351	25	65	180	105
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.463	0.478	0.041	0.103	0.283	0.158
Departure Headway (Hd)	5.15	4.899	5.891	5.706	5.658	5.427
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	696	734	603	623	631	657
Service Time	2.901	2.649	3.98	3.783	3.423	3.192
HCM Lane V/C Ratio	0.466	0.478	0.041	0.104	0.285	0.16
HCM Control Delay	12.3	12.1	9.2	9.4	10.7	9.2
HCM Lane LOS	B	B	A	A	B	A
HCM 95th-tile Q	2.5	2.6	0.1	0.3	1.2	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	71	189	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	77	205	2
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.1
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	22	104	21	0	12	34	12	0	12	48	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	24	113	23	0	13	37	13	0	13	52	67
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.6	8	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	15%	21%	38%
Vol Thru, %	39%	71%	59%	47%
Vol Right, %	51%	14%	21%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	122	147	58	95
LT Vol	48	104	34	45
Through Vol	62	21	12	14
RT Vol	12	22	12	36
Lane Flow Rate	133	160	63	103
Geometry Grp	1	1	1	1
Degree of Util (X)	0.158	0.199	0.08	0.132
Departure Headway (Hd)	4.287	4.486	4.571	4.585
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	837	801	784	783
Service Time	2.311	2.51	2.6	2.611
HCM Lane V/C Ratio	0.159	0.2	0.08	0.132
HCM Control Delay	8.1	8.6	8	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.7	0.3	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	36	45	14
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	39	49	15
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.3
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	82	121	62	0	15	48	25	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	89	132	67	0	16	52	27	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	9.8	8.2
HCM LOS	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	17%	10%
Vol Thru, %	46%	55%	76%
Vol Right, %	23%	28%	14%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	265	88	168
LT Vol	121	48	127
Through Vol	62	25	24
RT Vol	82	15	17
Lane Flow Rate	288	96	183
Geometry Grp	1	1	1
Degree of Util (X)	0.353	0.121	0.24
Departure Headway (Hd)	4.415	4.565	4.732
Convergence, Y/N	Yes	Yes	Yes
Cap	815	784	758
Service Time	2.442	2.6	2.765
HCM Lane V/C Ratio	0.353	0.122	0.241
HCM Control Delay	9.8	8.2	9.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.6	0.4	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	17	127	24
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	18	138	26
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.3
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	22	171	393	54	68	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	186	427	59	74	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	486	0	-	0	691	457
Stage 1	-	-	-	-	457	-
Stage 2	-	-	-	-	234	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1077	-	-	-	410	604
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	805	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1077	-	-	-	401	604
Mov Cap-2 Maneuver	-	-	-	-	401	-
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	787	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1077	-	-	-	427
HCM Lane V/C Ratio	0.022	-	-	-	0.211
HCM Control Delay (s)	8.4	-	-	-	15.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

Intersection	
Intersection Delay, s/veh	16.7
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	201	45	0	47	262	0	0	163	0	59
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	218	49	0	51	285	0	0	177	0	64
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	15.6	18.9	19.1
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	73%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	27%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	222	201	45	47	262	137	80	22
LT Vol	0	201	0	0	262	0	80	0
Through Vol	59	0	45	0	0	0	0	22
RT Vol	163	0	0	47	0	137	0	0
Lane Flow Rate	241	218	49	51	285	149	87	24
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.527	0.462	0.094	0.112	0.586	0.322	0.176	0.044
Departure Headway (Hd)	7.864	7.62	6.903	7.913	7.402	7.786	7.274	6.557
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	458	472	517	452	487	462	492	544
Service Time	5.631	5.388	4.671	5.676	5.165	5.548	5.036	4.319
HCM Lane V/C Ratio	0.526	0.462	0.095	0.113	0.585	0.323	0.177	0.044
HCM Control Delay	19.1	16.8	10.4	11.7	20.2	14.2	11.6	9.6
HCM Lane LOS	C	C	B	B	C	B	B	A
HCM 95th-tile Q	3	2.4	0.3	0.4	3.7	1.4	0.6	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	137	80	22
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	149	87	24
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12.9
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	2	0	1	5	3	35	23	727	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	1	5	3	38	25	790	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	868	1264	198	1065	1277	397	396	0	0
Stage 1	421	421	-	842	842	-	-	-	-
Stage 2	447	843	-	223	435	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	246	168	810	177	165	602	1159	-	-
Stage 1	581	587	-	325	378	-	-	-	-
Stage 2	560	378	-	759	579	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	219	160	810	171	158	602	1159	-	-
Mov Cap-2 Maneuver	219	160	-	171	158	-	-	-	-
Stage 1	568	573	-	318	370	-	-	-	-
Stage 2	509	370	-	740	565	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	17.6	15.1	0.2
HCM LOS	C	C	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1159	-	-	289	404	824	-	-
HCM Lane V/C Ratio	0.022	-	-	0.011	0.116	0.024	-	-
HCM Control Delay (s)	8.2	-	-	17.6	15.1	9.5	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0.4	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	18	338	26
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	20	367	28

Major/Minor	Major2		
Conflicting Flow All	793	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	824	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	824	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	0	1	1	1	108	1	630	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	1	1	1	117	1	685	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	731	1074	161	912	1074	343	323	0	0
Stage 1	386	386	-	688	688	-	-	-	-
Stage 2	345	688	-	224	386	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	310	218	855	229	218	653	1234	-	-
Stage 1	609	609	-	403	445	-	-	-	-
Stage 2	644	445	-	758	609	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	246	210	855	222	210	653	1234	-	-
Mov Cap-2 Maneuver	246	210	-	222	210	-	-	-	-
Stage 1	608	587	-	403	445	-	-	-	-
Stage 2	526	445	-	730	587	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	18.8	12	0
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1234	-	-	270	630	904	-	-
HCM Lane V/C Ratio	0.001	-	-	0.032	0.19	0.035	-	-
HCM Control Delay (s)	7.9	0	-	18.8	12	9.1	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0.1	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	29	297	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	32	323	0

Major/Minor	Major2		
Conflicting Flow All	686	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	904	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	904	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.8
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	83	8	15	112	11	24	102	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	90	9	16	122	12	26	111	50

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	134	0	0	99	0	0	274	263	95
Stage 1	-	-	-	-	-	-	97	97	-
Stage 2	-	-	-	-	-	-	177	166	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1451	-	-	1494	-	-	678	642	962
Stage 1	-	-	-	-	-	-	910	815	-
Stage 2	-	-	-	-	-	-	825	761	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1451	-	-	1494	-	-	646	635	962
Mov Cap-2 Maneuver	-	-	-	-	-	-	646	635	-
Stage 1	-	-	-	-	-	-	909	814	-
Stage 2	-	-	-	-	-	-	782	753	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.8	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	700	1451	-	-	1494	-	-	639
HCM Lane V/C Ratio	0.267	0.001	-	-	0.011	-	-	0.054
HCM Control Delay (s)	12	7.5	-	-	7.4	-	-	11
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	2	28	2
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	2	30	2

Major/Minor	Minor2		
Conflicting Flow All	337	261	128
Stage 1	160	160	-
Stage 2	177	101	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	617	644	922
Stage 1	842	766	-
Stage 2	825	811	-
Platoon blocked, %			
Mov Cap-1 Maneuver	502	637	922
Mov Cap-2 Maneuver	502	637	-
Stage 1	841	758	-
Stage 2	675	810	-

Approach	SB
HCM Control Delay, s	11
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	123	18	52	133	17	9	13	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	134	20	57	145	18	10	14	58

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	163	0	0	153	0	0	436	435	143
Stage 1	-	-	-	-	-	-	159	159	-
Stage 2	-	-	-	-	-	-	277	276	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1416	-	-	1428	-	-	531	514	905
Stage 1	-	-	-	-	-	-	843	766	-
Stage 2	-	-	-	-	-	-	729	682	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1416	-	-	1428	-	-	498	491	905
Mov Cap-2 Maneuver	-	-	-	-	-	-	498	491	-
Stage 1	-	-	-	-	-	-	838	762	-
Stage 2	-	-	-	-	-	-	680	655	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	2	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	727	1416	-	-	1428	-	-	521
HCM Lane V/C Ratio	0.112	0.005	-	-	0.04	-	-	0.063
HCM Control Delay (s)	10.6	7.6	-	-	7.6	-	-	12.4
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	11	13	6
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	12	14	7

Major/Minor	Minor2		
Conflicting Flow All	462	435	154
Stage 1	267	267	-
Stage 2	195	168	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	510	514	892
Stage 1	738	688	-
Stage 2	807	759	-
Platoon blocked, %			
Mov Cap-1 Maneuver	451	491	892
Mov Cap-2 Maneuver	451	491	-
Stage 1	734	661	-
Stage 2	737	755	-

Approach	SB
HCM Control Delay, s	12.4
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	21	1	2	0	0	4	1	0	3	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	23	1	2	0	0	4	1	0	3	2	0
Number of Lanes	0	1	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	8	7.8	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	60%	100%	75%	0%	60%	0%
Vol Thru, %	40%	0%	8%	80%	40%	0%
Vol Right, %	0%	0%	17%	20%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	12	12	5	5	124
LT Vol	2	0	1	4	2	0
Through Vol	0	0	2	1	0	124
RT Vol	3	12	9	0	3	0
Lane Flow Rate	5	13	13	5	5	135
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.007	0.019	0.018	0.007	0.007	0.146
Departure Headway (Hd)	4.815	5.289	5.048	4.688	4.893	3.893
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	740	673	705	757	731	921
Service Time	2.868	3.048	2.807	2.757	2.623	1.622
HCM Lane V/C Ratio	0.007	0.019	0.018	0.007	0.007	0.147
HCM Control Delay	7.9	8.2	7.9	7.8	7.7	7.3
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0	0.1	0.1	0	0	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	2	124
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	2	135
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	7.3
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	14	16	47	0	4	14	24	0	29	261	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	17	51	0	4	15	26	0	32	284	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.5	8.3	9.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	18%	0%	18%	10%	4%	0%
Vol Thru, %	82%	97%	21%	33%	96%	94%
Vol Right, %	0%	3%	61%	57%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	135	77	42	91	93
LT Vol	131	131	16	14	87	87
Through Vol	0	4	47	24	0	6
RT Vol	29	0	14	4	4	0
Lane Flow Rate	173	146	84	46	99	101
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.247	0.203	0.113	0.062	0.142	0.143
Departure Headway (Hd)	5.123	5.011	4.842	4.904	5.17	5.102
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	700	715	738	728	692	702
Service Time	2.863	2.75	2.884	2.953	2.913	2.845
HCM Lane V/C Ratio	0.247	0.204	0.114	0.063	0.143	0.144
HCM Control Delay	9.5	9	8.5	8.3	8.8	8.7
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	1	0.8	0.4	0.2	0.5	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	4	174	6
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	189	7
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.7
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	76	19	0	127	84	0	22	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	83	21	0	138	91	0	24	107
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.1	9.4	8.6
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	60%	0%	0%	0%	100%
Vol Right, %	40%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	211	76	19	22	98
LT Vol	127	0	0	0	98
Through Vol	84	0	19	0	0
RT Vol	0	76	0	22	0
Lane Flow Rate	229	83	21	24	107
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.29	0.135	0.027	0.037	0.148
Departure Headway (Hd)	4.545	5.882	4.675	5.515	5.012
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	791	610	765	650	716
Service Time	2.567	3.616	2.409	3.24	2.737
HCM Lane V/C Ratio	0.29	0.136	0.027	0.037	0.149
HCM Control Delay	9.4	9.5	7.5	8.5	8.6
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	1.2	0.5	0.1	0.1	0.5

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	44	65	7	0	33	71	29	0	8	401	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	48	71	8	0	36	77	32	0	9	436	55
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	10.6	10.6	12.1
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	4%	0%	100%	0%	100%	0%	23%	0%
Vol Thru, %	96%	80%	0%	90%	0%	71%	77%	75%
Vol Right, %	0%	20%	0%	10%	0%	29%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	209	252	44	72	33	100	105	108
LT Vol	201	201	0	65	0	71	81	81
Through Vol	0	51	0	7	0	29	0	27
RT Vol	8	0	44	0	33	0	24	0
Lane Flow Rate	227	273	48	78	36	109	114	117
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.363	0.425	0.095	0.143	0.071	0.194	0.195	0.191
Departure Headway (Hd)	5.76	5.597	7.177	6.6	7.147	6.432	6.193	5.899
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	626	642	499	542	501	558	579	608
Service Time	3.491	3.328	4.926	4.348	4.893	4.178	3.933	3.638
HCM Lane V/C Ratio	0.363	0.425	0.096	0.144	0.072	0.195	0.197	0.192
HCM Control Delay	11.8	12.4	10.7	10.5	10.4	10.7	10.4	10
HCM Lane LOS	B	B	B	B	B	B	B	A
HCM 95th-tile Q	1.7	2.1	0.3	0.5	0.2	0.7	0.7	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	24	161	27
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	26	175	29
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.2
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	7	8	6	0	38	10	35	0	26	315	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	9	7	0	41	11	38	0	28	342	36
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.3	9.8	10.5
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	14%	0%	33%	46%	10%	0%
Vol Thru, %	86%	83%	38%	12%	90%	97%
Vol Right, %	0%	17%	29%	42%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	184	191	21	83	260	241
LT Vol	158	158	8	10	234	234
Through Vol	0	33	6	35	0	7
RT Vol	26	0	7	38	26	0
Lane Flow Rate	199	207	23	90	283	262
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.303	0.303	0.039	0.144	0.416	0.381
Departure Headway (Hd)	5.47	5.276	6.072	5.745	5.304	5.233
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	652	675	593	618	673	681
Service Time	3.25	3.056	4.072	3.838	3.078	3.007
HCM Lane V/C Ratio	0.305	0.307	0.039	0.146	0.421	0.385
HCM Control Delay	10.6	10.4	9.3	9.8	11.9	11.2
HCM Lane LOS	B	B	A	A	B	B
HCM 95th-tile Q	1.3	1.3	0.1	0.5	2.1	1.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	26	468	7
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	28	509	8
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	11.6
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	5	81	2	0	29	84	44	0	11	144	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	88	2	0	32	91	48	0	12	157	105
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.1	9.6	10.1
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	6%	18%	39%
Vol Thru, %	57%	92%	54%	55%
Vol Right, %	38%	2%	28%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	252	88	157	148
LT Vol	144	81	84	82
Through Vol	97	2	44	8
RT Vol	11	5	29	58
Lane Flow Rate	274	96	171	161
Geometry Grp	1	1	1	1
Degree of Util (X)	0.349	0.138	0.235	0.222
Departure Headway (Hd)	4.582	5.183	4.95	4.972
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	778	685	718	716
Service Time	2.647	3.269	3.027	3.048
HCM Lane V/C Ratio	0.352	0.14	0.238	0.225
HCM Control Delay	10.1	9.1	9.6	9.5
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.6	0.5	0.9	0.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	58	82	8
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	63	89	9
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.5
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	20.8
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	70	100	54	0	36	121	91	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	76	109	59	0	39	132	99	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	12.9	13.2
HCM LOS	B	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	15%	9%
Vol Thru, %	45%	49%	80%
Vol Right, %	24%	37%	11%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	224	248	507
LT Vol	100	121	407
Through Vol	54	91	54
RT Vol	70	36	46
Lane Flow Rate	243	270	551
Geometry Grp	1	1	1
Degree of Util (X)	0.4	0.431	0.818
Departure Headway (Hd)	5.907	5.76	5.346
Convergence, Y/N	Yes	Yes	Yes
Cap	606	623	678
Service Time	3.973	3.826	3.393
HCM Lane V/C Ratio	0.401	0.433	0.813
HCM Control Delay	12.9	13.2	28
HCM Lane LOS	B	B	D
HCM 95th-tile Q	1.9	2.2	8.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	46	407	54
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	50	442	59
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	28
HCM LOS	D

Lane

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	21	270	380	283	78	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	293	413	308	85	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	721	0	-	0	906	567
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	339	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	881	-	-	-	307	523
Stage 1	-	-	-	-	568	-
Stage 2	-	-	-	-	722	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	881	-	-	-	299	523
Mov Cap-2 Maneuver	-	-	-	-	299	-
Stage 1	-	-	-	-	568	-
Stage 2	-	-	-	-	703	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	21.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	881	-	-	-	318
HCM Lane V/C Ratio	0.026	-	-	-	0.311
HCM Control Delay (s)	9.2	-	-	-	21.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.3

Intersection	
Intersection Delay, s/veh	45.6
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	277	69	0	34	433	0	0	207	0	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	301	75	0	37	471	0	0	225	0	47
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	37.2	73.8	39.8
HCM LOS	E	F	E

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	83%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	17%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	250	277	69	34	433	138	274	44
LT Vol	0	277	0	0	433	0	274	0
Through Vol	43	0	69	0	0	0	0	44
RT Vol	207	0	0	34	0	138	0	0
Lane Flow Rate	272	301	75	37	471	150	298	48
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.767	0.809	0.187	0.105	1	0.392	0.736	0.109
Departure Headway (Hd)	10.159	9.668	8.966	10.228	9.706	9.396	8.896	8.196
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	356	373	399	353	377	383	405	436
Service Time	7.947	7.459	6.756	7.928	7.406	7.174	6.673	5.973
HCM Lane V/C Ratio	0.764	0.807	0.188	0.105	1.249	0.392	0.736	0.11
HCM Control Delay	39.8	43	13.8	14.1	78.5	18.2	32.9	12
HCM Lane LOS	E	E	B	B	F	C	D	B
HCM 95th-tile Q	6.2	7.1	0.7	0.3	11.8	1.8	5.8	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	138	274	44
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	150	298	48
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	26.4
HCM LOS	D

Lane

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	10	0	2	0	3	60	19	427	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	2	0	3	65	21	464	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1360	1592	492	1099	1604	233	985	0	0
Stage 1	1085	1085	-	506	506	-	-	-	-
Stage 2	275	507	-	593	1098	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	107	106	522	167	104	769	697	-	-
Stage 1	231	291	-	517	538	-	-	-	-
Stage 2	708	538	-	459	287	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	90	97	522	156	96	769	697	-	-
Mov Cap-2 Maneuver	90	97	-	156	96	-	-	-	-
Stage 1	224	276	-	501	522	-	-	-	-
Stage 2	625	522	-	433	272	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	44.5	12.1	0.4
HCM LOS	E	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	697	-	-	104	577	1093	-	-
HCM Lane V/C Ratio	0.03	-	-	0.125	0.119	0.052	-	-
HCM Control Delay (s)	10.3	-	-	44.5	12.1	8.5	-	-
HCM Lane LOS	B	-	-	E	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.4	0.2	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	52	883	23
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	57	960	25

Major/Minor	Major2		
Conflicting Flow All	465	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1093	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1093	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.5
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	6	0	3	0	0	42	1	406	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	3	0	0	46	1	441	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1207	1431	448	980	1429	222	897	0	0
Stage 1	984	984	-	445	445	-	-	-	-
Stage 2	223	447	-	535	984	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	139	133	558	204	134	782	753	-	-
Stage 1	267	325	-	562	573	-	-	-	-
Stage 2	759	572	-	497	325	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	127	128	558	197	129	782	753	-	-
Mov Cap-2 Maneuver	127	128	-	197	129	-	-	-	-
Stage 1	266	312	-	561	572	-	-	-	-
Stage 2	713	571	-	475	312	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	27.3	9.9	0
HCM LOS	D	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	753	-	-	171	782	1112	-	-
HCM Lane V/C Ratio	0.001	-	-	0.057	0.058	0.039	-	-
HCM Control Delay (s)	9.8	0	-	27.3	9.9	8.4	-	-
HCM Lane LOS	A	A	-	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	40	825	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	43	897	0

Major/Minor	Major2		
Conflicting Flow All	445	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1112	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1112	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	5	213	18	37	233	7	31	5	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	232	20	40	253	8	34	5	59

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	261	0	0	251	0	0	595	593	241
Stage 1	-	-	-	-	-	-	252	252	-
Stage 2	-	-	-	-	-	-	343	341	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1303	-	-	1314	-	-	416	418	798
Stage 1	-	-	-	-	-	-	752	698	-
Stage 2	-	-	-	-	-	-	672	639	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1303	-	-	1314	-	-	398	404	798
Mov Cap-2 Maneuver	-	-	-	-	-	-	398	404	-
Stage 1	-	-	-	-	-	-	749	695	-
Stage 2	-	-	-	-	-	-	641	620	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	1	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	570	1303	-	-	1314	-	-	475
HCM Lane V/C Ratio	0.172	0.004	-	-	0.031	-	-	0.039
HCM Control Delay (s)	12.6	7.8	-	-	7.8	-	-	12.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	6	4	7
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	7	4	8

Major/Minor	Minor2		
Conflicting Flow All	622	600	257
Stage 1	338	338	-
Stage 2	284	262	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	399	415	782
Stage 1	676	641	-
Stage 2	723	691	-
Platoon blocked, %			
Mov Cap-1 Maneuver	356	401	782
Mov Cap-2 Maneuver	356	401	-
Stage 1	673	621	-
Stage 2	662	688	-

Approach	SB
HCM Control Delay, s	12.9
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	13	230	30	69	246	21	28	28	123
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	250	33	75	267	23	30	30	134

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	290	0	0	283	0	0	748	735	266
Stage 1	-	-	-	-	-	-	295	295	-
Stage 2	-	-	-	-	-	-	453	440	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1272	-	-	1279	-	-	329	347	773
Stage 1	-	-	-	-	-	-	713	669	-
Stage 2	-	-	-	-	-	-	586	578	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1272	-	-	1279	-	-	280	323	773
Mov Cap-2 Maneuver	-	-	-	-	-	-	280	323	-
Stage 1	-	-	-	-	-	-	705	662	-
Stage 2	-	-	-	-	-	-	506	544	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	1.6	16.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	518	1272	-	-	1279	-	-	317
HCM Lane V/C Ratio	0.376	0.011	-	-	0.059	-	-	0.206
HCM Control Delay (s)	16.1	7.9	-	-	8	-	-	19.3
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.7	0	-	-	0.2	-	-	0.8

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	15	34	11
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	16	37	12

Major/Minor	Minor2		
Conflicting Flow All	806	740	279
Stage 1	429	429	-
Stage 2	377	311	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	300	345	760
Stage 1	604	584	-
Stage 2	644	658	-
Platoon blocked, %			
Mov Cap-1 Maneuver	218	321	760
Mov Cap-2 Maneuver	218	321	-
Stage 1	597	550	-
Stage 2	503	651	-

Approach	SB
HCM Control Delay, s	19.3
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	80	2	21	0	0	6	3	0	12	22	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	87	2	23	0	0	7	3	0	13	24	0
Number of Lanes	0	1	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	8.5	8.1	8.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	35%	100%	54%	0%	39%	0%
Vol Thru, %	65%	0%	4%	67%	61%	0%
Vol Right, %	0%	0%	42%	33%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	53	50	9	28	140
LT Vol	22	0	2	6	17	0
Through Vol	0	0	21	3	0	140
RT Vol	12	53	27	0	11	0
Lane Flow Rate	37	57	55	10	30	152
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.053	0.088	0.076	0.014	0.043	0.177
Departure Headway (Hd)	5.117	5.545	5.021	4.977	5.092	4.193
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	702	649	716	721	706	858
Service Time	3.131	3.26	2.736	2.996	2.803	1.904
HCM Lane V/C Ratio	0.053	0.088	0.077	0.014	0.042	0.177
HCM Control Delay	8.4	8.8	8.1	8.1	8	7.8
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.3	0.2	0	0.1	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	11	17	140
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	12	18	152
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	7.8
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	11	33	62	0	5	25	12	0	18	244	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	36	67	0	5	27	13	0	20	265	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.8	8.6	9.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	13%	0%	10%	12%	3%	0%
Vol Thru, %	87%	98%	31%	60%	97%	93%
Vol Right, %	0%	2%	58%	29%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	140	124	106	42	102	107
LT Vol	122	122	33	25	99	99
Through Vol	0	2	62	12	0	8
RT Vol	18	0	11	5	3	0
Lane Flow Rate	152	135	115	46	111	116
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.22	0.192	0.155	0.065	0.161	0.167
Departure Headway (Hd)	5.212	5.136	4.846	5.132	5.224	5.156
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	686	695	737	694	684	693
Service Time	2.963	2.887	2.896	3.193	2.976	2.908
HCM Lane V/C Ratio	0.222	0.194	0.156	0.066	0.162	0.167
HCM Control Delay	9.4	9.1	8.8	8.6	9	8.9
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.8	0.7	0.5	0.2	0.6	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	198	8
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	215	9
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.9
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	84	44	0	163	75	0	30	237
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	91	48	0	177	82	0	33	258
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.6	10.6	10.7
HCM LOS	A	B	B

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	68%	0%	0%	0%	100%
Vol Right, %	32%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	84	44	30	237
LT Vol	163	0	0	0	237
Through Vol	75	0	44	0	0
RT Vol	0	84	0	30	0
Lane Flow Rate	259	91	48	33	258
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.352	0.161	0.068	0.051	0.37
Departure Headway (Hd)	4.898	6.352	5.141	5.672	5.169
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	732	562	692	630	693
Service Time	2.944	4.12	2.909	3.418	2.915
HCM Lane V/C Ratio	0.354	0.162	0.069	0.052	0.372
HCM Control Delay	10.6	10.3	8.3	8.7	10.9
HCM Lane LOS	B	B	A	A	B
HCM 95th-tile Q	1.6	0.6	0.2	0.2	1.7

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	30	64	11	0	69	80	30	0	20	329	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	33	70	12	0	75	87	33	0	22	358	78
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.3	11.8	13
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	11%	0%	100%	0%	100%	0%	18%	0%
Vol Thru, %	89%	70%	0%	85%	0%	73%	82%	86%
Vol Right, %	0%	30%	0%	15%	0%	27%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	185	237	30	75	69	110	217	205
LT Vol	165	165	0	64	0	80	177	177
Through Vol	0	72	0	11	0	30	0	28
RT Vol	20	0	30	0	69	0	40	0
Lane Flow Rate	201	257	33	82	75	120	236	223
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.353	0.433	0.071	0.164	0.159	0.231	0.417	0.382
Departure Headway (Hd)	6.341	6.07	7.841	7.224	7.648	6.942	6.369	6.178
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	566	591	455	494	467	514	564	579
Service Time	4.11	3.838	5.626	5.008	5.426	4.72	4.138	3.947
HCM Lane V/C Ratio	0.355	0.435	0.073	0.166	0.161	0.233	0.418	0.385
HCM Control Delay	12.6	13.4	11.2	11.4	11.9	11.8	13.7	12.8
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.6	2.2	0.2	0.6	0.6	0.9	2	1.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	40	354	28
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	43	385	30
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.3
HCM LOS	B

Lane

CUMULATIVE PLUS PROJECT ALTERNATIVE 7 (REDUCED DENSITY)

Project Title: **Redondo Beach Waterfront**
Intersection: **4 Harbor Dr/Hermosa Ave & Herondo St**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.303 *
	TH	1.00	140	1,600	0.088	N-S(2):	0.088
	LT	1.00	120	1,600	0.075 *	E-W(1):	0.071
Westbound	RT	1.00	282	1,600	0.139 *	E-W(2):	0.140 *
	TH	0.00	0	0	0.000		
	LT	1.00	113	1,600	0.071	V/C:	0.443
Northbound	RT	0.00	78	0	0.000	Lost Time:	0.100
	TH	1.00	287	1,600	0.228 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.543
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.322 *
	TH	1.00	380	1,600	0.238	N-S(2):	0.239
	LT	1.00	162	1,600	0.101 *	E-W(1):	0.143 *
Westbound	RT	1.00	167	1,600	0.054	E-W(2):	0.054
	TH	0.00	0	0	0.000		
	LT	1.00	228	1,600	0.143 *	V/C:	0.465
Northbound	RT	0.00	143	0	0.000	Lost Time:	0.100
	TH	1.00	210	1,600	0.221 *	ITS:	0.000
	LT	0.00	1	1,600	0.001		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.565
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **7 Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	172	1,600	0.108	N-S(1):	0.575 *
	TH	2.00	939	3,200	0.293	N-S(2):	0.307
	LT	1.00	156	1,600	0.098 *	E-W(1):	0.250 *
Westbound	RT	1.00	410	1,600	0.159	E-W(2):	0.237
	TH	1.00	193	1,600	0.121		
	LT	2.00	262	2,880	0.091 *	V/C:	0.825
Northbound	RT	1.00	122	1,600	0.031	Lost Time:	0.100
	TH	3.00	2,289	4,800	0.477 *	ITS:	0.000
	LT	1.00	23	1,600	0.014		
Eastbound	RT	1.00	57	1,600	0.028	ICU:	0.925
	TH	1.00	254	1,600	0.159 *		
	LT	1.00	125	1,600	0.078	LOS:	E

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	544	1,600	0.340	N-S(1):	0.442
	TH	2.00	1,946	3,200	0.608 *	N-S(2):	0.658 *
	LT	1.00	219	1,600	0.137	E-W(1):	0.290 *
Westbound	RT	1.00	272	1,600	0.033	E-W(2):	0.252
	TH	1.00	311	1,600	0.194		
	LT	2.00	328	2,880	0.114 *	V/C:	0.948
Northbound	RT	1.00	236	1,600	0.091	Lost Time:	0.100
	TH	3.00	1,463	4,800	0.305	ITS:	0.000
	LT	1.00	80	1,600	0.050 *		
Eastbound	RT	1.00	98	1,600	0.061	ICU:	1.048
	TH	1.00	282	1,600	0.176 *		
	LT	1.00	93	1,600	0.058	LOS:	F

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **8 Prospect Ave & Anita St**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	33	0	0.000	N-S(1):	0.313 *
	TH	2.00	331	3,200	0.114	N-S(2):	0.257
	LT	1.00	63	1,600	0.039 *	E-W(1):	0.266
Westbound	RT	0.00	85	0	0.000	E-W(2):	0.281 *
	TH	2.00	768	3,200	0.267 *		
	LT	1.00	147	1,600	0.092	V/C:	0.594
Northbound	RT	1.00	160	1,600	0.054	Lost Time:	0.100
	TH	1.00	439	1,600	0.274 *	ITS:	0.000
	LT	1.00	229	1,600	0.143		
Eastbound	RT	0.00	60	0	0.000	ICU:	0.694
	TH	2.00	498	3,200	0.174		
	LT	1.00	22	1,600	0.014 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	63	0	0.000	N-S(1):	0.245
	TH	2.00	570	3,200	0.198 *	N-S(2):	0.286 *
	LT	1.00	91	1,600	0.057	E-W(1):	0.301 *
Westbound	RT	0.00	82	0	0.000	E-W(2):	0.281
	TH	2.00	745	3,200	0.258		
	LT	1.00	109	1,600	0.068 *	V/C:	0.587
Northbound	RT	1.00	78	1,600	0.015	Lost Time:	0.100
	TH	1.00	301	1,600	0.188	ITS:	0.000
	LT	1.00	141	1,600	0.088 *		
Eastbound	RT	0.00	107	0	0.000	ICU:	0.687
	TH	2.00	637	3,200	0.233 *		
	LT	1.00	36	1,600	0.023	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **9 Harbor Dr & Yacht Club Way**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.238 *
	TH	1.00	186	1,600	0.129	N-S(2):	0.140
	LT	1.00	6	1,600	0.004 *	E-W(1):	0.034 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.025
	TH	1.00	1	1,600	0.002		
	LT	0.00	2	1,600	0.001 *	V/C:	0.272
Northbound	RT	0.00	1	0	0.000	Lost Time:	0.100
	TH	1.00	374	1,600	0.234 *	ITS:	0.000
	LT	1.00	17	1,600	0.011		
Eastbound	RT	0.00	15	0	0.000	ICU:	0.372
	TH	1.00	1	1,600	0.033 *		
	LT	0.00	36	1,600	0.023	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	51	0	0.000	N-S(1):	0.186
	TH	1.00	550	1,600	0.376 *	N-S(2):	0.390 *
	LT	1.00	11	1,600	0.007	E-W(1):	0.034
Westbound	RT	0.00	42	0	0.000	E-W(2):	0.048 *
	TH	1.00	0	1,600	0.028 *		
	LT	0.00	3	1,600	0.002	V/C:	0.438
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	1.00	285	1,600	0.179	ITS:	0.000
	LT	1.00	23	1,600	0.014 *		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.538
	TH	1.00	0	1,600	0.032		
	LT	0.00	32	1,600	0.020 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **10 Pacific Coast Hwy & Catalina Ave**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000	N-S(1):	0.582 *
	TH	2.00	1,107	3,200	0.346	N-S(2):	0.350
	LT	0.00	0	0	0.000 *	E-W(1):	0.178
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.200 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.782
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,863	3,200	0.582 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.01	4	22	0.178	ICU:	0.882
	TH	0.00	0	0	0.000		
	LT	1.99	573	2,860	0.200 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	2	0	0.000	N-S(1):	0.436
	TH	2.00	2,149	3,200	0.672 *	N-S(2):	0.681 *
	LT	0.00	0	0	0.000	E-W(1):	0.123
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.141 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.822
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,395	3,200	0.436	ITS:	0.000
	LT	1.00	15	1,600	0.009 *		
Eastbound	RT	0.11	22	173	0.123	ICU:	0.922
	TH	0.00	0	0	0.000		
	LT	1.89	385	2,724	0.141 *	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **11 Harbor Dr & Marina Way**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	78	1,600	0.049	N-S(1):	0.172 *
	TH	1.00	176	1,600	0.110	N-S(2):	0.146
	LT	0.00	0	0	0.000 *	E-W(1):	0.009
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.028 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.200
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	275	1,600	0.172 *	ITS:	0.000
	LT	1.00	58	1,600	0.036		
Eastbound	RT	1.00	43	1,600	0.009	ICU:	0.300
	TH	0.00	0	0	0.000		
	LT	1.00	44	1,600	0.028 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	74	1,600	0.046	N-S(1):	0.195
	TH	1.00	523	1,600	0.327 *	N-S(2):	0.383 *
	LT	0.00	0	0	0.000	E-W(1):	0.018
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.037 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.420
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	312	1,600	0.195	ITS:	0.000
	LT	1.00	89	1,600	0.056 *		
Eastbound	RT	1.00	73	1,600	0.018	ICU:	0.520
	TH	0.00	0	0	0.000		
	LT	1.00	59	1,600	0.037 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **12 Catalina Ave & Gertruda Ave**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	54	0	0.000	N-S(1):	0.169
	TH	2.00	247	3,200	0.094 *	N-S(2):	0.253 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.018
Westbound	RT	0.00	15	0	0.000	E-W(2):	0.028 *
	TH	1.00	3	1,600	0.020 *		
	LT	0.00	14	1,600	0.009	V/C:	0.281
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	507	3,200	0.165	ITS:	0.000
	LT	1.00	254	1,600	0.159 *		
Eastbound	RT	1.00	124	1,600	0.000	ICU:	0.381
	TH	1.00	2	1,600	0.009		
	LT	0.00	13	1,600	0.008 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	70	0	0.000	N-S(1):	0.114
	TH	2.00	682	3,200	0.235 *	N-S(2):	0.333 *
	LT	1.00	5	1,600	0.003	E-W(1):	0.145 *
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.045
	TH	1.00	4	1,600	0.013		
	LT	0.00	6	1,600	0.004 *	V/C:	0.478
Northbound	RT	0.00	7	0	0.000	Lost Time:	0.100
	TH	2.00	349	3,200	0.111	ITS:	0.000
	LT	1.00	156	1,600	0.098 *		
Eastbound	RT	1.00	303	1,600	0.141 *	ICU:	0.578
	TH	1.00	2	1,600	0.033		
	LT	0.00	51	1,600	0.032	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **15 Harbor Dr & Portofino Way/Beryl St**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	NBR, WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	25	1,600	0.008	N-S(1):	0.154 *
	TH	1.00	162	1,600	0.101	N-S(2):	0.105
	LT	1.00	36	1,600	0.023 *	E-W(1):	0.094 *
Westbound	RT	1.00	140	1,600	0.065	E-W(2):	0.081
	TH	1.00	87	1,600	0.054		
	LT	1.00	72	1,600	0.045 *	V/C:	0.248
Northbound	RT	0.00	50	0	0.000	Lost Time:	0.100
	TH	1.00	160	1,600	0.131 *	ITS:	0.000
	LT	1.00	7	1,600	0.004		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.348
	TH	1.00	72	1,600	0.049 *		
	LT	1.00	26	1,600	0.016	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	83	1,600	0.035	N-S(1):	0.289 *
	TH	1.00	422	1,600	0.264	N-S(2):	0.271
	LT	1.00	84	1,600	0.053 *	E-W(1):	0.230 *
Westbound	RT	1.00	147	1,600	0.039	E-W(2):	0.162
	TH	1.00	204	1,600	0.128		
	LT	1.00	186	1,600	0.116 *	V/C:	0.519
Northbound	RT	0.00	128	0	0.000	Lost Time:	0.100
	TH	1.00	249	1,600	0.236 *	ITS:	0.000
	LT	1.00	11	1,600	0.007		
Eastbound	RT	0.00	25	0	0.000	ICU:	0.619
	TH	1.00	158	1,600	0.114 *		
	LT	1.00	55	1,600	0.034	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **16 Catalina Ave & Beryl St**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	75	0	0.000	N-S(1):	0.200 *
	TH	2.00	231	3,200	0.096	N-S(2):	0.161
	LT	0.00	0	0	0.000 *	E-W(1):	0.052
Westbound	RT	1.00	7	1,600	0.004	E-W(2):	0.095 *
	TH	1.00	113	1,600	0.071 *		
	LT	1.00	27	1,600	0.017	V/C:	0.295
Northbound	RT	0.00	43	0	0.000	Lost Time:	0.100
	TH	2.00	596	3,200	0.200 *	ITS:	0.000
	LT	2.00	186	2,880	0.065		
Eastbound	RT	1.00	34	1,600	0.000	ICU:	0.395
	TH	1.00	56	1,600	0.035		
	LT	1.00	39	1,600	0.024 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	201	0	0.000	N-S(1):	0.135
	TH	2.00	616	3,200	0.256 *	N-S(2):	0.309 *
	LT	0.00	3	1,600	0.002	E-W(1):	0.144
Westbound	RT	1.00	19	1,600	0.011	E-W(2):	0.188 *
	TH	1.00	228	1,600	0.143 *		
	LT	1.00	44	1,600	0.028	V/C:	0.497
Northbound	RT	0.00	62	0	0.000	Lost Time:	0.100
	TH	2.00	362	3,200	0.133	ITS:	0.000
	LT	2.00	152	2,880	0.053 *		
Eastbound	RT	1.00	130	1,600	0.028	ICU:	0.597
	TH	1.00	186	1,600	0.116		
	LT	1.00	72	1,600	0.045 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **19 Pacific Coast Hwy & Beryl St**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	27	0	0.000	N-S(1):	0.560 *
	TH	2.00	1,067	3,200	0.342	N-S(2):	0.369
	LT	1.00	19	1,600	0.012 *	E-W(1):	0.122 *
Westbound	RT	1.00	29	1,600	0.012	E-W(2):	0.083
	TH	1.00	99	1,600	0.062		
	LT	1.00	52	1,600	0.033 *	V/C:	0.682
Northbound	RT	0.00	46	0	0.000	Lost Time:	0.100
	TH	2.00	1,707	3,200	0.548 *	ITS:	0.000
	LT	1.00	43	1,600	0.027		
Eastbound	RT	0.00	25	0	0.000	ICU:	0.782
	TH	1.00	117	1,600	0.089 *		
	LT	1.00	33	1,600	0.021	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	71	0	0.000	N-S(1):	0.433
	TH	2.00	1,956	3,200	0.633 *	N-S(2):	0.662 *
	LT	1.00	42	1,600	0.026	E-W(1):	0.184 *
Westbound	RT	1.00	42	1,600	0.013	E-W(2):	0.183
	TH	1.00	205	1,600	0.128		
	LT	1.00	61	1,600	0.038 *	V/C:	0.846
Northbound	RT	0.00	47	0	0.000	Lost Time:	0.100
	TH	2.00	1,256	3,200	0.407	ITS:	0.000
	LT	1.00	47	1,600	0.029 *		
Eastbound	RT	0.00	60	0	0.000	ICU:	0.946
	TH	1.00	173	1,600	0.146 *		
	LT	1.00	88	1,600	0.055	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **21 Catalina Ave & Carnelian St**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	0	1,600	0.000	N-S(1):	0.273 *
	TH	2.00	229	3,200	0.072	N-S(2):	0.075
	LT	1.00	21	1,600	0.013 *	E-W(1):	0.023
Westbound	RT	0.00	36	0	0.000	E-W(2):	0.039 *
	TH	1.00	1	1,600	0.035 *		
	LT	0.00	19	1,600	0.012	V/C:	0.312
Northbound	RT	1.00	22	1,600	0.008	Lost Time:	0.100
	TH	2.00	832	3,200	0.260 *	ITS:	0.000
	LT	1.00	4	1,600	0.003		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.412
	TH	1.00	4	1,600	0.011		
	LT	0.00	7	1,600	0.004 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	5	1,600	0.003	N-S(1):	0.250 *
	TH	2.00	747	3,200	0.233	N-S(2):	0.238
	LT	1.00	92	1,600	0.058 *	E-W(1):	0.027
Westbound	RT	0.00	41	0	0.000	E-W(2):	0.053 *
	TH	1.00	8	1,600	0.052 *		
	LT	0.00	34	1,600	0.021	V/C:	0.303
Northbound	RT	1.00	42	1,600	0.016	Lost Time:	0.100
	TH	2.00	613	3,200	0.192 *	ITS:	0.000
	LT	1.00	8	1,600	0.005		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.403
	TH	1.00	4	1,600	0.006		
	LT	0.00	1	1,600	0.001 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **22 Catalina Ave & Diamond St**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	4	1,600	0.000	N-S(1):	0.260 *
	TH	2.00	220	3,200	0.069	N-S(2):	0.070
	LT	1.00	27	1,600	0.017 *	E-W(1):	0.040
Westbound	RT	0.00	53	0	0.000	E-W(2):	0.045 *
	TH	1.00	1	1,600	0.034 *		
	LT	1.00	32	1,600	0.020	V/C:	0.305
Northbound	RT	1.00	66	1,600	0.031	Lost Time:	0.100
	TH	2.00	778	3,200	0.243 *	ITS:	0.000
	LT	1.00	2	1,600	0.001		
Eastbound	RT	0.00	6	0	0.000	ICU:	0.405
	TH	1.00	9	1,600	0.020		
	LT	0.00	17	1,600	0.011 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.005	N-S(1):	0.224
	TH	2.00	711	3,200	0.222 *	N-S(2):	0.228 *
	LT	1.00	58	1,600	0.036	E-W(1):	0.042 *
Westbound	RT	0.00	58	0	0.000	E-W(2):	0.042 *
	TH	1.00	4	1,600	0.039 *		
	LT	1.00	58	1,600	0.036	V/C:	0.270
Northbound	RT	1.00	64	1,600	0.022	Lost Time:	0.100
	TH	2.00	600	3,200	0.188	ITS:	0.000
	LT	1.00	10	1,600	0.006 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.370
	TH	1.00	2	1,600	0.006		
	LT	0.00	4	1,600	0.003 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **23 Catalina Ave & Emerald St**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	6	1,600	0.000	N-S(1):	0.257 *
	TH	2.00	228	3,200	0.071	N-S(2):	0.075
	LT	1.00	17	1,600	0.011 *	E-W(1):	0.067
Westbound	RT	0.00	34	0	0.000	E-W(2):	0.069 *
	TH	1.00	4	1,600	0.033 *		
	LT	0.00	15	1,600	0.009	V/C:	0.326
Northbound	RT	0.00	28	0	0.000	Lost Time:	0.100
	TH	2.00	760	3,200	0.246 *	ITS:	0.000
	LT	1.00	6	1,600	0.004		
Eastbound	RT	0.00	25	0	0.000	ICU:	0.426
	TH	1.00	9	1,600	0.058		
	LT	0.00	58	1,600	0.036 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	29	1,600	0.010	N-S(1):	0.221
	TH	2.00	701	3,200	0.219 *	N-S(2):	0.231 *
	LT	1.00	40	1,600	0.025	E-W(1):	0.047
Westbound	RT	0.00	31	0	0.000	E-W(2):	0.056 *
	TH	1.00	6	1,600	0.039 *		
	LT	0.00	25	1,600	0.016	V/C:	0.287
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	2.00	608	3,200	0.196	ITS:	0.000
	LT	1.00	19	1,600	0.012 *		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.387
	TH	1.00	6	1,600	0.031		
	LT	0.00	27	1,600	0.017 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **24 Pacific Coast Hwy & Garnet St**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	8	0	0.000	N-S(1):	0.564 *
	TH	2.00	955	3,200	0.301	N-S(2):	0.301
	LT	0.00	1	1,600	0.001 *	E-W(1):	0.017
Westbound	RT	0.00	47	0	0.000	E-W(2):	0.047 *
	TH	1.00	18	1,600	0.041 *		
	LT	1.00	3	1,600	0.002	V/C:	0.611
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	1,793	3,200	0.563 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.711
	TH	1.00	5	1,600	0.015		
	LT	1.00	9	1,600	0.006 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	31	0	0.000	N-S(1):	0.436
	TH	2.00	1,708	3,200	0.545 *	N-S(2):	0.545 *
	LT	0.00	4	1,600	0.003	E-W(1):	0.032
Westbound	RT	0.00	42	0	0.000	E-W(2):	0.043 *
	TH	1.00	16	1,600	0.036 *		
	LT	1.00	13	1,600	0.008	V/C:	0.588
Northbound	RT	0.00	44	0	0.000	Lost Time:	0.100
	TH	2.00	1,340	3,200	0.433	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.688
	TH	1.00	16	1,600	0.024		
	LT	1.00	11	1,600	0.007 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **25 Catalina Ave & Torrance Blvd**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	53	1,600	0.026	N-S(1):	0.249 *
	TH	2.00	173	3,200	0.054	N-S(2):	0.063
	LT	1.00	82	1,600	0.051 *	E-W(1):	0.106 *
Westbound	RT	1.00	51	1,600	0.000	E-W(2):	0.072
	TH	2.00	186	3,200	0.058		
	LT	1.00	80	1,600	0.050 *	V/C:	0.355
Northbound	RT	1.00	159	1,600	0.074	Lost Time:	0.100
	TH	2.00	633	3,200	0.198 *	ITS:	0.000
	LT	1.00	15	1,600	0.009		
Eastbound	RT	1.00	97	1,600	0.056 *	ICU:	0.455
	TH	2.00	79	3,200	0.025		
	LT	1.00	23	1,600	0.014	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	102	1,600	0.048	N-S(1):	0.228 *
	TH	2.00	542	3,200	0.169	N-S(2):	0.196
	LT	1.00	128	1,600	0.080 *	E-W(1):	0.191 *
Westbound	RT	1.00	75	1,600	0.000	E-W(2):	0.136
	TH	2.00	337	3,200	0.105		
	LT	1.00	101	1,600	0.063 *	V/C:	0.419
Northbound	RT	1.00	100	1,600	0.031	Lost Time:	0.100
	TH	2.00	473	3,200	0.148 *	ITS:	0.000
	LT	1.00	43	1,600	0.027		
Eastbound	RT	1.00	227	1,600	0.128 *	ICU:	0.519
	TH	2.00	239	3,200	0.075		
	LT	1.00	50	1,600	0.031	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **26 Pacific Coast Hwy & Torrance Blvd**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.563 *
	TH	2.00	894	3,200	0.286	N-S(2):	0.320
	LT	1.00	233	1,600	0.146 *	E-W(1):	0.190 *
Westbound	RT	1.00	232	1,600	0.072	E-W(2):	0.138
	TH	2.00	348	3,200	0.109		
	LT	1.00	131	1,600	0.082 *	V/C:	0.753
Northbound	RT	0.00	77	0	0.000	Lost Time:	0.100
	TH	2.00	1,257	3,200	0.417 *	ITS:	0.000
	LT	1.00	55	1,600	0.034		
Eastbound	RT	0.00	47	0	0.000	ICU:	0.853
	TH	2.00	300	3,200	0.108 *		
	LT	1.00	47	1,600	0.029	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	40	0	0.000	N-S(1):	0.543 *
	TH	2.00	1,482	3,200	0.476	N-S(2):	0.537
	LT	1.00	316	1,600	0.198 *	E-W(1):	0.261 *
Westbound	RT	1.00	308	1,600	0.094	E-W(2):	0.192
	TH	2.00	467	3,200	0.146		
	LT	1.00	176	1,600	0.110 *	V/C:	0.804
Northbound	RT	0.00	104	0	0.000	Lost Time:	0.100
	TH	2.00	1,000	3,200	0.345 *	ITS:	0.000
	LT	1.00	98	1,600	0.061		
Eastbound	RT	0.00	90	0	0.000	ICU:	0.904
	TH	2.00	392	3,200	0.151 *		
	LT	1.00	73	1,600	0.046	LOS:	E

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **27 Helberta Ave/Camino Real & Torrance Blvd**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	16	0	0.000	N-S(1):	0.156 *
	TH	1.00	64	1,600	0.063 *	N-S(2):	0.000
	LT	0.00	21	1,600	0.013	E-W(1):	0.234 *
Westbound	RT	0.00	26	0	0.000	E-W(2):	0.202
	TH	2.00	580	3,200	0.189		
	LT	1.00	30	1,600	0.019 *	V/C:	0.390
Northbound	RT	0.00	38	0	0.000	Lost Time:	0.100
	TH	0.60	43	967	0.084	ITS:	0.000
	LT	1.40	187	2,010	0.093 *		
Eastbound	RT	0.00	115	0	0.000	ICU:	0.490
	TH	2.00	573	3,200	0.215 *		
	LT	1.00	20	1,600	0.013	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	11	0	0.000	N-S(1):	0.137 *
	TH	1.00	29	1,600	0.037 *	N-S(2):	0.000
	LT	0.00	19	1,600	0.012	E-W(1):	0.303 *
Westbound	RT	0.00	16	0	0.000	E-W(2):	0.230
	TH	2.00	698	3,200	0.223		
	LT	1.00	46	1,600	0.029 *	V/C:	0.440
Northbound	RT	0.00	29	0	0.000	Lost Time:	0.100
	TH	0.42	31	664	0.090	ITS:	0.000
	LT	1.58	229	2,282	0.100 *		
Eastbound	RT	0.00	165	0	0.000	ICU:	0.540
	TH	2.00	713	3,200	0.274 *		
	LT	1.00	11	1,600	0.007	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **28 Prospect Ave & Torrance Blvd**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	66	0	0.000	N-S(1):	0.429 *
	TH	2.00	599	3,200	0.208	N-S(2):	0.242
	LT	1.00	202	1,600	0.126 *	E-W(1):	0.277
Westbound	RT	0.00	172	0	0.000	E-W(2):	0.306 *
	TH	2.00	590	3,200	0.238 *		
	LT	1.00	157	1,600	0.098	V/C:	0.735
Northbound	RT	0.00	246	0	0.000	Lost Time:	0.100
	TH	2.00	723	3,200	0.303 *	ITS:	0.000
	LT	1.00	55	1,600	0.034		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.835
	TH	2.00	551	3,200	0.179		
	LT	1.00	108	1,600	0.068 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	135	0	0.000	N-S(1):	0.332 *
	TH	2.00	758	3,200	0.279	N-S(2):	0.308
	LT	1.00	211	1,600	0.132 *	E-W(1):	0.319
Westbound	RT	0.00	172	0	0.000	E-W(2):	0.328 *
	TH	2.00	690	3,200	0.269 *		
	LT	1.00	174	1,600	0.109	V/C:	0.660
Northbound	RT	0.00	114	0	0.000	Lost Time:	0.100
	TH	2.00	527	3,200	0.200 *	ITS:	0.000
	LT	1.00	46	1,600	0.029		
Eastbound	RT	0.00	44	0	0.000	ICU:	0.760
	TH	2.00	628	3,200	0.210		
	LT	1.00	94	1,600	0.059 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **29 Catalina Ave & Pearl St**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	143	1,600	0.050	N-S(1):	0.199 *
	TH	2.00	197	3,200	0.063	N-S(2):	0.067
	LT	0.00	5	1,600	0.003 *	E-W(1):	0.094 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	12	1,600	0.015 *		
	LT	0.00	0	0	0.000	V/C:	0.293
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	612	3,200	0.196 *	ITS:	0.000
	LT	0.00	7	1,600	0.004		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.393
	TH	0.15	12	239	0.071		
	LT	1.85	211	2,665	0.079 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	283	1,600	0.135	N-S(1):	0.143
	TH	2.00	546	3,200	0.180 *	N-S(2):	0.182 *
	LT	0.00	31	1,600	0.019	E-W(1):	0.100 *
Westbound	RT	0.00	13	0	0.000	E-W(2):	0.000
	TH	1.00	9	1,600	0.016 *		
	LT	0.00	4	1,600	0.003	V/C:	0.282
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	2.00	386	3,200	0.124	ITS:	0.000
	LT	0.00	3	1,600	0.002 *		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.382
	TH	0.11	10	171	0.076		
	LT	1.89	230	2,726	0.084 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **31 Pacific Coast Hwy & Sapphire St/Francisca Ave**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	5	0	0.000	N-S(1):	0.492 *
	TH	2.00	930	3,200	0.292	N-S(2):	0.304
	LT	1.00	27	1,600	0.017 *	E-W(1):	0.046 *
Westbound	RT	0.00	19	0	0.000	E-W(2):	0.030
	TH	1.00	10	1,600	0.021		
	LT	0.00	5	1,600	0.003 *	V/C:	0.538
Northbound	RT	0.00	38	0	0.000	Lost Time:	0.100
	TH	2.00	1,482	3,200	0.475 *	ITS:	0.000
	LT	1.00	19	1,600	0.012		
Eastbound	RT	0.00	16	0	0.000	ICU:	0.638
	TH	1.00	37	1,600	0.043 *		
	LT	0.00	15	1,600	0.009	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	7	0	0.000	N-S(1):	0.396
	TH	2.00	1,580	3,200	0.496 *	N-S(2):	0.510 *
	LT	1.00	35	1,600	0.022	E-W(1):	0.075 *
Westbound	RT	0.00	21	0	0.000	E-W(2):	0.048
	TH	1.00	11	1,600	0.023		
	LT	0.00	5	1,600	0.003 *	V/C:	0.585
Northbound	RT	0.00	28	0	0.000	Lost Time:	0.100
	TH	2.00	1,170	3,200	0.374	ITS:	0.000
	LT	1.00	22	1,600	0.014 *		
Eastbound	RT	0.00	37	0	0.000	ICU:	0.685
	TH	1.00	38	1,600	0.072 *		
	LT	0.00	40	1,600	0.025	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **34 Pacific Coast Hwy & Knob Hill Ave**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	38	0	0.000	N-S(1):	0.477 *
	TH	2.00	879	3,200	0.287	N-S(2):	0.306
	LT	1.00	52	1,600	0.033 *	E-W(1):	0.086
Westbound	RT	0.00	59	0	0.000	E-W(2):	0.108 *
	TH	1.00	54	1,600	0.071 *		
	LT	1.00	55	1,600	0.034	V/C:	0.585
Northbound	RT	0.00	36	0	0.000	Lost Time:	0.100
	TH	2.00	1,385	3,200	0.444 *	ITS:	0.000
	LT	1.00	30	1,600	0.019		
Eastbound	RT	1.00	33	1,600	0.011	ICU:	0.685
	TH	1.00	83	1,600	0.052		
	LT	1.00	59	1,600	0.037 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	35	0	0.000	N-S(1):	0.422
	TH	2.00	1,414	3,200	0.453 *	N-S(2):	0.489 *
	LT	1.00	63	1,600	0.039	E-W(1):	0.113
Westbound	RT	0.00	59	0	0.000	E-W(2):	0.154 *
	TH	1.00	133	1,600	0.120 *		
	LT	1.00	85	1,600	0.053	V/C:	0.643
Northbound	RT	0.00	72	0	0.000	Lost Time:	0.100
	TH	2.00	1,155	3,200	0.383	ITS:	0.000
	LT	1.00	57	1,600	0.036 *		
Eastbound	RT	1.00	71	1,600	0.027	ICU:	0.743
	TH	1.00	96	1,600	0.060		
	LT	1.00	54	1,600	0.034 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **35 Harbor Dr & Pacific Avenue**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.089 *
	TH	1.00	130	1,600	0.081	N-S(2):	0.081
	LT	1.00	21	1,600	0.013 *	E-W(1):	0.000
Westbound	RT	1.00	132	1,600	0.083 *	E-W(2):	0.083 *
	TH	1.00	2	1,600	0.001		
	LT	0.00	0	0	0.000	V/C:	0.172
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	122	1,600	0.076 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.272
	TH	1.00	0	1,600	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.160
	TH	1.00	313	1,600	0.196 *	N-S(2):	0.196 *
	LT	1.00	82	1,600	0.051	E-W(1):	0.000
Westbound	RT	1.00	155	1,600	0.097 *	E-W(2):	0.097 *
	TH	1.00	6	1,600	0.004		
	LT	0.00	0	0	0.000	V/C:	0.293
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	1.00	174	1,600	0.109	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.393
	TH	1.00	0	1,600	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **36 Pacific Coast Hwy & Palos Verdes Blvd**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	265	0	0.000	N-S(1):	0.330
	TH	2.00	571	3,200	0.261 *	N-S(2):	0.370 *
	LT	1.00	72	1,600	0.045	E-W(1):	0.269
Westbound	RT	0.00	100	0	0.000	E-W(2):	0.413 *
	TH	2.00	380	3,200	0.150 *		
	LT	1.00	73	1,600	0.046	V/C:	0.783
Northbound	RT	1.00	82	1,600	0.028	Lost Time:	0.100
	TH	2.00	912	3,200	0.285	ITS:	0.000
	LT	1.00	174	1,600	0.109 *		
Eastbound	RT	0.00	160	0	0.000	ICU:	0.883
	TH	2.00	552	3,200	0.223		
	LT	1.00	420	1,600	0.263 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	361	0	0.000	N-S(1):	0.377
	TH	2.00	1,018	3,200	0.431 *	N-S(2):	0.579 *
	LT	1.00	118	1,600	0.074	E-W(1):	0.265
Westbound	RT	0.00	138	0	0.000	E-W(2):	0.330 *
	TH	2.00	474	3,200	0.191 *		
	LT	1.00	118	1,600	0.074	V/C:	0.909
Northbound	RT	1.00	74	1,600	0.009	Lost Time:	0.100
	TH	2.00	969	3,200	0.303	ITS:	0.000
	LT	1.00	236	1,600	0.148 *		
Eastbound	RT	0.00	192	0	0.000	ICU:	1.009
	TH	2.00	419	3,200	0.191		
	LT	1.00	222	1,600	0.139 *	LOS:	F

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **37 Pacific Coast Hwy & 2nd St**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	35	0	0.000	N-S(1):	0.505 *
	TH	3.00	1,109	4,800	0.238	N-S(2):	0.244
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.105 *
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.000
	TH	1.00	2	1,600	0.021 *		
	LT	0.00	11	1,600	0.007	V/C:	0.610
Northbound	RT	0.00	2	0	0.000	Lost Time:	0.100
	TH	3.00	2,422	4,800	0.505 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.32	43	510	0.081	ICU:	0.710
	TH	0.00	0	0	0.000		
	LT	0.68	92	1,090	0.084 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	73	0	0.000	N-S(1):	0.331
	TH	3.00	2,322	4,800	0.499 *	N-S(2):	0.525 *
	LT	1.00	1	1,600	0.001	E-W(1):	0.103 *
Westbound	RT	0.00	12	0	0.000	E-W(2):	0.000
	TH	1.00	4	1,600	0.019 *		
	LT	0.00	14	1,600	0.009	V/C:	0.628
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,582	4,800	0.330	ITS:	0.000
	LT	1.00	42	1,600	0.026 *		
Eastbound	RT	0.32	43	510	0.071	ICU:	0.728
	TH	0.00	0	0	0.000		
	LT	0.68	92	1,090	0.084 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **38 Pacific Coast Hwy & 10th/Aviation**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.512 *
	TH	3.00	684	4,800	0.143	N-S(2):	0.149
	LT	1.00	142	1,600	0.089 *	E-W(1):	0.183 *
Westbound	RT	1.00	158	1,600	0.010	E-W(2):	0.164
	TH	0.01	3	18	0.164		
	LT	1.99	522	2,864	0.182 *	V/C:	0.695
Northbound	RT	1.00	675	1,600	0.331	Lost Time:	0.100
	TH	3.00	2,028	4,800	0.423 *	ITS:	0.000
	LT	1.00	9	1,600	0.006		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.795
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.387
	TH	3.00	1,903	4,800	0.396 *	N-S(2):	0.404 *
	LT	1.00	227	1,600	0.142	E-W(1):	0.263 *
Westbound	RT	1.00	223	1,600	0.000	E-W(2):	0.236
	TH	0.03	10	42	0.236		
	LT	1.97	744	2,842	0.262 *	V/C:	0.667
Northbound	RT	1.00	529	1,600	0.200	Lost Time:	0.100
	TH	3.00	1,177	4,800	0.245	ITS:	0.000
	LT	1.00	13	1,600	0.008 *		
Eastbound	RT	1.00	2	1,600	0.001 *	ICU:	0.767
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **39 Pacific Coast Hwy & Pier/14th St**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR,		
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	63	0	0.000	N-S(1):	0.391 *
	TH	3.00	671	4,800	0.153	N-S(2):	0.218
	LT	1.00	0	1,600	0.000 *	E-W(1):	0.086 *
Westbound	RT	1.00	6	1,600	0.004 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000	V/C:	0.477
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	3.00	1,874	4,800	0.391 *	ITS:	0.000
	LT	2.00	187	2,880	0.065		
Eastbound	RT	1.00	172	1,600	0.043	ICU:	0.577
	TH	0.00	0	0	0.000		
	LT	2.00	237	2,880	0.082 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	150	0	0.000	N-S(1):	0.238
	TH	3.00	1,895	4,800	0.426 *	N-S(2):	0.540 *
	LT	1.00	6	1,600	0.004	E-W(1):	0.088 *
Westbound	RT	1.00	12	1,600	0.006 *	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.00	1	1,600	0.001	V/C:	0.628
Northbound	RT	0.00	6	0	0.000	Lost Time:	0.100
	TH	3.00	1,117	4,800	0.234	ITS:	0.000
	LT	2.00	327	2,880	0.114 *		
Eastbound	RT	1.00	250	1,600	0.043	ICU:	0.728
	TH	0.00	0	0	0.000		
	LT	2.00	235	2,880	0.082 *	LOS:	C

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **40 Pacific Coast Hwy & 16th St**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	149	1,600	0.069	N-S(1):	0.357 *
	TH	3.00	902	4,800	0.188	N-S(2):	0.239
	LT	1.00	15	1,600	0.009 *	E-W(1):	0.082 *
Westbound	RT	0.48	25	769	0.028	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.52	27	831	0.033 *	V/C:	0.439
Northbound	RT	0.00	48	0	0.000	Lost Time:	0.100
	TH	3.00	1,623	4,800	0.348 *	ITS:	0.000
	LT	1.00	81	1,600	0.051		
Eastbound	RT	1.00	63	1,600	0.014	ICU:	0.539
	TH	0.00	0	0	0.000		
	LT	1.00	78	1,600	0.049 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	207	1,600	0.094	N-S(1):	0.255
	TH	3.00	1,969	4,800	0.410 *	N-S(2):	0.475 *
	LT	1.00	3	1,600	0.002	E-W(1):	0.083 *
Westbound	RT	0.16	3	253	0.011	E-W(2):	0.000
	TH	0.00	0	0	0.000		
	LT	0.84	16	1,347	0.012 *	V/C:	0.558
Northbound	RT	0.00	25	0	0.000	Lost Time:	0.100
	TH	3.00	1,188	4,800	0.253	ITS:	0.000
	LT	1.00	104	1,600	0.065 *		
Eastbound	RT	1.00	87	1,600	0.022	ICU:	0.658
	TH	0.00	0	0	0.000		
	LT	1.00	113	1,600	0.071 *	LOS:	B

* - Denotes critical movement

Project Title: **Redondo Beach Waterfront**
Intersection: **41 Pacific Coast Hwy & Prospect Ave**
Description: **Cumulative Plus Reduced Density Project**

Date/Time: **AM PEAK HOUR**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	75	1,600	0.025	N-S(1):	0.190 *
	TH	1.00	8	1,600	0.156 *	N-S(2):	0.000
	LT	0.00	242	1,600	0.151	E-W(1):	0.246
Westbound	RT	0.00	217	0	0.000	E-W(2):	0.436 *
	TH	2.00	1,040	3,200	0.393 *		
	LT	1.00	4	1,600	0.003	V/C:	0.626
Northbound	RT	0.00	9	0	0.000	Lost Time:	0.100
	TH	1.00	38	1,600	0.034 *	ITS:	0.000
	LT	0.00	8	1,600	0.005		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.726
	TH	2.00	778	3,200	0.243		
	LT	1.00	69	1,600	0.043 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	114	1,600	0.053	N-S(1):	0.215 *
	TH	1.00	19	1,600	0.184 *	N-S(2):	0.000
	LT	0.00	275	1,600	0.172	E-W(1):	0.356
Westbound	RT	0.00	209	0	0.000	E-W(2):	0.488 *
	TH	2.00	1,236	3,200	0.452 *		
	LT	1.00	13	1,600	0.008	V/C:	0.703
Northbound	RT	0.00	20	0	0.000	Lost Time:	0.100
	TH	1.00	24	1,600	0.031 *	ITS:	0.000
	LT	0.00	5	1,600	0.003		
Eastbound	RT	0.00	8	0	0.000	ICU:	0.803
	TH	2.00	1,107	3,200	0.348		
	LT	1.00	57	1,600	0.036 *	LOS:	D

* - Denotes critical movement

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	6	12	5	0	27	8	27	0	52	504	78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	13	5	0	29	9	29	0	57	548	85
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.3	9.5	12.4
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	17%	0%	26%	44%	43%	0%
Vol Thru, %	83%	76%	52%	13%	57%	98%
Vol Right, %	0%	24%	22%	44%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	304	330	23	62	170	99
LT Vol	252	252	12	8	97	97
Through Vol	0	78	5	27	0	2
RT Vol	52	0	6	27	73	0
Lane Flow Rate	330	359	25	67	184	107
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.474	0.49	0.041	0.107	0.291	0.162
Departure Headway (Hd)	5.166	4.914	5.929	5.736	5.684	5.453
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	694	732	598	620	628	654
Service Time	2.919	2.666	4.023	3.817	3.452	3.221
HCM Lane V/C Ratio	0.476	0.49	0.042	0.108	0.293	0.164
HCM Control Delay	12.5	12.3	9.3	9.5	10.8	9.3
HCM Lane LOS	B	B	A	A	B	A
HCM 95th-tile Q	2.6	2.7	0.1	0.4	1.2	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	73	193	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	79	210	2
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.2
HCM LOS	B

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	22	106	21	0	12	35	12	0	12	49	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	24	115	23	0	13	38	13	0	13	53	68
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.7	8	8.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	15%	20%	38%
Vol Thru, %	40%	71%	59%	47%
Vol Right, %	51%	14%	20%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	149	59	97
LT Vol	49	106	35	46
Through Vol	63	21	12	14
RT Vol	12	22	12	37
Lane Flow Rate	135	162	64	105
Geometry Grp	1	1	1	1
Degree of Util (X)	0.161	0.202	0.082	0.135
Departure Headway (Hd)	4.297	4.498	4.585	4.597
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	834	798	781	780
Service Time	2.323	2.525	2.616	2.626
HCM Lane V/C Ratio	0.162	0.203	0.082	0.135
HCM Control Delay	8.2	8.7	8	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.8	0.3	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	37	46	14
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	40	50	15
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.3
HCM LOS	A

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	84	124	63	0	15	49	26	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	91	135	68	0	16	53	28	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	10	8.3
HCM LOS	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	17%	10%
Vol Thru, %	46%	54%	76%
Vol Right, %	23%	29%	15%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	271	90	172
LT Vol	124	49	130
Through Vol	63	26	25
RT Vol	84	15	17
Lane Flow Rate	295	98	187
Geometry Grp	1	1	1
Degree of Util (X)	0.362	0.125	0.247
Departure Headway (Hd)	4.43	4.582	4.75
Convergence, Y/N	Yes	Yes	Yes
Cap	810	781	755
Service Time	2.461	2.62	2.787
HCM Lane V/C Ratio	0.364	0.125	0.248
HCM Control Delay	10	8.3	9.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.7	0.4	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	17	130	25
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	18	141	27
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.4
HCM LOS	A

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	22	175	402	55	69	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	190	437	60	75	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	497	0	-	0	705	467
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	238	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1067	-	-	-	403	596
Stage 1	-	-	-	-	631	-
Stage 2	-	-	-	-	802	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1067	-	-	-	394	596
Mov Cap-2 Maneuver	-	-	-	-	394	-
Stage 1	-	-	-	-	631	-
Stage 2	-	-	-	-	784	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	16
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1067	-	-	-	419
HCM Lane V/C Ratio	0.022	-	-	-	0.218
HCM Control Delay (s)	8.5	-	-	-	16
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

Intersection	
Intersection Delay, s/veh	17.5
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	206	46	0	48	268	0	0	167	0	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	224	50	0	52	291	0	0	182	0	65
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	16.2	19.9	20
HCM LOS	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	74%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	26%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	227	206	46	48	268	140	82	22
LT Vol	0	206	0	0	268	0	82	0
Through Vol	60	0	46	0	0	0	0	22
RT Vol	167	0	0	48	0	140	0	0
Lane Flow Rate	247	224	50	52	291	152	89	24
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.546	0.48	0.097	0.116	0.607	0.333	0.183	0.044
Departure Headway (Hd)	7.97	7.725	7.007	8.011	7.5	7.887	7.374	6.657
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	452	466	510	447	481	455	485	536
Service Time	5.74	5.496	4.778	5.778	5.266	5.654	5.142	4.424
HCM Lane V/C Ratio	0.546	0.481	0.098	0.116	0.605	0.334	0.184	0.045
HCM Control Delay	20	17.5	10.5	11.8	21.3	14.6	11.8	9.7
HCM Lane LOS	C	C	B	B	C	B	B	A
HCM 95th-tile Q	3.2	2.6	0.3	0.4	4	1.4	0.7	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	140	82	22
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	152	89	24
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.2
HCM LOS	B

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Two Way Analysis cannot be performed on Signalized Intersection.

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	2	0	1	5	3	36	23	743	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	1	5	3	39	25	808	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	886	1292	203	1087	1305	405	407	0	0
Stage 1	431	431	-	859	859	-	-	-	-
Stage 2	455	861	-	228	446	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	239	162	804	170	159	595	1148	-	-
Stage 1	573	581	-	317	371	-	-	-	-
Stage 2	554	371	-	754	572	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	212	155	804	164	152	595	1148	-	-
Mov Cap-2 Maneuver	212	155	-	164	152	-	-	-	-
Stage 1	561	567	-	310	363	-	-	-	-
Stage 2	502	363	-	734	558	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	18	15.3	0.2
HCM LOS	C	C	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1148	-	-	281	397	811	-	-
HCM Lane V/C Ratio	0.022	-	-	0.012	0.12	0.024	-	-
HCM Control Delay (s)	8.2	-	-	18	15.3	9.5	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0.4	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	18	347	27
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	20	377	29

Major/Minor	Major2		
Conflicting Flow All	811	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	811	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	811	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	0	1	1	1	110	1	644	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	1	1	1	120	1	700	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	750	1100	166	934	1100	351	332	0	0
Stage 1	397	397	-	703	703	-	-	-	-
Stage 2	353	703	-	231	397	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	300	211	849	221	211	645	1224	-	-
Stage 1	600	602	-	394	438	-	-	-	-
Stage 2	637	438	-	751	602	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	236	203	849	214	203	645	1224	-	-
Mov Cap-2 Maneuver	236	203	-	214	203	-	-	-	-
Stage 1	599	580	-	394	438	-	-	-	-
Stage 2	517	438	-	722	580	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	19.4	12.2	0
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1224	-	-	259	622	892	-	-
HCM Lane V/C Ratio	0.001	-	-	0.034	0.196	0.037	-	-
HCM Control Delay (s)	7.9	0	-	19.4	12.2	9.2	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	30	305	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	33	332	0

Major/Minor	Major2		
Conflicting Flow All	701	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	892	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	892	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.8
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	85	8	15	114	11	24	104	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	92	9	16	124	12	26	113	51

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	136	0	0	101	0	0	278	267	97
Stage 1	-	-	-	-	-	-	99	99	-
Stage 2	-	-	-	-	-	-	179	168	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1448	-	-	1491	-	-	674	639	959
Stage 1	-	-	-	-	-	-	907	813	-
Stage 2	-	-	-	-	-	-	823	759	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1448	-	-	1491	-	-	641	632	959
Mov Cap-2 Maneuver	-	-	-	-	-	-	641	632	-
Stage 1	-	-	-	-	-	-	906	812	-
Stage 2	-	-	-	-	-	-	778	751	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.8	12.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	697	1448	-	-	1491	-	-	634
HCM Lane V/C Ratio	0.273	0.001	-	-	0.011	-	-	0.057
HCM Control Delay (s)	12.1	7.5	-	-	7.4	-	-	11
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	2	29	2
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	2	32	2

Major/Minor	Minor2		
Conflicting Flow All	344	266	130
Stage 1	163	163	-
Stage 2	181	103	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	610	640	920
Stage 1	839	763	-
Stage 2	821	810	-
Platoon blocked, %			
Mov Cap-1 Maneuver	494	633	920
Mov Cap-2 Maneuver	494	633	-
Stage 1	838	755	-
Stage 2	669	809	-

Approach	SB
HCM Control Delay, s	11
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	7	126	18	53	136	17	9	13	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	137	20	58	148	18	10	14	59

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	166	0	0	157	0	0	445	444	147
Stage 1	-	-	-	-	-	-	162	162	-
Stage 2	-	-	-	-	-	-	283	282	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1412	-	-	1423	-	-	523	508	900
Stage 1	-	-	-	-	-	-	840	764	-
Stage 2	-	-	-	-	-	-	724	678	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1412	-	-	1423	-	-	490	485	900
Mov Cap-2 Maneuver	-	-	-	-	-	-	490	485	-
Stage 1	-	-	-	-	-	-	835	760	-
Stage 2	-	-	-	-	-	-	675	650	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	2	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	723	1412	-	-	1423	-	-	514
HCM Lane V/C Ratio	0.114	0.005	-	-	0.04	-	-	0.063
HCM Control Delay (s)	10.6	7.6	-	-	7.6	-	-	12.5
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	11	13	6
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	12	14	7

Major/Minor	Minor2		
Conflicting Flow All	470	444	157
Stage 1	272	272	-
Stage 2	198	172	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	504	508	889
Stage 1	734	685	-
Stage 2	804	756	-
Platoon blocked, %			
Mov Cap-1 Maneuver	444	485	889
Mov Cap-2 Maneuver	444	485	-
Stage 1	730	657	-
Stage 2	733	752	-

Approach	SB
HCM Control Delay, s	12.5
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	21	1	2	0	0	4	1	0	3	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	23	1	2	0	0	4	1	0	3	2	0
Number of Lanes	0	1	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	8	7.8	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	60%	100%	75%	0%	60%	0%
Vol Thru, %	40%	0%	8%	80%	40%	0%
Vol Right, %	0%	0%	17%	20%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	12	12	5	5	127
LT Vol	2	0	1	4	2	0
Through Vol	0	0	2	1	0	127
RT Vol	3	12	9	0	3	0
Lane Flow Rate	5	13	13	5	5	138
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.007	0.019	0.018	0.007	0.007	0.149
Departure Headway (Hd)	4.817	5.295	5.054	4.694	4.893	3.893
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	739	673	704	756	731	919
Service Time	2.87	3.054	2.813	2.763	2.623	1.622
HCM Lane V/C Ratio	0.007	0.019	0.018	0.007	0.007	0.15
HCM Control Delay	7.9	8.2	7.9	7.8	7.7	7.3
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0	0.1	0.1	0	0	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	2	127
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	2	138
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	7.3
HCM LOS	A

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	14	16	48	0	4	14	25	0	30	267	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	17	52	0	4	15	27	0	33	290	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.5	8.3	9.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	18%	0%	18%	9%	4%	0%
Vol Thru, %	82%	97%	21%	33%	96%	94%
Vol Right, %	0%	3%	62%	58%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	164	138	78	43	93	95
LT Vol	134	134	16	14	89	89
Through Vol	0	4	48	25	0	6
RT Vol	30	0	14	4	4	0
Lane Flow Rate	178	149	85	47	101	103
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.253	0.209	0.115	0.064	0.146	0.147
Departure Headway (Hd)	5.135	5.023	4.865	4.926	5.184	5.118
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	698	713	734	724	689	699
Service Time	2.878	2.765	2.911	2.978	2.93	2.864
HCM Lane V/C Ratio	0.255	0.209	0.116	0.065	0.147	0.147
HCM Control Delay	9.6	9.1	8.5	8.3	8.8	8.8
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	1	0.8	0.4	0.2	0.5	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	4	178	6
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	193	7
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.8
HCM LOS	A

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	78	19	0	130	87	0	23	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	85	21	0	141	95	0	25	109
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.2	9.5	8.7
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	60%	0%	0%	0%	100%
Vol Right, %	40%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	217	78	19	23	100
LT Vol	130	0	0	0	100
Through Vol	87	0	19	0	0
RT Vol	0	78	0	23	0
Lane Flow Rate	236	85	21	25	109
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.299	0.139	0.027	0.038	0.152
Departure Headway (Hd)	4.558	5.907	4.7	5.531	5.029
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	790	607	761	649	714
Service Time	2.577	3.641	2.434	3.254	2.751
HCM Lane V/C Ratio	0.299	0.14	0.028	0.039	0.153
HCM Control Delay	9.5	9.6	7.6	8.5	8.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	1.3	0.5	0.1	0.1	0.5

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	45	72	7	0	34	82	30	0	8	410	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	49	78	8	0	37	89	33	0	9	446	57
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	10.7	11	12.5
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	4%	0%	100%	0%	100%	0%	23%	0%
Vol Thru, %	96%	80%	0%	91%	0%	73%	77%	75%
Vol Right, %	0%	20%	0%	9%	0%	27%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	213	257	45	79	34	112	107	110
LT Vol	205	205	0	72	0	82	82	82
Through Vol	0	52	0	7	0	30	0	28
RT Vol	8	0	45	0	34	0	25	0
Lane Flow Rate	232	279	49	86	37	122	116	120
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.377	0.442	0.099	0.16	0.074	0.221	0.204	0.2
Departure Headway (Hd)	5.86	5.698	7.273	6.701	7.23	6.53	6.312	6.013
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	614	631	492	534	495	549	568	595
Service Time	3.602	3.44	5.029	4.456	4.984	4.284	4.064	3.764
HCM Lane V/C Ratio	0.378	0.442	0.1	0.161	0.075	0.222	0.204	0.202
HCM Control Delay	12.1	12.9	10.8	10.7	10.6	11.1	10.7	10.3
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.8	2.3	0.3	0.6	0.2	0.8	0.8	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	25	164	28
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	178	30
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.5
HCM LOS	B

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	7	8	6	0	39	10	36	0	27	321	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	9	7	0	42	11	39	0	29	349	37
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.4	9.9	10.6
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	14%	0%	33%	46%	10%	0%
Vol Thru, %	86%	83%	38%	12%	90%	97%
Vol Right, %	0%	17%	29%	42%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	188	195	21	85	266	246
LT Vol	161	161	8	10	239	239
Through Vol	0	34	6	36	0	7
RT Vol	27	0	7	39	27	0
Lane Flow Rate	204	211	23	92	289	267
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.311	0.311	0.039	0.148	0.427	0.389
Departure Headway (Hd)	5.493	5.297	6.117	5.775	5.324	5.253
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	648	672	589	614	670	680
Service Time	3.275	3.079	4.117	3.873	3.101	3.029
HCM Lane V/C Ratio	0.315	0.314	0.039	0.15	0.431	0.393
HCM Control Delay	10.8	10.5	9.4	9.9	12.1	11.4
HCM Lane LOS	B	B	A	A	B	B
HCM 95th-tile Q	1.3	1.3	0.1	0.5	2.1	1.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	27	477	7
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	29	518	8
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	11.8
HCM LOS	B

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	5	83	2	0	30	86	45	0	11	147	99
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	90	2	0	33	93	49	0	12	160	108
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.2	9.7	10.3
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	6%	19%	39%
Vol Thru, %	57%	92%	53%	56%
Vol Right, %	39%	2%	28%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	257	90	161	151
LT Vol	147	83	86	84
Through Vol	99	2	45	8
RT Vol	11	5	30	59
Lane Flow Rate	279	98	175	164
Geometry Grp	1	1	1	1
Degree of Util (X)	0.358	0.142	0.242	0.228
Departure Headway (Hd)	4.609	5.217	4.98	5.003
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	774	680	714	711
Service Time	2.674	3.307	3.06	3.08
HCM Lane V/C Ratio	0.36	0.144	0.245	0.231
HCM Control Delay	10.3	9.2	9.7	9.6
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.6	0.5	0.9	0.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	59	84	8
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	64	91	9
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.6
HCM LOS	A

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Intersection Delay, s/veh	22.2
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	72	102	55	0	37	124	93	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	78	111	60	0	40	135	101	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0	0

Approach	EB	WB
Opposing Approach	WB	EB
Opposing Lanes	1	1
Conflicting Approach Left	SB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		SB
Conflicting Lanes Right	0	1
HCM Control Delay	13.2	13.5
HCM LOS	B	B

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	15%	9%
Vol Thru, %	45%	49%	80%
Vol Right, %	24%	37%	11%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	229	254	517
LT Vol	102	124	415
Through Vol	55	93	55
RT Vol	72	37	47
Lane Flow Rate	249	276	562
Geometry Grp	1	1	1
Degree of Util (X)	0.413	0.446	0.841
Departure Headway (Hd)	5.969	5.82	5.388
Convergence, Y/N	Yes	Yes	Yes
Cap	600	616	669
Service Time	4.042	3.891	3.44
HCM Lane V/C Ratio	0.415	0.448	0.84
HCM Control Delay	13.2	13.5	30.4
HCM Lane LOS	B	B	D
HCM 95th-tile Q	2	2.3	9.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	47	415	55
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	51	451	60
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	
Opposing Lanes	0
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	30.4
HCM LOS	D

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	21	277	392	289	80	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	301	426	314	87	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	740	0	-	0	930	583
Stage 1	-	-	-	-	583	-
Stage 2	-	-	-	-	347	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	867	-	-	-	297	512
Stage 1	-	-	-	-	558	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	867	-	-	-	289	512
Mov Cap-2 Maneuver	-	-	-	-	289	-
Stage 1	-	-	-	-	558	-
Stage 2	-	-	-	-	697	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	22.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	867	-	-	-	308
HCM Lane V/C Ratio	0.026	-	-	-	0.328
HCM Control Delay (s)	9.3	-	-	-	22.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4

Intersection	
Intersection Delay, s/veh	47.7
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	284	70	0	35	446	0	0	211	0	44
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	309	76	0	38	485	0	0	229	0	48
Number of Lanes	0	0	1	1	0	1	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	3	2
HCM Control Delay	40.6	74.5	42.7
HCM LOS	E	F	E

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	83%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	100%	0%
Vol Right, %	17%	0%	100%	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	255	284	70	35	446	141	280	45
LT Vol	0	284	0	0	446	0	280	0
Through Vol	44	0	70	0	0	0	0	45
RT Vol	211	0	0	35	0	141	0	0
Lane Flow Rate	277	309	76	38	485	153	304	49
Geometry Grp	8	8	8	8	8	7	7	7
Degree of Util (X)	0.79	0.838	0.192	0.11	1	0.404	0.76	0.113
Departure Headway (Hd)	10.267	9.773	9.071	10.39	9.867	9.488	8.988	8.287
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	352	370	394	347	373	379	402	431
Service Time	8.058	7.565	6.863	8.09	7.567	7.266	6.765	6.065
HCM Lane V/C Ratio	0.787	0.835	0.193	0.11	1.3	0.404	0.756	0.114
HCM Control Delay	42.7	47.2	14	14.4	79.2	18.6	35.3	12.1
HCM Lane LOS	E	E	B	B	F	C	E	B
HCM 95th-tile Q	6.6	7.6	0.7	0.4	11.7	1.9	6.2	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	141	280	45
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	153	304	49
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	28
HCM LOS	D

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	10	0	2	0	3	61	19	438	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	2	0	3	66	21	476	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1395	1632	505	1126	1644	239	1011	0	0
Stage 1	1114	1114	-	518	518	-	-	-	-
Stage 2	281	518	-	608	1126	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	101	100	512	160	99	762	681	-	-
Stage 1	222	282	-	509	531	-	-	-	-
Stage 2	702	531	-	450	278	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	84	92	512	149	91	762	681	-	-
Mov Cap-2 Maneuver	84	92	-	149	91	-	-	-	-
Stage 1	215	267	-	493	515	-	-	-	-
Stage 2	617	515	-	424	263	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	47.3	12.3	0.4
HCM LOS	E	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	681	-	-	98	566	1082	-	-
HCM Lane V/C Ratio	0.03	-	-	0.133	0.123	0.053	-	-
HCM Control Delay (s)	10.5	-	-	47.3	12.3	8.5	-	-
HCM Lane LOS	B	-	-	E	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.4	0.2	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	53	907	23
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	58	986	25

Major/Minor	Major2		
Conflicting Flow All	477	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1082	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1082	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.5
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	6	0	3	0	0	43	1	416	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	3	0	0	47	1	452	3

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1238	1468	460	1005	1466	228	921	0	0
Stage 1	1010	1010	-	456	456	-	-	-	-
Stage 2	228	458	-	549	1010	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	132	127	548	196	127	775	737	-	-
Stage 1	257	316	-	554	567	-	-	-	-
Stage 2	754	565	-	488	316	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	120	122	548	188	122	775	737	-	-
Mov Cap-2 Maneuver	120	122	-	188	122	-	-	-	-
Stage 1	256	303	-	553	566	-	-	-	-
Stage 2	707	564	-	465	303	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	28.6	9.9	0
HCM LOS	D	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	737	-	-	162	775	1102	-	-
HCM Lane V/C Ratio	0.001	-	-	0.06	0.06	0.04	-	-
HCM Control Delay (s)	9.9	0	-	28.6	9.9	8.4	-	-
HCM Lane LOS	A	A	-	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	41	847	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	45	921	0

Major/Minor	Major2		
Conflicting Flow All	455	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	1102	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1102	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	5	217	18	38	237	7	31	5	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	236	20	41	258	8	34	5	60

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	265	0	0	255	0	0	607	605	246
Stage 1	-	-	-	-	-	-	257	257	-
Stage 2	-	-	-	-	-	-	350	348	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1299	-	-	1310	-	-	408	412	793
Stage 1	-	-	-	-	-	-	748	695	-
Stage 2	-	-	-	-	-	-	666	634	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1299	-	-	1310	-	-	390	398	793
Mov Cap-2 Maneuver	-	-	-	-	-	-	390	398	-
Stage 1	-	-	-	-	-	-	745	692	-
Stage 2	-	-	-	-	-	-	634	614	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	1.1	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	564	1299	-	-	1310	-	-	468
HCM Lane V/C Ratio	0.175	0.004	-	-	0.032	-	-	0.039
HCM Control Delay (s)	12.7	7.8	-	-	7.8	-	-	13
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	6	4	7
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	7	4	8

Major/Minor	Minor2		
Conflicting Flow All	633	610	261
Stage 1	344	344	-
Stage 2	289	266	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	392	409	778
Stage 1	671	637	-
Stage 2	719	689	-
Platoon blocked, %			
Mov Cap-1 Maneuver	349	395	778
Mov Cap-2 Maneuver	349	395	-
Stage 1	668	617	-
Stage 2	657	686	-

Approach	SB
HCM Control Delay, s	13
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	13	235	31	70	251	21	29	29	126
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	255	34	76	273	23	32	32	137

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	296	0	0	289	0	0	762	749	272
Stage 1	-	-	-	-	-	-	301	301	-
Stage 2	-	-	-	-	-	-	461	448	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1265	-	-	1273	-	-	322	341	767
Stage 1	-	-	-	-	-	-	708	665	-
Stage 2	-	-	-	-	-	-	581	573	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1265	-	-	1273	-	-	272	317	767
Mov Cap-2 Maneuver	-	-	-	-	-	-	272	317	-
Stage 1	-	-	-	-	-	-	700	658	-
Stage 2	-	-	-	-	-	-	500	539	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	1.6	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	508	1265	-	-	1273	-	-	310
HCM Lane V/C Ratio	0.394	0.011	-	-	0.06	-	-	0.214
HCM Control Delay (s)	16.6	7.9	-	-	8	-	-	19.7
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.9	0	-	-	0.2	-	-	0.8

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	15	35	11
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	16	38	12

Major/Minor	Minor2		
Conflicting Flow All	821	753	284
Stage 1	436	436	-
Stage 2	385	317	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	293	339	755
Stage 1	599	580	-
Stage 2	638	654	-
Platoon blocked, %			
Mov Cap-1 Maneuver	211	315	755
Mov Cap-2 Maneuver	211	315	-
Stage 1	592	545	-
Stage 2	493	647	-

Approach	SB
HCM Control Delay, s	19.7
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	82	2	21	0	0	6	3	0	12	22	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	89	2	23	0	0	7	3	0	13	24	0
Number of Lanes	0	0	1	1	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	2	1
HCM Control Delay	8.8	8.1	8.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	35%	98%	0%	0%	39%	0%
Vol Thru, %	65%	2%	0%	67%	61%	0%
Vol Right, %	0%	0%	100%	33%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	84	21	9	28	143
LT Vol	22	2	0	6	17	0
Through Vol	0	0	21	3	0	143
RT Vol	12	82	0	0	11	0
Lane Flow Rate	37	91	23	10	30	155
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.053	0.14	0.028	0.014	0.043	0.182
Departure Headway (Hd)	5.133	5.538	4.346	4.989	5.103	4.204
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	700	649	825	718	704	856
Service Time	3.15	3.257	2.065	3.012	2.814	1.915
HCM Lane V/C Ratio	0.053	0.14	0.028	0.014	0.043	0.181
HCM Control Delay	8.4	9.2	7.2	8.1	8	7.9
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.5	0.1	0	0.1	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	11	17	143
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	12	18	155
Number of Lanes	0	0	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	7.9
HCM LOS	A

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	11	34	63	0	5	26	12	0	18	249	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	37	68	0	5	28	13	0	20	271	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.9	8.6	9.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	13%	0%	10%	12%	3%	0%
Vol Thru, %	87%	98%	31%	60%	97%	93%
Vol Right, %	0%	2%	58%	28%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	143	127	108	43	104	109
LT Vol	125	125	34	26	101	101
Through Vol	0	2	63	12	0	8
RT Vol	18	0	11	5	3	0
Lane Flow Rate	155	137	117	47	113	118
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.225	0.197	0.159	0.067	0.165	0.17
Departure Headway (Hd)	5.226	5.152	4.87	5.162	5.24	5.174
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	685	694	733	689	682	690
Service Time	2.98	2.905	2.924	3.226	2.996	2.93
HCM Lane V/C Ratio	0.226	0.197	0.16	0.068	0.166	0.171
HCM Control Delay	9.5	9.2	8.9	8.6	9	9
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.9	0.7	0.6	0.2	0.6	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	202	8
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	3	220	9
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9
HCM LOS	A

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	87	46	0	167	78	0	32	242
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	95	50	0	182	85	0	35	263
Number of Lanes	0	1	1	0	1	0	0	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	9.8	10.8	10.8
HCM LOS	A	B	B

Lane	NBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	100%	0%	100%	0%
Vol Thru, %	68%	0%	0%	0%	100%
Vol Right, %	32%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	245	87	46	32	242
LT Vol	167	0	0	0	242
Through Vol	78	0	46	0	0
RT Vol	0	87	0	32	0
Lane Flow Rate	266	95	50	35	263
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.364	0.168	0.072	0.055	0.38
Departure Headway (Hd)	4.923	6.386	5.175	5.698	5.195
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	727	559	687	627	689
Service Time	2.975	4.162	2.95	3.449	2.946
HCM Lane V/C Ratio	0.366	0.17	0.073	0.056	0.382
HCM Control Delay	10.8	10.5	8.4	8.8	11.1
HCM Lane LOS	B	B	A	A	B
HCM 95th-tile Q	1.7	0.6	0.2	0.2	1.8

Two Way Analysis cannot be performed on an All Way Stop Intersection.

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	31	79	11	0	70	91	31	0	20	336	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	34	86	12	0	76	99	34	0	22	365	80
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.9	12.3	13.7
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	11%	0%	100%	0%	100%	0%	18%	0%
Vol Thru, %	89%	69%	0%	88%	0%	75%	82%	86%
Vol Right, %	0%	31%	0%	12%	0%	25%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	188	242	31	90	70	122	222	210
LT Vol	168	168	0	79	0	91	181	181
Through Vol	0	74	0	11	0	31	0	29
RT Vol	20	0	31	0	70	0	41	0
Lane Flow Rate	204	263	34	98	76	133	241	228
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.369	0.456	0.076	0.203	0.164	0.261	0.438	0.402
Departure Headway (Hd)	6.506	6.234	8.069	7.468	7.781	7.088	6.533	6.34
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	550	573	447	483	458	503	548	564
Service Time	4.296	4.024	5.769	5.168	5.581	4.887	4.323	4.131
HCM Lane V/C Ratio	0.371	0.459	0.076	0.203	0.166	0.264	0.44	0.404
HCM Control Delay	13.1	14.2	11.4	12.1	12.1	12.4	14.4	13.4
HCM Lane LOS	B	B	B	B	B	B	B	B
HCM 95th-tile Q	1.7	2.4	0.2	0.8	0.6	1	2.2	1.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	41	362	29
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	45	393	32
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	13.9
HCM LOS	B

Lane

Two Way Analysis cannot be performed on an All Way Stop Intersection.

APPENDIX X-5: SIGNAL WARRANT WORKSHEETS

TRAFFIC SIGNAL WARRANTS
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Herondo St	
Minor Street:	Valley Dr/Francisca Ave	
Scenario:	CP AM	
Urban/Rural:	u	(U=urban, R=rural [a])

PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	260	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	330	Minor Street (Higher Volume App.):	247
Major Street Total (Both Approaches):	590	Minor Street Total:	247
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	470

PEAK HOUR VOLUME WARRANT SATISFIED? **NO**

Notes:

a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.

b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.

c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.

d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Herondo St	
Minor Street:	Valley Dr/Francisca Ave	
Scenario:	CP PM	
Urban/Rural:	u	(U=urban, R=rural [a])

PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	372	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	502	Minor Street (Higher Volume App.):	468
Major Street Total (Both Approaches):	874	Minor Street Total:	468
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	330

PEAK HOUR VOLUME WARRANT SATISFIED? **YES**

Notes:

a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.

b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.

c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.

d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Catalina Ave	
Minor Street:	Francisca Ave	
Scenario:	CP AM	
Urban/Rural:	u	(U=urban, R=rural [a])

PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	771	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	416	Minor Street (Higher Volume App.):	43
Major Street Total (Both Approaches):	1,187	Minor Street Total:	43
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	220

PEAK HOUR VOLUME WARRANT SATISFIED? **NO**

Notes:

a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.

b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.

c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.

d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Catalina Ave	
Minor Street:	Francisca Ave	
Scenario:	CP PM	
Urban/Rural:	u	(U=urban, R=rural [a])

PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	480	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	1,014	Minor Street (Higher Volume App.):	63
Major Street Total (Both Approaches):	1,494	Minor Street Total:	63
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	150

PEAK HOUR VOLUME WARRANT SATISFIED? **NO**

Notes:

a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.

b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.

c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.

d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Herondo St	
Minor Street:	Valley Dr/Francisca Ave	
Scenario:	CP AM	
Urban/Rural:	u	(U=urban, R=rural [a])

PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	266	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	337	Minor Street (Higher Volume App.):	267
Major Street Total (Both Approaches):	603	Minor Street Total:	267
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	460

PEAK HOUR VOLUME WARRANT SATISFIED? **NO**

Notes:

a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.

b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.

c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.

d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Herondo St	
Minor Street:	Valley Dr/Francisca Ave	
Scenario:	CP PM	
Urban/Rural:	u	(U=urban, R=rural [a])

PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	380	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	516	Minor Street (Higher Volume App.):	516
Major Street Total (Both Approaches):	896	Minor Street Total:	516
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	320

PEAK HOUR VOLUME WARRANT SATISFIED? **YES**

Notes:

a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.

b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.

c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.

d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Catalina Ave	
Minor Street:	Francisca Ave	
Scenario:	CP AM	
Urban/Rural:	u	(U=urban, R=rural [a])

PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	798	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	441	Minor Street (Higher Volume App.):	44
Major Street Total (Both Approaches):	1,239	Minor Street Total:	44
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	210

PEAK HOUR VOLUME WARRANT SATISFIED? **NO**

Notes:

a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.

b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.

c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.

d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Catalina Ave	
Minor Street:	Francisca Ave	
Scenario:	CP PM	
Urban/Rural:	u	(U=urban, R=rural [a])

PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	516	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	1,076	Minor Street (Higher Volume App.):	64
Major Street Total (Both Approaches):	1,592	Minor Street Total:	64
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	130

PEAK HOUR VOLUME WARRANT SATISFIED? **NO**

Notes:

a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.

b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.

c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.

d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

FEHR PEERS

DRAFT MEMORANDUM

Date: November 4, 2015

To: Aaron Jones & Stacey Kinsella, City of Redondo Beach
From: Michael Kennedy and Amanda Heinke, Fehr & Peers

Subject: ***Caltrans Facility Analysis for Redondo Waterfront Project***

Ref: LA14-2659

This technical memorandum summarizes the results of an analysis conducted of potential effects of the proposed Redondo Waterfront development project on Caltrans facilities.[1] Caltrans was consulted in person on October 13, 2015 to determine the analysis methodologies to be used, and this memorandum summarizes the results of the analysis prepared consistent with the direction given by Caltrans. Three analyses were conducted: (1) mainline freeway segment analyses for a series of mainline segments on the Interstate 405 (I-405) and Interstate 110 (I-110) freeways; (2) ramp intersection LOS and queue analysis at six off ramps on the I-405 freeway; and (3) HCM intersection analysis for study intersections along Pacific Coast Highway (PCH). The Redondo Waterfront Project is a proposed mixed-use project including, retail, restaurant, creative office, specialty cinema, a market hall, and a boutique hotel located in the City of Redondo Beach's Coastal Zone south of Portofino Way, North of Torrance Boulevard, and west of Harbor Drive/Catalina Avenue.

MAINLINE FREEWAY SEGMENT ANALYSIS

Mainline freeway segment analyses were conducted using the *Highway Capacity Manual*[2] (HCM) operational analysis methodology as implemented by the Highway Capacity Software (HCS) software package for the following five segments:

- I-405 between Rosecrans Avenue and Inglewood Avenue
- I-405 between Western Avenue and I-110
- I-110 between I-405 and Torrance Boulevard
- I-110 between Torrance Boulevard and 220th Street

[1] The Draft EIR for the Redondo Waterfront project included a Congestion Management Program (CMP) analysis, which provides methodology and criteria to "identify site-specific impacts and mitigation for the regional highway, freeway, and transit systems…" The CMP establishes a minimum screening threshold for Freeway Mainline Segments of 150 trips in either direction during either the AM or PM peak hours, below which more detailed analysis is not needed and project impacts are deemed to be less than significant. The CMP impact analysis presented in the Draft EIR determined that the Project would not have significant impacts on the I-110 and I-405 freeway mainlines since the Project trips added to the freeways would be below this minimum. Although this analysis was conducted in accordance with the appropriate guidelines, the analyses presented in this memorandum were prepared to provide additional information.

[2] Transportation Research Board, *Highway Capacity Manual*.

- I-110 between Pacific Coast Highway (PCH) and Anaheim Street

The analysis was conducted in accordance with methodologies outlined in the Caltrans *Guide for the Preparation of Traffic Impact Studies*[3] (TIS Guide).

EXISTING AND EXISTING PLUS PROJECT

Freeway mainline volume and speed data was obtained from Caltrans' Performance Measurement System (PeMS) archived traffic data for the AM and PM peak periods for Tuesdays, Wednesdays, and Thursdays in March 2014 for most segments[4] and the data was averaged across the days. Existing and Existing plus Project conditions on the I-405 and I-110 mainline segments are presented in Table 1.

Level of service was determined using the following definitions from the HCM as presented in Appendix C of the Caltrans TIS Guide (note that LOS F is defined as density exceeding 45 passenger cars per mile per lane and average speed below 52.2 miles per hour):

LOS DEFINITIONS FOR BASIC FREEWAY SEGMENTS @ 65 MILES/HOUR

Level of Service	Maximum Density (pc/mi/ln)	Minimum Speed (mph)
A	11	65.0
B	18	65.0
C	26	64.6
D	35	59.7
E	45	52.2

For both Existing and Existing plus Project, during the AM peak hour, all of the northbound analyzed segments on I-405 and I-110, except for I-110 between Anaheim and PCH, operate at congested levels of service (LOS) F, whereas the only the southbound I-110 segments operate at LOS F. During the PM peak hour, all of the southbound segments on the I-405 and I-110 operate at LOS F, whereas the northbound segment on I-405 from I-110 to Western operates at LOS F. With the Project, all of the segments would continue to operate at the same LOS as under Existing conditions. The Project is projected to represent between 0.0% and 0.1% of the Existing plus Project traffic volumes on the segments, depending on location and direction.

CUMULATIVE AND CUMULATIVE PLUS PROJECT

Cumulative future volumes were projected for the future without project scenario (Year 2019).

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[3] California Department of Transportation, *Guide for the Preparation of Traffic Impact Studies*, December 2002.

[4] Specifically, March 4, 5, 6, 11, 12, 13, 18, 19, 20, 25, 26, and 27, 2014, except when data was not available for those dates. The southbound direction of the I-110 freeway had limited detectors and in the absence of data, the upstream volume was used.

The annual growth rate applied to the existing traffic volumes were obtained from the Southern California Association of Government's (SCAG) population growth forecast for the City of Redondo Beach, an average annual growth rate of 0.36%. Population growth rates, rather than traffic growth rates were used to provide a conservative analysis; SCAG forecasts a slight decline in average traffic volumes Citywide.

Fehr & Peers ran the SCAG travel demand model and compared the model-assigned traffic assigned on roadways in the City of Redondo Beach citywide between the base year (2008) and the forecast year (2035). The net change in volumes, was a decline of 2%, due to the transportation infrastructure improvements, land use changes, and policy strategies associated with the RTP and the Sustainable Community Strategy (SCS). Therefore, the use of the population growth rate is considered a conservative worst-case analysis.

While CEQA allows public agencies to rely exclusively upon growth projections for cumulative analyses, the City also incorporated several specific development projects, which results in a highly conservative analysis. In addition to the SCAG population growth rate, traffic estimated to be generated by four development projects in the study area (i.e., Shade Hotel Redondo Beach, Legado Redondo, and Kensington Assisted Living Facility, and the Seabreeze project were also added to the traffic volumes to develop Cumulative Conditions (2019) Without Project.

The distribution of project trips to Caltrans facilities was determined based on input from the SCAG travel demand model. Less than 2% of trips from the Redondo Beach TAZ were found to utilize the I-405 and I-110 freeways. The low allocation of activity at the I-405 freeway was attributed to overly congested conditions of the facility; drivers are avoiding using the I-405 freeway due to the congestion. To be conservative, 5% of the Redondo Waterfront project trips were assigned to the freeways and ramps. Projected future volume demands on the freeway segments incorporating the above factors are shown on Table 2.

The Future Year with Project scenario includes the addition of Redondo Waterfront Project trips obtained from the traffic study conducted by Fehr & Peers in October 2015. The Project is estimated to generate 12,550 daily, 344 AM peak hour, and 782 PM peak hour net new trips.

Table 2 presents the cumulative freeway mainline segment analysis. Every segment that currently operates at LOS F is projected to continue to do so. HCM operational analyses were conducted for each segment that does not currently operate at LOS F (HCS worksheets for these segments are included in Attachment A).

With the Project, all of the segments would continue to operate at the same LOS as under cumulative base conditions. The Project is projected to represent between 0.0% and 0.2% of the projected cumulative traffic volumes on the segments, depending on location and direction.

TABLE 1
EXISTING REDONDO WATERFRONT FREEWAY MAINLINE ANALYSIS

AM Peak Hour

				Existing				Existing with Project				Project	Project % of Total	Change in
Fwy Name	**From**	**To**	**Dir**	**Volume**	**Speed [a]**	**LOS**	**Density**	**Volume**	**Speed [b]**	**LOS**	**Density**	**Volume**	**Cumulative**	**MOE?**
I-405	Inglewood	Rosecrans	NB	8,360	47	F	-	8,364	-	F	-	4	0.0%	No
I-405	I-110	Western	NB	5,513	21	F	-	5,517	-	F	-	4	0.1%	No
I-110	Torrance	I-405	NB	7,240	51	F	-	7,241	-	F	-	1	0.0%	No
I-110	220th	Torrance	NB	6,756	44	F	-	6,757	-	F	-	1	0.0%	No
I-110	Anaheim	PCH	NB	3,919	69	B	15.3	3,920	70	B	15.3	1	0.0%	No
I-405	Rosecrans	Inglewood	SB	6,073	65	C	23.6	6,079	70	C	23.6	6	0.1%	No
I-405	Western	I-110	SB	7,301	63	D	31.7	7,304	63	D	31.7	3	0.0%	No
I-110	I-405	Torrance	SB	5,381	51	F	-	5,382	-	F	-	1	0.0%	No
I-110	Torrance	220th	SB	5,381	51	F	-	5,382	-	F	-	1	0.0%	No
I-110	PCH	Anaheim	SB	5,381	51	F	-	5,382	-	F	-	1	0.0%	No

PM Peak Hour

				Existing				Existing with Project				Project	Project % of Total	Change in
Fwy Name	**From**	**To**	**Dir**	**Volume**	**Speed [a]**	**LOS**	**Density**	**Volume**	**Speed [b]**	**LOS**	**Density**	**Volume**	**Cumulative**	**MOE?**
I-405	Inglewood	Rosecrans	NB	7,019	60	D	29.1	7,028	66	D	29.2	9	0.1%	No
I-405	I-110	Western	NB	6,075	38	F	-	6,084	-	F	-	9	0.1%	No
I-110	Torrance	I-405	NB	5,583	59	C	21.1	5,585	72	C	21.2	2	0.0%	No
I-110	220th	Torrance	NB	4,942	62	C	19.3	4,944	70	C	19.3	2	0.0%	No
I-110	Anaheim	PCH	NB	2,762	68	A	10.8	2,764	70	A	10.8	2	0.1%	No
I-405	Rosecrans	Inglewood	SB	6,030	26	F	-	6,044	-	F	-	14	0.2%	No
I-405	Western	I-110	SB	5,410	21	F	-	5,416	-	F	-	6	0.1%	No
I-110	I-405	Torrance	SB	5,452	36	F	-	5,454	-	F	-	2	0.0%	No
I-110	Torrance	220th	SB	5,452	36	F	-	5,454	-	F	-	2	0.0%	No
I-110	PCH	Anaheim	SB	5,452	36	F	-	5,454	-	F	-	2	0.0%	No

Date : 10-29-2015

Note : Locations with existing operating speeds averaging $\leq$ 52.2 mph are defined as LOS F by the Highway Capacity Manual per the Caltrans Guide for the Preparation of Traffic Impact Studies (Dec 2002).
[a] Existing speed is based on measured speed
[b] Forecasted speed is calculated from the freeway mainline analysis in HCS software

TABLE 2
FUTURE REDONDO WATERFRONT FREEWAY MAINLINE ANALYSIS

AM Peak Hour

				Cumulative				Cumulative with Project				Project	Project % of Total	Change in
Fwy Name	**From**	**To**	**Dir**	**Volume**	**Speed [b]**	**LOS**	**Density**	**Volume**	**Speed [b]**	**LOS**	**Density**	**Volume**	**Cumulative**	**MOE?**
I-405	Inglewood	Rosecrans	NB	8,541	-	F	-	8,545	-	F	-	4	0.0%	No
I-405	I-110	Western	NB	5,632	-	F	-	5,636	-	F	-	4	0.1%	No
I-110	Torrance	I-405	NB	7,396	-	F	-	7,397	-	F	-	1	0.0%	No
I-110	220th	Torrance	NB	6,902	-	F	-	6,903	-	F	-	1	0.0%	No
I-110	Anaheim	PCH	NB	4,004	70	B	15.6	4,005	70	B	15.6	1	0.0%	No
I-405	Rosecrans	Inglewood	SB	6,204	70	C	24.3	6,210	70	C	24.3	6	0.1%	No
I-405	Western	I-110	SB	7,459	62	D	32.8	7,462	62	D	32.8	3	0.0%	No
I-110	I-405	Torrance	SB	5,497	-	F	-	5,498	-	F	-	1	0.0%	No
I-110	Torrance	220th	SB	5,497	-	F	-	5,498	-	F	-	1	0.0%	No
I-110	PCH	Anaheim	SB	5,497	-	F	-	5,498	-	F	-	1	0.0%	No

PM Peak Hour

				Cumulative				Cumulative with Project				Project	Project % of Total	Change in
Fwy Name	**From**	**To**	**Dir**	**Volume**	**Speed [b]**	**LOS**	**Density**	**Volume**	**Speed [b]**	**LOS**	**Density**	**Volume**	**Cumulative**	**MOE?**
I-405	Inglewood	Rosecrans	NB	7,171	65	D	30.1	7,180	65	D	30.2	9	0.1%	No
I-405	I-110	Western	NB	6,206	-	F	-	6,215	-	F	-	9	0.1%	No
I-110	Torrance	I-405	NB	5,704	72	C	21.7	5,706	72	C	21.7	2	0.0%	No
I-110	220th	Torrance	NB	5,049	70	C	19.8	5,051	70	C	19.8	2	0.0%	No
I-110	Anaheim	PCH	NB	2,822	70	A	11.0-	2,824	70	A	11.0	2	0.1%	No
I-405	Rosecrans	Inglewood	SB	6,160	-	F	-	6,174	-	F	-	14	0.2%	No
I-405	Western	I-110	SB	5,526	-	F	-	5,532	-	F	-	6	0.1%	No
I-110	I-405	Torrance	SB	5,570	-	F	-	5,572	-	F	-	2	0.0%	No
I-110	Torrance	220th	SB	5,570	-	F	-	5,572	-	F	-	2	0.0%	No
I-110	PCH	Anaheim	SB	5,570	-	F	-	5,572	-	F	-	2	0.0%	No

Date : 10-29-2015

Note : Locations with existing operating speeds averaging $\leq$ 52.2 mph are defined as LOS F by the Highway Capacity Manual per the Caltrans Guide for the Preparation of Traffic Impact Studies (Dec 2002).
[a] Existing speed is based on measured speed
[b] Forecasted speed is calculated from the freeway mainline analysis in HCS software

RAMP QUEUE ANALYSIS

In response to a request from Caltrans, a level of service (LOS) and freeway ramp queuing analysis was conducted at six freeway ramp locations to determine future LOS and queuing conditions at the off-ramps as a result of traffic from the proposed project. Level of service calculations and queue lengths were estimated using Synchro traffic analysis software package. Each intersection is configured according to its existing (and future, if applicable) arrival conditions, including signal timing and physical geometry.

The focus of the queuing analysis is to specifically determine if there is adequate storage capacity at the off ramps. An impact is considered significant if the off-ramp queue extends beyond the length of the ramp itself onto the mainline of the freeway during the peak arrival period and the project contributes to such an exceedance.

The LOS and queuing analysis was conducted for the following intersections and respective off-ramps:

- Inglewood Avenue & I-405 Northbound Ramps
- Inglewood Avenue & I-405 Southbound Ramps
- I-405 Southbound Ramps & Artesia Boulevard (unsignalized)
- I-405 Northbound Ramps & Artesia Boulevard
- Crenshaw Boulevard & I-405 Northbound Ramps
- Crenshaw Boulevard & I-405 Southbound Ramps

Four scenarios were tested for the AM and PM weekday peak hours:

- Existing baseline (Year 2013)
- Existing plus project
- Cumulative without Project (Year 2019)
- Cumulative with Project (Year 2019)

LEVEL OF SERVICE

Table 3 presents a summary of LOS summary of ramp intersections under HCM methodology. All ramp intersections would operate at LOS D or better with the project during both peak hours for all scenarios of the project. Detailed LOS calculations are provided in Attachment B.

QUEUING ANALYSIS

Table 4 presents a summary of the ramp queuing analysis for all project scenarios. The 95th percentile queues were reported for the purposes of this analysis. The freeway ramps queues would not extend beyond the storage length under any existing or cumulative scenarios with the project, therefore impacts would be less than significant. Detailed queue calculations are provided in Attachment C.

TABLE 3
RAMP INTERSECTION HCM LEVEL OF SERVICE

Intersection	Peak Period	Existing		Existing plus Project		Cumulative		Cumulative plus Project	
		LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)
1. Inglewood Ave & I-405 NB Ramps	AM	B	12.3	B	12.3	B	12.8	B	12.8
	PM	B	14.6	B	14.6	B	15.0	B	15.0
2. Inglewood Ave & I-405 SB Ramps	AM	B	10.1	B	10.1	B	10.3	B	10.3
	PM	C	21.2	C	22.6	C	24.0	C	25.7
3. I-405 SB Ramps & Artesia Blvd [a]	AM	B	11.4	B	11.4	B	11.5	B	11.5
	PM	D	31.5	D	31.5	D	34.6	D	34.6
4. I-405 NB Ramps & Artesia Blvd	AM	B	12.6	B	12.6	B	12.9	B	13.0
	PM	B	13.5	B	13.6	B	13.7	B	13.8
5. Crenshaw Blvd & I-405 SB Ramps	AM	D	43.3	D	43.4	D	44.9	D	45.0
	PM	C	25.0	C	25.1	C	25.9	C	26.0
6. I-405 NB Ramps & 182nd St	AM	B	15.5	B	15.5	B	15.8	B	15.8
	PM	D	45.1	D	45.9	D	50.1	D	51.0

Note: Intersections operating at LOS E or F are noted in **Bold.**
[a] For unsignalized intersections, delay from the worst case approach was reported.

TABLE 4
RAMP QUEUEING SUMMARY

	Storage Queue Length (feet)	Direction Approach	Peak Hour	Existing (feet)	Existing plus Project (feet)	Cumulative (feet)	Cumulative plus Project (feet)
1. Inglewood Ave & I-405 NB Ramps	1,345	WB	AM	282	282	291	291
			PM	384	384	397	397
2. Inglewood Ave & I-405 SB Ramps	1,265	EB	AM	285	287	295	299
			PM	353	363	370	385
3. I-405 SB Ramps & Artesia Blvd	1,135	NB	AM	25	25	26	26
			PM	213	213	233	233
4. I-405 NB Ramps & Artesia Blvd	1,135	SB	AM	163	164	166	165
			PM	336	340	355	359
5. Crenshaw Blvd & I-405 SB Ramps	1,275	EB	AM	817	817	869	869
			PM	635	635	674	691
6. I-405 NB Ramps & 182nd St	1,085	NB	AM	235	236	241	241
			PM	410	413	421	425

PCH LEVEL OF SERVICE

HCM RESULTS

Per Caltrans TIS Guidelines, intersections on PCH were analyzed using HCM analysis methodology. Table 5 displays the HCM results for all project scenarios. While Caltrans' TIS guidelines provide screening criteria to determine whether a Traffic Impact Study is needed, their guidance does not provide criteria to determine whether the project's trip generation should be considered "significant." . As such, the City of Redondo Beach and City of Torrance significance criteria were utilized for the impact analysis. The following ICU analysis displays the intersection locations for significant impacts. Detailed LOS calculations are provided in Appendix X-4 in the *Redondo Waterfront Traffic Impact Study*, October 2015.

Based on the HCM analysis, the following two signalized intersections are projected to operate at LOS E or F during one or both peak hours under all scenarios:

7) PCH/Catalina Avenue & Herondo Street/Anita Street (PM peak hour)

36) PCH & Palos Verdes Boulevard (PM peak hours)

The PCH & Torrance intersection (#26) is projected to operate at LOS E during the PM peak hour under Cumulative plus Project conditions.

TABLE 5
HCM LEVEL OF SERVICE
PCH SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Existing		Existing plus Project		Cumulative		Cumulative plus Project	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	AM	D	44.8	D	45.6	D	46.8	D	49.9
	PM	**E**	**57.2**	**E**	**71.3**	**E**	**59.4**	**E**	**70.4**
10. Pacific Coast Hwy & Catalina Ave	AM	B	18.6	C	20.3	B	18.3	B	19.2
	PM	B	13.5	B	16	B	11.5	B	13.7
19. Pacific Coast Hwy & Beryl St	AM	A	10.0	B	10.8	B	10.3	B	11.1
	PM	B	15.7	B	18.1	B	17.0	B	19.9
24. Pacific Coast Hwy & Garnet St	AM	A	5.0	A	5.0	A	5.1	A	5.1
	PM	A	4.8	A	4.8	A	4.9	A	4.9
26. Pacific Coast Hwy & Torrance Blvd	AM	D	38.3	D	39.8	D	40.8	D	42.9
	PM	D	47.3	D	54.7	D	51.7	**E**	**62.3**
31. Pacific Coast Hwy & Sapphire St/Francisca Ave	AM	A	4.9	A	4.9	A	5.0	A	5.0
	PM	A	6.8	A	6.9	A	7.1	A	7.2
34. Pacific Coast Hwy & Knob Hill Ave	AM	A	9.7	A	9.6	A	9.9	A	9.9
	PM	B	12.1	B	12.1	B	12.6	B	12.7
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	48.8	D	50.6	D	52.5	D	54.3
	PM	**E**	**68.4**	**E**	**76.2**	**E**	**70.3**	**E**	**76.3**
37. Pacific Coast Hwy & 2nd St	AM	B	18.1	B	18.4	B	18.9	B	19.2

TABLE 5
HCM LEVEL OF SERVICE
PCH SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Existing		Existing plus Project		Cumulative		Cumulative plus Project	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
	PM	B	16.9	B	17.7	C	26.2	C	28.1
38. Pacific Coast Hwy & 10th/Aviation	AM	C	27.3	C	27.3	C	28.0	C	28.0
	PM	D	41.9	D	41.5	C	33.2	C	33.5
39. Pacific Coast Hwy & Pier/14th St	AM	B	16.0	B	15.9	B	16.2	B	16.1
	PM	C	20.8	C	20.7	C	21.0	C	21.0
40. Pacific Coast Hwy & 16th St	AM	B	13.1	B	13.1	B	13.2	B	13.2
	PM	B	15.7	B	15.7	B	17.6	B	17.5
41. Pacific Coast Hwy & Prospect Ave	AM	C	30.3	C	30.6	C	31.1	C	31.5
	PM	C	34.0	D	36.1	D	35.3	D	37.8

Note: Intersections operating at LOS E or F are noted in **Bold.** This information should not, however, be confused with the project's significance conclusions, which are dependent upon the project's contribution in the ICU analysis.

ICU RESULTS

Table 6 summarizes the results of the AM and PM peak hour signalized intersection LOS analysis for Existing plus Project conditions, using the ICU methodology, as required by the City of Redondo Beach. To determine the Project's impacts under existing conditions, the City compared (1) the Existing (2013) plus Project Conditions scenario, against (2) the Existing (2013) Conditions scenario. As shown in Table 6, after applying the City of Redondo Beach significant impact criteria detailed in Chapter 1, the Project is expected to result in significant traffic impacts to the following five study intersections under the PM peak hour of Existing plus Project conditions:

7) PCH/Catalina Avenue & Herondo Street/Anita Street

10) PCH & Catalina Avenue

19) PCH & Beryl Street

26) PCH & Torrance Boulevard

36) PCH & Palos Verdes Boulevard

Per City of Torrance methodology for PCH & Palos Verdes Boulevard and PCH & Prospect Avenue intersections, both ICU and HCM signalized analysis are subject to significant criteria. Based on Torrance impact criteria for the HCM signalized methodology, presented above in Table 5, a significant Project impact is also expected in the PM peak hour at Intersection 36, PCH and Palos Verdes Boulevard, under both Existing plus Project and Cumulative plus Project scenarios. Detailed LOS calculations are provided in Appendix X-4 in the *Redondo Waterfront Traffic Impact Study*, October 2015.

TABLE 6
EXISTING PLUS PROJECT CONDITIONS LEVEL OF SERVICE
SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Existing		Existing plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	AM	D	0.885	D	0.896	0.011	NO
	PM	**E**	**0.944**	**F**	**1.003**	0.059	**YES**
10. Pacific Coast Hwy & Catalina Ave	AM	D	0.855	D	0.866	0.011	NO
	PM	D	0.883	**E**	**0.906**	0.023	**YES**
19. Pacific Coast Hwy & Beryl St	AM	C	0.757	C	0.767	0.010	NO
	PM	**E**	**0.901**	**E**	**0.929**	0.028	**YES**
24. Pacific Coast Hwy & Garnet St	AM	B	0.691	B	0.693	0.002	NO
	PM	B	0.663	B	0.666	0.003	NO
25. Catalina Ave & Torrance Blvd	AM	A	0.424	A	0.450	0.026	NO
	PM	A	0.475	A	0.516	0.041	NO
26. Pacific Coast Hwy & Torrance Blvd	AM	D	0.818	D	0.829	0.011	NO
	PM	D	0.848	D	0.881	0.033	**YES**
31. Pacific Coast Hwy & Sapphire St/Francisca Ave	AM	B	0.611	B	0.620	0.009	NO
	PM	B	0.650	B	0.664	0.014	NO
34. Pacific Coast Hwy & Knob Hill Ave	AM	B	0.655	B	0.663	0.008	NO
	PM	B	0.698	C	0.712	0.014	NO
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	0.850	D	0.860	0.010	NO
	PM	**E**	**0.957**	**E**	**0.978**	0.021	**YES**
37. Pacific Coast Hwy & 2nd St	AM	B	0.695	C	0.702	0.007	NO
	PM	B	0.696	C	0.715	0.019	NO
38. Pacific Coast Hwy & 10th/Aviation	AM	C	0.777	C	0.783	0.006	NO
	PM	C	0.743	C	0.762	0.019	NO
39. Pacific Coast Hwy & Pier/14th St	AM	A	0.565	A	0.571	0.006	NO
	PM	C	0.703	C	0.723	0.020	NO
40. Pacific Coast Hwy & 16th St	AM	A	0.526	A	0.532	0.006	NO
	PM	B	0.636	B	0.655	0.019	NO
41. Pacific Coast Hwy & Prospect Ave	AM	C	0.704	C	0.711	0.007	NO
	PM	C	0.775	C	0.793	0.018	NO

Note: Intersections operating at LOS E or F are noted in **Bold.**

Table 7 summarizes the results of the AM and PM peak hour signalized intersection LOS analysis for Cumulative plus Project conditions. To determine the Project's impacts under cumulative conditions, the City compared: (1) the Cumulative plus Project Conditions (2019) scenario, against (2) the Cumulative Conditions (2019) Without Project scenario. As shown in Table 7, after applying the City of Redondo Beach significant impact criteria detailed in Chapter 1 the Project is expected to result in significant traffic impacts to the following five study intersections under Cumulative plus Project conditions:

7) PCH/Catalina Avenue & Herondo Street/Anita Street (both peak hours)

10) PCH & Catalina Avenue (PM peak hour)

19) PCH & Beryl Street (PM peak hour)

26) PCH & Torrance Boulevard (PM peak hour)

36) PCH & Palos Verdes Boulevard (PM peak hour)

TABLE 7
CUMULATIVE PLUS PROJECT CONDITIONS LEVEL OF SERVICE
SIGNALIZED INTERSECTIONS

Intersection	Peak Period	Cumulative		Cumulative plus Project		Change in V/C	Significant Impact?
		LOS	V/C	LOS	V/C		
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	AM	**E**	**0.918**	**E**	**0.936**	0.018	**YES**
	PM	**F**	**1.022**	**F**	**1.070**	0.048	**YES**
10. Pacific Coast Hwy & Catalina Ave	AM	D	0.878	D	0.889	0.011	NO
	PM	**E**	**0.912**	**E**	**0.934**	0.022	**YES**
19. Pacific Coast Hwy & Beryl St	AM	C	0.777	C	0.787	0.010	NO
	PM	**E**	**0.932**	**E**	**0.960**	0.028	**YES**
24. Pacific Coast Hwy & Garnet St	AM	C	0.711	C	0.712	0.001	NO
	PM	B	0.686	B	0.689	0.003	NO
26. Pacific Coast Hwy & Torrance Blvd	AM	D	0.848	D	0.860	0.012	NO
	PM	D	0.892	**E**	**0.925**	0.033	**YES**
31. Pacific Coast Hwy & Sapphire St/Francisca Ave	AM	B	0.635	B	0.644	0.009	NO
	PM	B	0.678	B	0.692	0.014	NO
34. Pacific Coast Hwy & Knob Hill Ave	AM	B	0.682	B	0.691	0.009	NO
	PM	C	0.736	C	0.750	0.014	NO
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	0.877	D	0.887	0.010	NO
	PM	**F**	**1.001**	**F**	**1.024**	0.023	**YES**
37. Pacific Coast Hwy & 2nd St	AM	C	0.707	C	0.714	0.007	NO
	PM	C	0.717	C	0.737	0.020	NO
38. Pacific Coast Hwy & 10th/Aviation	AM	C	0.792	C	0.798	0.006	NO
	PM	C	0.757	C	0.776	0.019	NO
39. Pacific Coast Hwy & Pier/14th St	AM	A	0.574	A	0.581	0.007	NO
	PM	C	0.717	C	0.737	0.020	NO
40. Pacific Coast Hwy & 16th St	AM	A	0.536	A	0.543	0.007	NO
	PM	B	0.647	B	0.667	0.020	NO
41. Pacific Coast Hwy & Prospect Ave	AM	C	0.724	C	0.732	0.008	NO
	PM	D	0.803	D	0.820	0.017	NO

Note: Intersections operating at LOS E or F are noted in **Bold.** [a] Harbor Dr & Pacific Ave was not analyzed for Cumulative without Project Conditions because it will only function as a full intersection with the Project.

MITIGATIONS

The following details the measures developed to mitigate significant Project impacts. Caltrans is the lead agency responsible for Pacific Coast Highway. If Caltrans determines that the mitigation measures for intersections 7, 10, 19, 26 and 36 are infeasible, and equally effective alternative mitigation measures are not identified, significant and unavoidable impacts would remain.

- Pacific Coast Highway & Herondo/Anita Street (Intersection 7) – Under this mitigation measure, an additional westbound and eastbound through lane would be added. For the westbound approach, the center raised median would be narrowed or eliminated. The two westbound left turn lanes would be shifted to the south to accommodate the additional westbound through lane. An additional westbound receiving lane would be added extending for a minimum of half a block length to the west of Intersection 7. The additional eastbound through lane would need to extend for a minimum of half the block length to the west of Intersection 7. The on-street angled parking on Herondo Street conflicts with the additional eastbound and westbound lane, and will require their removal. Parking will be replaced at 1:1 ratio to the satisfaction of the City Engineer. In addition, the on-street bike lanes would be shifted from their current location, but can be accommodated with the addition of the two through lanes.

  These measures would fully mitigate the AM and PM peak hour Project impact under Existing plus Project and Cumulative plus Project conditions.

- Pacific Coast Highway & Catalina Avenue (Intersection 10) – One additional eastbound left turn lane would be added to provide two left turn lanes onto Pacific Coast Highway northbound. The intersection would also be restriped to provide one shared left-right lane, for a total of three lanes on the eastbound approach.

  These measures would fully mitigate the PM peak hour Project impact under Existing plus Project and Cumulative plus Project conditions.

- Pacific Coast Highway & Beryl Street (Intersection 19) -The proposed mitigation measure would add a southbound dedicated right-turn lane. This additional lane would encroach into the existing sidewalk right-of-way of the Gertruda Avenue cul-de-sac, and require the removal of mature trees that line the western side of the street. The sidewalk would need to be reconstructed to the west of its current location, which would narrow the end of the cul-de-sac.

  This measure would fully mitigate the significant PM peak hour Project impact under Existing plus Project and Cumulative plus Project conditions.

- Pacific Coast Highway & Torrance Boulevard Avenue (Intersection 26) -A northbound, and an eastbound right-turn lane would be added at this intersection to mitigate the Project's impact. The northbound right-turn lane is an approved Project identified as mitigation from a prior Project in the City, and therefore, the applicant would provide a fair share contribution for this improvements. The eastbound right-turn lane would be fully-funded by the Project. The

eastbound right-turn lane can be accommodated through restriping the outer eastbound lane on Torrance Boulevard, which measures 24'.

This mitigation would fully mitigate the impact at this intersection.

- Pacific Coast Highway & Palos Verdes Drive (Intersection 36) -This mitigation measure would add a southbound right-turn lane. The applicant shall provide a fair share percentage of contribution to this mitigation measure along with other development projects that would impact this intersection.

  This mitigation would fully mitigate the impact at this intersection based on the analysis with the ICU methodology for Existing plus Project and Cumulative plus Project conditions using Redondo Beach, CMP, and City of Torrance criteria. Appendix X-6 contains the analysis results using the HCM signalized intersection methodology. The mitigation measure is expected to reduce average delay at the intersection to levels below baseline conditions (both Existing and the Cumulative Base) and would therefore fully mitigate the impact based on City of Torrance impact criteria for the HCM analysis methodology.

Tables 8 and 9 present the intersection LOS results for the Mitigated Existing plus Project and Cumulative plus Project scenarios using the ICU methodology. Significant and unavoidable impacts remain in the PM peak hour at Intersection 7 (Pacific Coast Highway & Herondo Street/Anita Street) under Existing plus Project conditions as detailed above. All other intersections will be mitigated to a level below significance.

Tables 10 presents the results of the testing of the mitigation measures using the HCM signalized methodology as required by Caltrans. Detailed LOS calculations are provided in Appendix X-4 in the *Redondo Waterfront Traffic Impact Study*, October 2015.

TABLE 8
EXISTING PLUS PROJECT PLUS MITIGATION
LEVEL OF SERVICE & IMPACT ANALYSIS (ICU METHODOLOGY)

Intersection	Peak Period	Existing		Existing plus Project plus Mitigation		Change in V/C	Significant Impact
		LOS	V/C	LOS	V/C		
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	AM	D	0.885	D	0.896	0.011	NO
	PM	**E**	**0.944**	**F**	**1.003**	0.059	**YES**
10. Pacific Coast Hwy & Catalina Ave	AM	D	0.855	C	0.799	-0.056	NO
	PM	D	0.883	D	0.856	-0.027	NO
19. Pacific Coast Hwy & Beryl St	AM	C	0.757	C	0.767	0.010	NO
	PM	**E**	**0.901**	**E**	**0.908**	0.007	NO
26. Pacific Coast Hwy & Torrance Blvd	AM	D	0.818	C	0.792	-0.026	NO
	PM	D	0.848	D	0.849	0.001	NO
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	0.850	D	0.815	-0.035	NO
	PM	**E**	**0.957**	D	0.867	-0.090	NO

Note: Intersections operating at LOS E or F are noted in **Bold.**

TABLE 9
CUMULATIVE PLUS PROJECT PLUS MITIGATION
LEVEL OF SERVICE & IMPACT ANALYSIS (ICU METHODOLOGY)

Intersection	Peak Period	Cumulative		Cumulative plus Project plus Mitigation		Change in V/C	Significant Impact
		LOS	V/C	LOS	V/C		
6. Valley Dr/Francisca Ave & Herondo St	AM	C	16.6	A	0.496	--	NO
	PM	**E**	**43.3**	C	0.743	--	NO
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	AM	**E**	**0.918**	**E**	**0.919**	0.001	NO
	PM	**F**	**1.022**	**E**	**0.978**	-0.044	NO
10. Pacific Coast Hwy & Catalina Ave	AM	D	0.878	D	0.820	-0.058	NO
	PM	**E**	**0.912**	D	0.883	-0.029	NO
19. Pacific Coast Hwy & Beryl St	AM	C	0.777	C	0.787	0.010	NO
	PM	**E**	**0.932**	**E**	**0.938**	0.006	NO
26. Pacific Coast Hwy & Torrance Blvd	AM	D	0.848	D	0.818	-0.030	NO
	PM	D	0.892	D	0.891	-0.001	NO
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	0.878	D	0.849	-0.029	NO
	PM	**E**	**0.997**	**E**	**0.905**	-0.092	NO

Note: Intersections operating at LOS E or F are noted in **Bold.**

TABLE 10
HCM LEVEL OF SERVICE
PCH SIGNALIZED INTERSECTIONS PLUS MITIGATION

Intersection	Peak Period	Existing		Existing plus Project plus Mitigation		Cumulative		Cumulative plus Project plus Mitigation	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
7. Pacific Coast Hwy/Catalina Ave & Herondo St/Anita St	AM	D	44.8	D	45.2	D	46.8	D	44.1
	PM	**E**	**57.2**	**E**	**56.8**	**E**	**59.4**	**E**	**55.4**
10. Pacific Coast Hwy & Catalina Ave	AM	B	18.6	B	15.6	B	18.3	B	15.8
	PM	B	13.5	B	14.4	B	11.5	B	11.9
19. Pacific Coast Hwy & Beryl St	AM	A	10.0	B	11.2	B	10.3	B	11.5
	PM	B	15.7	B	17.5	B	17.0	B	19.1
26. Pacific Coast Hwy & Torrance Blvd	AM	D	38.3	D	38.1	D	40.8	D	40.1
	PM	D	47.3	D	46.1	D	51.7	D	53.5
36. Pacific Coast Hwy & Palos Verdes Blvd	AM	D	48.8	B	46.6	D	52.5	D	50.4
	PM	**E**	**68.4**	**D**	**50.2**	**E**	**70.3**	**E**	**57.1**

Note: Intersections operating at LOS E or F are noted in **Bold. .** This information should not, however, be confused with the project's significance conclusions, which are dependent upon the project's contribution in the ICU analysis.

CONCLUSIONS

The freeway mainline analysis indicates that, with the addition of Redondo Waterfront project-generated trips, all of the segments would continue to operate at the same LOS as under existing and cumulative base conditions. For both Existing plus Project and Cumulative plus Project, the Project is projected to represent between 0.0% and 0.2% of the projected cumulative traffic volumes on the segments, depending on location and direction.

The queuing analysis indicates that, with the addition of project-generated trips at the freeway ramps, the queue lengths on the I-405 freeway would be accommodated by the storage length of the ramps for all analysis scenarios. In addition, all ramp intersections would operate at LOS D or better during both peak hours for all scenarios of the project and impacts would be less than significant.

Under ICU methodology, the project would impact five intersections under Existing plus Project and six intersections under Cumulative plus project. These impacts would be mitigated for all intersections, except for the PCH/Catalina Avenue & Herondo Street/Anita Street under Existing plus Project conditions during the PM peak hour.

Under HCM methodology, the following two signalized intersections are projected to operate at LOS E or F during one or both peak hours under all scenarios:

7) PCH/Catalina Avenue & Herondo Street/Anita Street (PM peak hour)

36) PCH & Palos Verdes Boulevard (PM peak hours)

In addition, the PCH & Torrance intersection (#26) is projected to operate at LOS E during the PM peak hour under Cumulative plus Project conditions.

After mitigations, intersections #7 and #36 would continue to operate at LOS E for Existing plus Project and Cumulative plus Project scenarios. And intersection #26 would operate at LOS D after mitigation under HCM methodology for Existing plus Project and Cumulative plus Project scenarios.

ATTACHMENT A

HIGHWAY CAPACITY SOFTWARE HCM WORKSHEETS FOR FREEWAY MAINLINE SEGMENTS

EXISTING

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_NB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	8360	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	2223	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2279	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	2279	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	56.9	mi/h
Number of lanes, N	4	
Density, D	40.1	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_NB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	5513	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1466	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1503	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1503	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.9	mi/h
Number of lanes, N	4	
Density, D	21.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_NB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	7239	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1925	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1973	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1973	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	4	
Density, D	30.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_NB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	6755	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1797	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1841	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1841	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.2	mi/h
Number of lanes, N	4	
Density, D	28.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/14/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_NB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	3919	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1042	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1068	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1068	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	15.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_SB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	6072	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1615	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1655	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1655	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	70.3	mi/h
Number of lanes, N	4	
Density, D	23.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_SB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	7301	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1942	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1990	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1990	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.8	mi/h
Number of lanes, N	4	
Density, D	31.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_SB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	5380	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1431	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1955	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1955	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.4	mi/h
Number of lanes, N	3	
Density, D	30.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_SB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	5380	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1431	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1955	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1955	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.4	mi/h
Number of lanes, N	3	
Density, D	30.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/14/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_SB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	5380	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1431	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1467	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1467	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.2	mi/h
Number of lanes, N	4	
Density, D	21.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_NB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	7019	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1867	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1913	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1913	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	65.8	mi/h
Number of lanes, N	4	
Density, D	29.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_NB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	6074	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1615	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1656	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1656	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.6	mi/h
Number of lanes, N	4	
Density, D	24.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_NB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	5582	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1485	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1522	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1522	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	72.0	mi/h
Number of lanes, N	4	
Density, D	21.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
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Date Performed:	10/2/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_NB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	4942	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1314	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1347	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1347	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.7	mi/h
Number of lanes, N	4	
Density, D	19.3	pc/mi/ln
Level of service, LOS	C	

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Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/14/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_NB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	2762	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	735	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	753	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	753	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	10.8	pc/mi/ln
Level of service, LOS	A	

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_SB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	6029	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1603	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1644	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1644	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	70.4	mi/h
Number of lanes, N	4	
Density, D	23.3	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_SB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	5409	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1439	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1475	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1475	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.1	mi/h
Number of lanes, N	4	
Density, D	21.3	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_SB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	5452	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1450	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1982	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1982	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	3	
Density, D	31.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/2/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_SB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	5452	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1450	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1982	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1982	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	3	
Density, D	31.5	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/14/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_SB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2013
Description:	

Flow Inputs and Adjustments

Volume, V	5452	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1450	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1486	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1486	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.1	mi/h
Number of lanes, N	4	
Density, D	21.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_NB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	8364	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	2224	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2280	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	2280	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	56.9	mi/h
Number of lanes, N	4	
Density, D	40.1	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_NB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	5517	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1467	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1504	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1504	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.9	mi/h
Number of lanes, N	4	
Density, D	21.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_NB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	7241	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1926	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1974	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1974	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	4	
Density, D	30.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_NB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	6757	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1797	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1842	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1842	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	65.2	mi/h
Number of lanes, N	4	
Density, D	28.2	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_NB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	3920	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1043	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1069	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1069	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	15.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_SB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	6079	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1617	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1657	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1657	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	70.2	mi/h
Number of lanes, N	4	
Density, D	23.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_SB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	7304	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1943	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1991	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1991	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.7	mi/h
Number of lanes, N	4	
Density, D	31.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_SB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	5382	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1431	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1956	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1956	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.4	mi/h
Number of lanes, N	3	
Density, D	30.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_SB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	5382	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1431	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1956	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1956	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	63.4	mi/h
Number of lanes, N	3	
Density, D	30.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_SB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	5382	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1431	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1467	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1467	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.2	mi/h
Number of lanes, N	4	
Density, D	21.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_NB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	7028	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1869	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1916	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1916	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	65.7	mi/h
Number of lanes, N	4	
Density, D	29.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

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E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_NB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	6084	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1618	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1659	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1659	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.6	mi/h
Number of lanes, N	4	
Density, D	24.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_NB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	5585	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1485	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1523	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1523	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	72.0	mi/h
Number of lanes, N	4	
Density, D	21.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_NB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	4944	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1315	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1348	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1348	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.7	mi/h
Number of lanes, N	4	
Density, D	19.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_NB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	2764	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	735	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	753	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	753	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	10.8	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_SB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	6044	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1607	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1648	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1648	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	70.4	mi/h
Number of lanes, N	4	
Density, D	23.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_SB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	5416	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1440	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1476	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1476	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.1	mi/h
Number of lanes, N	4	
Density, D	21.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_SB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	5454	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1451	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1982	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1982	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	3	
Density, D	31.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_SB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	5454	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1451	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1982	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1982	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	3	
Density, D	31.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/27/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_SB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2014
Description:	

Flow Inputs and Adjustments

Volume, V	5454	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1451	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1487	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1487	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.0	mi/h
Number of lanes, N	4	
Density, D	21.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

FUTURE 2019 WITHOUT PROJECT

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_NB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	8541	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	2272	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2328	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	2328	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	55.5	mi/h
Number of lanes, N	4	
Density, D	42.0	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_NB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5632	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1498	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1535	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1535	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.7	mi/h
Number of lanes, N	4	
Density, D	22.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_NB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	7396	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1967	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2016	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	2016	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	63.6	mi/h
Number of lanes, N	4	
Density, D	31.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_NB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	6902	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1836	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1882	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1882	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.6	mi/h
Number of lanes, N	4	
Density, D	29.1	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/14/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_NB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	4004	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1065	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1092	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1092	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	15.6	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_SB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	6204	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1650	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1691	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1691	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	69.7	mi/h
Number of lanes, N	4	
Density, D	24.3	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_SB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	7459	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1984	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2033	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	2033	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.0	mi/h
Number of lanes, N	4	
Density, D	32.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_SB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5497	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1462	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1998	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1998	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.6	mi/h
Number of lanes, N	3	
Density, D	31.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_SB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5497	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1462	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1998	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1998	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.6	mi/h
Number of lanes, N	3	
Density, D	31.9	pc/mi/ln
Level of service, LOS	D	

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/14/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_SB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5497	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1462	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1499	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1499	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.0	mi/h
Number of lanes, N	4	
Density, D	21.7	pc/mi/ln
Level of service, LOS	C	

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_NB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	7171	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1907	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1955	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1955	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	4	
Density, D	30.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_NB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	6206	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1651	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1692	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1692	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.2	mi/h
Number of lanes, N	4	
Density, D	25.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_NB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5704	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1517	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1555	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1555	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	71.6	mi/h
Number of lanes, N	4	
Density, D	21.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_NB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5049	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1343	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1376	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1376	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	4	
Density, D	19.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/14/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_NB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	2822	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	751	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	769	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	769	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	11.0-	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_SB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	6160	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1638	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1679	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1679	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	4	
Density, D	24.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

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E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_SB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5526	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1470	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1506	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1506	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.9	mi/h
Number of lanes, N	4	
Density, D	21.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_SB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5570	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1481	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2025	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	2025	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.1	mi/h
Number of lanes, N	3	
Density, D	32.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/12/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_SB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5570	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1481	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2025	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	2025	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.1	mi/h
Number of lanes, N	3	
Density, D	32.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/14/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_SB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5570	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1481	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1518	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1518	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.8	mi/h
Number of lanes, N	4	
Density, D	22.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

FUTURE 2019 WITH PROJECT

HCS 2010: Basic Freeway Segments Release 6.60

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_NB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	8545	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	2273	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2329	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	2329	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	55.4	mi/h
Number of lanes, N	4	
Density, D	42.0	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_NB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5636	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1499	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1536	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1536	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.7	mi/h
Number of lanes, N	4	
Density, D	22.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_NB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	7397	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1967	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2016	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	2016	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	63.6	mi/h
Number of lanes, N	4	
Density, D	31.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_NB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	6903	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1836	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1882	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1882	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	64.6	mi/h
Number of lanes, N	4	
Density, D	29.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_NB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	4005	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1065	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1092	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1092	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	15.6	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_SB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	6210	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1652	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1693	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1693	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	69.7	mi/h
Number of lanes, N	4	
Density, D	24.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-405_SB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	7462	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1985	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2034	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	2034	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	61.9	mi/h
Number of lanes, N	4	
Density, D	32.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_SB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5498	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1462	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1998	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1998	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.6	mi/h
Number of lanes, N	3	
Density, D	31.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_SB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5498	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1462	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1998	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1998	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.6	mi/h
Number of lanes, N	3	
Density, D	31.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	7-8 AM
Freeway/Direction:	I-110_SB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5498	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1462	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1499	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1499	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.0	mi/h
Number of lanes, N	4	
Density, D	21.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_NB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	7180	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1910	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1957	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1957	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	4	
Density, D	30.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_NB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	6215	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1653	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1694	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1694	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	67.2	mi/h
Number of lanes, N	4	
Density, D	25.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

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E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_NB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5706	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1518	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1555	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1555	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	71.6	mi/h
Number of lanes, N	4	
Density, D	21.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_NB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5051	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1343	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1377	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1377	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	69.6	mi/h
Number of lanes, N	4	
Density, D	19.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_NB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	2824	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	751	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	770	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	770	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	11.0	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_SB
From/To:	Inglewood_Rosecrans
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	6174	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1642	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1683	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	75.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	75.0	mi/h

LOS and Performance Measures

Flow rate, vp	1683	pc/h/ln
Free-flow speed, FFS	75.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	4	
Density, D	24.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-405_SB
From/To:	I-110_Western
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5532	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1471	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1508	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1508	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.9	mi/h
Number of lanes, N	4	
Density, D	21.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_SB
From/To:	Torrance_I-405
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5572	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1482	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2025	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	2025	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.1	mi/h
Number of lanes, N	3	
Density, D	32.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_SB
From/To:	220th_Torrance
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5572	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1482	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	2025	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	2025	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	62.1	mi/h
Number of lanes, N	3	
Density, D	32.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.60

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Michael Kao
Agency or Company:	Fehr & Peers
Date Performed:	10/22/2015
Analysis Time Period:	5-6 PM
Freeway/Direction:	I-110_SB
From/To:	Anaheim_PCH
Jurisdiction:	
Analysis Year:	2019
Description:	

Flow Inputs and Adjustments

Volume, V	5572	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1482	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, fp	1.00	
Flow rate, vp	1519	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	70.0	mi/h

LOS and Performance Measures

Flow rate, vp	1519	pc/h/ln
Free-flow speed, FFS	70.0	mi/h
Average passenger-car speed, S	68.8	mi/h
Number of lanes, N	4	
Density, D	22.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

ATTACHMENT B

HCM WORKSHEETS FOR RAMP LOS

EXISTING

HCM Signalized Intersection Capacity Analysis
1: Inglewood Ave & I-405 NB Ramps

10/29/2015

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	267	294	1009	957	0	994
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.6	4.6		4.9
Lane Util. Factor	1.00	1.00	0.91	0.91		0.91
Frt	1.00	0.85	0.96	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	3258	1441		5085
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	3258	1441		5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	290	320	1097	1040	0	1080
RTOR Reduction (vph)	0	36	41	274	0	0
Lane Group Flow (vph)	290	284	1441	381	0	1080
Turn Type	Prot	Perm	NA	Perm		NA
Protected Phases	4		6			2
Permitted Phases		4		6		
Actuated Green, G (s)	16.4	16.4	36.1	36.1		35.8
Effective Green, g (s)	16.4	16.4	36.1	36.1		35.8
Actuated g/C Ratio	0.26	0.26	0.58	0.58		0.58
Clearance Time (s)	4.9	4.9	4.6	4.6		4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	468	418	1896	839		2936
v/s Ratio Prot	0.16		c0.44			0.21
v/s Ratio Perm		c0.18		0.26		
v/c Ratio	0.62	0.68	0.76	0.45		0.37
Uniform Delay, d1	20.1	20.4	9.7	7.4		7.0
Progression Factor	1.00	1.00	0.61	2.33		1.00
Incremental Delay, d2	2.4	4.4	2.4	1.5		0.4
Delay (s)	22.5	24.8	8.3	18.6		7.4
Level of Service	C	C	A	B		A
Approach Delay (s)	23.7		11.5			7.4
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	141	815	0	1820	831	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.2	4.9	4.9
Lane Util. Factor	1.00	0.88		0.91	0.91	0.91
Frt	1.00	0.85		1.00	0.99	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1770	2787		5085	3367	1441
Flt Permitted	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	1770	2787		5085	3367	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	886	0	1978	903	429
RTOR Reduction (vph)	0	42	0	0	5	227
Lane Group Flow (vph)	153	844	0	1978	941	159
Turn Type	Prot	custom		NA	NA	Perm
Protected Phases	8	8 1		6	2	
Permitted Phases						2
Actuated Green, G (s)	12.0	27.4		41.2	25.5	25.5
Effective Green, g (s)	12.0	27.4		41.2	25.5	25.5
Actuated g/C Ratio	0.19	0.44		0.66	0.41	0.41
Clearance Time (s)	4.6			4.2	4.9	4.9
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	342	1231		3379	1384	592
v/s Ratio Prot	0.09	c0.30		0.39	c0.28	
v/s Ratio Perm						0.11
v/c Ratio	0.45	0.69		0.59	0.68	0.27
Uniform Delay, d1	22.1	13.8		5.7	14.9	12.1
Progression Factor	1.00	1.00		1.00	0.69	0.27
Incremental Delay, d2	0.9	1.6		0.7	2.6	1.0
Delay (s)	23.0	15.4		6.5	12.9	4.3
Level of Service	C	B		A	B	A
Approach Delay (s)	16.6			6.5	10.4	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	698	1497	0	1471	0	171
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	759	1627	0	1599	0	186
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.82	
vC, conflicting volume			2386		1558	253
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2386		1246	253
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	75
cM capacity (veh/h)			199		136	747

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	303	303	694	1085	799	799	186
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	542	1085	0	0	186
cSH	1700	1700	1700	1700	1700	1700	747
Volume to Capacity	0.18	0.18	0.41	0.64	0.47	0.47	0.25
Queue Length 95th (ft)	0	0	0	0	0	0	25
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.4
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.4
Approach LOS							B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	889	1133	545	0	387
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.9	4.9		4.6
Lane Util. Factor		0.95	0.95	1.00		0.88
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		3539	3539	1583		2787
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		3539	3539	1583		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	966	1232	592	0	421
RTOR Reduction (vph)	0	0	0	103	0	59
Lane Group Flow (vph)	0	966	1232	489	0	362
Turn Type		NA	NA	custom		Prot
Protected Phases		4 6 2	6 2	6		4
Permitted Phases						
Actuated Green, G (s)		120.0	80.8	69.7		29.7
Effective Green, g (s)		115.1	80.8	69.7		29.7
Actuated g/C Ratio		0.96	0.67	0.58		0.25
Clearance Time (s)				4.9		4.6
Vehicle Extension (s)				3.0		3.0
Lane Grp Cap (vph)		3394	2382	919		689
v/s Ratio Prot		0.27	c0.35	0.31		c0.13
v/s Ratio Perm						
v/c Ratio		0.28	0.52	0.53		0.53
Uniform Delay, d1		0.1	9.8	15.3		39.1
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.0	0.8	2.2		0.7
Delay (s)		0.2	10.6	17.5		39.8
Level of Service		A	B	B		D
Approach Delay (s)		0.2	12.8		39.8	
Approach LOS		A	B		D	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	67	830	458	1234	1319	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.4	5.4	5.4	5.4	
Lane Util. Factor	1.00	0.95	1.00	0.91	0.91	
Frt	0.87	0.85	1.00	1.00	0.97	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1613	1504	1770	5085	4924	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1613	1504	1770	5085	4924	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	902	498	1341	1434	386
RTOR Reduction (vph)	171	2	0	0	41	0
Lane Group Flow (vph)	317	485	498	1341	1779	0
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	24.4	59.9	35.5	84.6	43.7	
Effective Green, g (s)	24.4	59.9	35.5	84.6	43.7	
Actuated g/C Ratio	0.20	0.50	0.30	0.71	0.37	
Clearance Time (s)	5.1	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	329	753	525	3599	1800	
v/s Ratio Prot	c0.20	0.19	c0.28	0.26	c0.36	
v/s Ratio Perm		0.13				
v/c Ratio	0.96	0.64	0.95	0.37	0.99	
Uniform Delay, d1	47.1	21.9	41.1	6.9	37.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	39.6	1.9	28.4	0.3	18.7	
Delay (s)	86.7	23.8	69.5	7.2	56.3	
Level of Service	F	C	E	A	E	
Approach Delay (s)	55.3			24.1	56.3	
Approach LOS	E			C	E	

Intersection Summary			
HCM 2000 Control Delay	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	15.9
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	427	464	169	768	604	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	0.97	
Frt	0.92		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	3263		1770	3539	3436	
Flt Permitted	1.00		0.25	1.00	0.95	
Satd. Flow (perm)	3263		464	3539	3436	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	464	504	184	835	657	11
RTOR Reduction (vph)	185	0	0	0	1	0
Lane Group Flow (vph)	783	0	184	835	667	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	57.0		57.0	57.0	25.0	
Effective Green, g (s)	57.0		57.0	57.0	25.0	
Actuated g/C Ratio	0.63		0.63	0.63	0.28	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	2066		293	2241	954	
v/s Ratio Prot	0.24			0.24	c0.19	
v/s Ratio Perm			c0.40			
v/c Ratio	0.38		0.63	0.37	0.70	
Uniform Delay, d1	8.0		10.0	7.9	29.1	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.5		9.8	0.5	4.2	
Delay (s)	8.5		19.8	8.4	33.4	
Level of Service	A		B	A	C	
Approach Delay (s)	8.5			10.5	33.4	
Approach LOS	A			B	C	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Inglewood Ave & I-405 NB Ramps

10/29/2015

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	410	343	802	804	0	1242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.6	4.6		4.9
Lane Util. Factor	1.00	1.00	0.91	0.91		0.91
Frt	1.00	0.85	0.96	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	3250	1441		5085
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	3250	1441		5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	446	373	872	874	0	1350
RTOR Reduction (vph)	0	65	52	256	0	0
Lane Group Flow (vph)	446	308	1152	286	0	1350
Turn Type	Prot	Perm	NA	Perm		NA
Protected Phases	4		6			2
Permitted Phases		4		6		
Actuated Green, G (s)	19.8	19.8	32.7	32.7		32.4
Effective Green, g (s)	19.8	19.8	32.7	32.7		32.4
Actuated g/C Ratio	0.32	0.32	0.53	0.53		0.52
Clearance Time (s)	4.9	4.9	4.6	4.6		4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	565	505	1714	760		2657
v/s Ratio Prot	c0.25		c0.35			0.27
v/s Ratio Perm		0.19		0.20		
v/c Ratio	0.79	0.61	0.67	0.38		0.51
Uniform Delay, d1	19.2	17.8	10.7	8.6		9.6
Progression Factor	1.00	1.00	0.75	2.44		1.00
Incremental Delay, d2	7.2	2.2	1.9	1.3		0.7
Delay (s)	26.4	20.0	9.9	22.4		10.3
Level of Service	C	C	A	C		B
Approach Delay (s)	23.5		13.8			10.3
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	133	965	0	1408	1206	446
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.2	4.9	4.9
Lane Util. Factor	1.00	0.88		0.91	0.91	0.91
Frt	1.00	0.85		1.00	0.99	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1770	2787		5085	3372	1441
Flt Permitted	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	1770	2787		5085	3372	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	145	1049	0	1530	1311	485
RTOR Reduction (vph)	0	9	0	0	4	268
Lane Group Flow (vph)	145	1040	0	1530	1356	168
Turn Type	Prot	custom		NA	NA	Perm
Protected Phases	8	8 1		6	2	
Permitted Phases						2
Actuated Green, G (s)	12.0	29.0		41.2	23.9	23.9
Effective Green, g (s)	12.0	29.0		41.2	23.9	23.9
Actuated g/C Ratio	0.19	0.47		0.66	0.39	0.39
Clearance Time (s)	4.6			4.2	4.9	4.9
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	342	1303		3379	1299	555
v/s Ratio Prot	0.08	c0.37		0.30	c0.40	
v/s Ratio Perm						0.12
v/c Ratio	0.42	0.80		0.45	1.04	0.30
Uniform Delay, d1	22.0	14.0		5.0	19.1	13.3
Progression Factor	1.00	1.00		1.00	0.66	0.01
Incremental Delay, d2	0.8	3.5		0.4	35.2	1.2
Delay (s)	22.8	17.5		5.4	47.8	1.4
Level of Service	C	B		A	D	A
Approach Delay (s)	18.2			5.4	36.5	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1017	578	0	1579	0	474
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1105	628	0	1716	0	515
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.86	
vC, conflicting volume			1734		1964	368
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1734		1797	368
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	18
cM capacity (veh/h)			360		62	629

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	442	442	431	419	858	858	515
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	209	419	0	0	515
cSH	1700	1700	1700	1700	1700	1700	629
Volume to Capacity	0.26	0.26	0.25	0.25	0.50	0.50	0.82
Queue Length 95th (ft)	0	0	0	0	0	0	213
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	31.5
Lane LOS							D
Approach Delay (s)	0.0				0.0		31.5
Approach LOS							D

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1602	727	229	0	850
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.9	4.9		4.6
Lane Util. Factor		0.95	0.95	1.00		0.88
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		3539	3539	1583		2787
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		3539	3539	1583		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1741	790	249	0	924
RTOR Reduction (vph)	0	0	0	93	0	153
Lane Group Flow (vph)	0	1741	790	156	0	771
Turn Type		NA	NA	custom		Prot
Protected Phases		4 6 2	6 2	6		4
Permitted Phases						
Actuated Green, G (s)		120.0	62.1	51.0		48.4
Effective Green, g (s)		115.1	62.1	51.0		48.4
Actuated g/C Ratio		0.96	0.52	0.42		0.40
Clearance Time (s)				4.9		4.6
Vehicle Extension (s)				3.0		3.0
Lane Grp Cap (vph)		3394	1831	672		1124
v/s Ratio Prot		c0.49	0.22	0.10		c0.28
v/s Ratio Perm						
v/c Ratio		0.51	0.43	0.23		0.69
Uniform Delay, d1		0.2	18.0	22.0		29.5
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.1	0.7	0.8		1.8
Delay (s)		0.3	18.7	22.8		31.3
Level of Service		A	B	C		C
Approach Delay (s)		0.3	19.7		31.3	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	84	659	209	2036	1411	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.4	5.4	5.4	5.4	
Lane Util. Factor	1.00	0.95	1.00	0.91	0.91	
Frt	0.88	0.85	1.00	1.00	0.98	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1628	1504	1770	5085	5000	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1628	1504	1770	5085	5000	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	716	227	2213	1534	193
RTOR Reduction (vph)	110	3	0	0	13	0
Lane Group Flow (vph)	296	398	227	2213	1714	0
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	24.3	50.0	25.7	78.9	47.8	
Effective Green, g (s)	24.3	50.0	25.7	78.9	47.8	
Actuated g/C Ratio	0.21	0.44	0.23	0.69	0.42	
Clearance Time (s)	5.1	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	347	661	400	3528	2102	
v/s Ratio Prot	c0.18	0.14	0.13	c0.44	c0.34	
v/s Ratio Perm		0.13				
v/c Ratio	0.85	0.60	0.57	0.63	0.82	
Uniform Delay, d1	43.0	24.3	39.1	9.4	29.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	18.0	1.6	5.7	0.9	3.6	
Delay (s)	60.9	25.8	44.8	10.3	32.7	
Level of Service	E	C	D	B	C	
Approach Delay (s)	43.5			13.5	32.7	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	113.7	Sum of lost time (s)	15.9
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	724	689	182	606	767	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	0.97	
Frt	0.93		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	3280		1770	3539	3433	
Flt Permitted	1.00		0.12	1.00	0.95	
Satd. Flow (perm)	3280		217	3539	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	787	749	198	659	834	20
RTOR Reduction (vph)	191	0	0	0	2	0
Lane Group Flow (vph)	1345	0	198	659	852	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	62.0		62.0	62.0	20.0	
Effective Green, g (s)	62.0		62.0	62.0	20.0	
Actuated g/C Ratio	0.69		0.69	0.69	0.22	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	2259		149	2437	762	
v/s Ratio Prot	0.41			0.19	c0.25	
v/s Ratio Perm			c0.91			
v/c Ratio	0.60		1.33	0.27	1.12	
Uniform Delay, d1	7.4		14.0	5.4	35.0	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.2		186.7	0.3	70.3	
Delay (s)	8.6		200.7	5.6	105.3	
Level of Service	A		F	A	F	
Approach Delay (s)	8.6			50.7	105.3	
Approach LOS	A			D	F	

Intersection Summary			
HCM 2000 Control Delay	45.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

EXISTING WITH PROJECT

HCM Signalized Intersection Capacity Analysis
1: Inglewood Ave & I-405 NB Ramps

10/29/2015

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	267	294	1009	961	0	994
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.6	4.6		4.9
Lane Util. Factor	1.00	1.00	0.91	0.91		0.91
Frt	1.00	0.85	0.96	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	3258	1441		5085
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	3258	1441		5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	290	320	1097	1045	0	1080
RTOR Reduction (vph)	0	36	42	275	0	0
Lane Group Flow (vph)	290	284	1442	383	0	1080
Turn Type	Prot	Perm	NA	Perm		NA
Protected Phases	4		6			2
Permitted Phases		4		6		
Actuated Green, G (s)	16.4	16.4	36.1	36.1		35.8
Effective Green, g (s)	16.4	16.4	36.1	36.1		35.8
Actuated g/C Ratio	0.26	0.26	0.58	0.58		0.58
Clearance Time (s)	4.9	4.9	4.6	4.6		4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	468	418	1896	839		2936
v/s Ratio Prot	0.16		c0.44			0.21
v/s Ratio Perm		c0.18		0.27		
v/c Ratio	0.62	0.68	0.76	0.46		0.37
Uniform Delay, d1	20.1	20.4	9.7	7.4		7.0
Progression Factor	1.00	1.00	0.61	2.34		1.00
Incremental Delay, d2	2.4	4.4	2.4	1.5		0.4
Delay (s)	22.5	24.8	8.4	18.7		7.4
Level of Service	C	C	A	B		A
Approach Delay (s)	23.7		11.5			7.4
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	141	821	0	1820	835	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.2	4.9	4.9
Lane Util. Factor	1.00	0.88		0.91	0.91	0.91
Frt	1.00	0.85		1.00	0.99	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1770	2787		5085	3367	1441
Flt Permitted	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	1770	2787		5085	3367	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	892	0	1978	908	429
RTOR Reduction (vph)	0	41	0	0	5	228
Lane Group Flow (vph)	153	851	0	1978	946	158
Turn Type	Prot	custom		NA	NA	Perm
Protected Phases	8	8 1		6	2	
Permitted Phases						2
Actuated Green, G (s)	12.0	27.5		41.2	25.4	25.4
Effective Green, g (s)	12.0	27.5		41.2	25.4	25.4
Actuated g/C Ratio	0.19	0.44		0.66	0.41	0.41
Clearance Time (s)	4.6			4.2	4.9	4.9
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	342	1236		3379	1379	590
v/s Ratio Prot	0.09	c0.31		0.39	c0.28	
v/s Ratio Perm						0.11
v/c Ratio	0.45	0.69		0.59	0.69	0.27
Uniform Delay, d1	22.1	13.8		5.7	15.0	12.1
Progression Factor	1.00	1.00		1.00	0.70	0.27
Incremental Delay, d2	0.9	1.6		0.7	2.6	1.0
Delay (s)	23.0	15.4		6.5	13.1	4.3
Level of Service	C	B		A	B	A
Approach Delay (s)	16.5			6.5	10.6	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	698	1498	0	1473	0	171
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	759	1628	0	1601	0	186
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.82	
vC, conflicting volume			2387		1559	253
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2387		1246	253
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	75
cM capacity (veh/h)			199		136	747

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	303	303	694	1086	801	801	186
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	543	1086	0	0	186
cSH	1700	1700	1700	1700	1700	1700	747
Volume to Capacity	0.18	0.18	0.41	0.64	0.47	0.47	0.25
Queue Length 95th (ft)	0	0	0	0	0	0	25
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.4
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.4
Approach LOS							B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	889	1133	545	0	389
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.9	4.9		4.6
Lane Util. Factor		0.95	0.95	1.00		0.88
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		3539	3539	1583		2787
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		3539	3539	1583		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	966	1232	592	0	423
RTOR Reduction (vph)	0	0	0	103	0	59
Lane Group Flow (vph)	0	966	1232	489	0	364
Turn Type		NA	NA	custom		Prot
Protected Phases		4 6 2	6 2	6		4
Permitted Phases						
Actuated Green, G (s)		120.0	80.7	69.6		29.8
Effective Green, g (s)		115.1	80.7	69.6		29.8
Actuated g/C Ratio		0.96	0.67	0.58		0.25
Clearance Time (s)				4.9		4.6
Vehicle Extension (s)				3.0		3.0
Lane Grp Cap (vph)		3394	2379	918		692
v/s Ratio Prot		0.27	c0.35	0.31		c0.13
v/s Ratio Perm						
v/c Ratio		0.28	0.52	0.53		0.53
Uniform Delay, d1		0.1	9.9	15.3		39.0
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.0	0.8	2.2		0.7
Delay (s)		0.2	10.7	17.5		39.7
Level of Service		A	B	B		D
Approach Delay (s)		0.2	12.9		39.7	
Approach LOS		A	B		D	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	67	830	458	1234	1320	356
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.4	5.4	5.4	5.4	
Lane Util. Factor	1.00	0.95	1.00	0.91	0.91	
Frt	0.87	0.85	1.00	1.00	0.97	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1613	1504	1770	5085	4923	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1613	1504	1770	5085	4923	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	902	498	1341	1435	387
RTOR Reduction (vph)	171	2	0	0	41	0
Lane Group Flow (vph)	317	485	498	1341	1781	0
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	24.4	59.9	35.5	84.6	43.7	
Effective Green, g (s)	24.4	59.9	35.5	84.6	43.7	
Actuated g/C Ratio	0.20	0.50	0.30	0.71	0.37	
Clearance Time (s)	5.1	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	329	753	525	3599	1800	
v/s Ratio Prot	c0.20	0.19	c0.28	0.26	c0.36	
v/s Ratio Perm		0.13				
v/c Ratio	0.96	0.64	0.95	0.37	0.99	
Uniform Delay, d1	47.1	21.9	41.1	6.9	37.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	39.6	1.9	28.4	0.3	18.9	
Delay (s)	86.7	23.8	69.5	7.2	56.6	
Level of Service	F	C	E	A	E	
Approach Delay (s)	55.3			24.1	56.6	
Approach LOS	E			C	E	

Intersection Summary			
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	15.9
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	427	464	169	768	606	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	0.97	
Frt	0.92		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	3263		1770	3539	3436	
Flt Permitted	1.00		0.25	1.00	0.95	
Satd. Flow (perm)	3263		464	3539	3436	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	464	504	184	835	659	11
RTOR Reduction (vph)	185	0	0	0	1	0
Lane Group Flow (vph)	783	0	184	835	669	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	57.0		57.0	57.0	25.0	
Effective Green, g (s)	57.0		57.0	57.0	25.0	
Actuated g/C Ratio	0.63		0.63	0.63	0.28	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	2066		293	2241	954	
v/s Ratio Prot	0.24			0.24	c0.19	
v/s Ratio Perm			c0.40			
v/c Ratio	0.38		0.63	0.37	0.70	
Uniform Delay, d1	8.0		10.0	7.9	29.1	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.5		9.8	0.5	4.3	
Delay (s)	8.5		19.8	8.4	33.4	
Level of Service	A		B	A	C	
Approach Delay (s)	8.5			10.5	33.4	
Approach LOS	A			B	C	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Inglewood Ave & I-405 NB Ramps

10/29/2015

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	410	343	802	813	0	1242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.6	4.6		4.9
Lane Util. Factor	1.00	1.00	0.91	0.91		0.91
Frt	1.00	0.85	0.96	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	3246	1441		5085
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	3246	1441		5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	446	373	872	884	0	1350
RTOR Reduction (vph)	0	65	56	255	0	0
Lane Group Flow (vph)	446	308	1161	284	0	1350
Turn Type	Prot	Perm	NA	Perm		NA
Protected Phases	4		6			2
Permitted Phases		4		6		
Actuated Green, G (s)	19.8	19.8	32.7	32.7		32.4
Effective Green, g (s)	19.8	19.8	32.7	32.7		32.4
Actuated g/C Ratio	0.32	0.32	0.53	0.53		0.52
Clearance Time (s)	4.9	4.9	4.6	4.6		4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	565	505	1712	760		2657
v/s Ratio Prot	c0.25		c0.36			0.27
v/s Ratio Perm		0.19		0.20		
v/c Ratio	0.79	0.61	0.68	0.37		0.51
Uniform Delay, d1	19.2	17.8	10.8	8.6		9.6
Progression Factor	1.00	1.00	0.75	2.40		1.00
Incremental Delay, d2	7.2	2.2	2.0	1.3		0.7
Delay (s)	26.4	20.0	10.1	22.0		10.3
Level of Service	C	C	B	C		B
Approach Delay (s)	23.5		13.7			10.3
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	133	979	0	1408	1215	446
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.2	4.9	4.9
Lane Util. Factor	1.00	0.88		0.91	0.91	0.91
Frt	1.00	0.85		1.00	0.99	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1770	2787		5085	3372	1441
Flt Permitted	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	1770	2787		5085	3372	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	145	1064	0	1530	1321	485
RTOR Reduction (vph)	0	8	0	0	4	269
Lane Group Flow (vph)	145	1056	0	1530	1366	167
Turn Type	Prot	custom		NA	NA	Perm
Protected Phases	8	8 1		6	2	
Permitted Phases						2
Actuated Green, G (s)	12.0	29.1		41.2	23.8	23.8
Effective Green, g (s)	12.0	29.1		41.2	23.8	23.8
Actuated g/C Ratio	0.19	0.47		0.66	0.38	0.38
Clearance Time (s)	4.6			4.2	4.9	4.9
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	342	1308		3379	1294	553
v/s Ratio Prot	0.08	c0.38		0.30	c0.41	
v/s Ratio Perm						0.12
v/c Ratio	0.42	0.81		0.45	1.06	0.30
Uniform Delay, d1	22.0	14.1		5.0	19.1	13.3
Progression Factor	1.00	1.00		1.00	0.67	0.02
Incremental Delay, d2	0.8	3.8		0.4	39.3	1.2
Delay (s)	22.8	17.8		5.4	52.1	1.4
Level of Service	C	B		A	D	A
Approach Delay (s)	18.4			5.4	39.8	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1017	581	0	1584	0	474
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1105	632	0	1722	0	515
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.86	
vC, conflicting volume			1737		1966	368
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1737		1801	368
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	18
cM capacity (veh/h)			358		61	629

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	442	442	432	421	861	861	515
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	211	421	0	0	515
cSH	1700	1700	1700	1700	1700	1700	629
Volume to Capacity	0.26	0.26	0.25	0.25	0.51	0.51	0.82
Queue Length 95th (ft)	0	0	0	0	0	0	213
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	31.5
Lane LOS							D
Approach Delay (s)	0.0				0.0		31.5
Approach LOS							D

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1602	727	229	0	855
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.9	4.9		4.6
Lane Util. Factor		0.95	0.95	1.00		0.88
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		3539	3539	1583		2787
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		3539	3539	1583		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1741	790	249	0	929
RTOR Reduction (vph)	0	0	0	93	0	153
Lane Group Flow (vph)	0	1741	790	156	0	776
Turn Type		NA	NA	custom		Prot
Protected Phases		4 6 2	6 2	6		4
Permitted Phases						
Actuated Green, G (s)		120.0	62.1	51.0		48.4
Effective Green, g (s)		115.1	62.1	51.0		48.4
Actuated g/C Ratio		0.96	0.52	0.42		0.40
Clearance Time (s)				4.9		4.6
Vehicle Extension (s)				3.0		3.0
Lane Grp Cap (vph)		3394	1831	672		1124
v/s Ratio Prot		c0.49	0.22	0.10		c0.28
v/s Ratio Perm						
v/c Ratio		0.51	0.43	0.23		0.69
Uniform Delay, d1		0.2	18.0	22.0		29.6
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.1	0.7	0.8		1.8
Delay (s)		0.3	18.7	22.8		31.4
Level of Service		A	B	C		C
Approach Delay (s)		0.3	19.7		31.4	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	84	659	209	2036	1413	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.4	5.4	5.4	5.4	
Lane Util. Factor	1.00	0.95	1.00	0.91	0.91	
Frt	0.88	0.85	1.00	1.00	0.98	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1628	1504	1770	5085	4999	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1628	1504	1770	5085	4999	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	716	227	2213	1536	197
RTOR Reduction (vph)	110	3	0	0	13	0
Lane Group Flow (vph)	296	398	227	2213	1720	0
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	24.3	50.0	25.7	78.9	47.8	
Effective Green, g (s)	24.3	50.0	25.7	78.9	47.8	
Actuated g/C Ratio	0.21	0.44	0.23	0.69	0.42	
Clearance Time (s)	5.1	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	347	661	400	3528	2101	
v/s Ratio Prot	c0.18	0.14	0.13	c0.44	c0.34	
v/s Ratio Perm		0.13				
v/c Ratio	0.85	0.60	0.57	0.63	0.82	
Uniform Delay, d1	43.0	24.3	39.1	9.4	29.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	18.0	1.6	5.7	0.9	3.7	
Delay (s)	60.9	25.8	44.8	10.3	32.8	
Level of Service	E	C	D	B	C	
Approach Delay (s)	43.5			13.5	32.8	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	113.7	Sum of lost time (s)	15.9
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	724	689	182	606	772	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	0.97	
Frt	0.93		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	3280		1770	3539	3433	
Flt Permitted	1.00		0.12	1.00	0.95	
Satd. Flow (perm)	3280		217	3539	3433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	787	749	198	659	839	20
RTOR Reduction (vph)	191	0	0	0	2	0
Lane Group Flow (vph)	1345	0	198	659	857	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	62.0		62.0	62.0	20.0	
Effective Green, g (s)	62.0		62.0	62.0	20.0	
Actuated g/C Ratio	0.69		0.69	0.69	0.22	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	2259		149	2437	762	
v/s Ratio Prot	0.41			0.19	c0.25	
v/s Ratio Perm			c0.91			
v/c Ratio	0.60		1.33	0.27	1.13	
Uniform Delay, d1	7.4		14.0	5.4	35.0	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.2		186.7	0.3	72.8	
Delay (s)	8.6		200.7	5.6	107.8	
Level of Service	A		F	A	F	
Approach Delay (s)	8.6			50.7	107.8	
Approach LOS	A			D	F	

Intersection Summary			
HCM 2000 Control Delay	45.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

FUTURE 2019 WITHOUT PROJECT

HCM Signalized Intersection Capacity Analysis
1: Inglewood Ave & I-405 NB Ramps

10/30/2015

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	273	300	1031	978	0	1016
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.6	4.6		4.9
Lane Util. Factor	1.00	1.00	0.91	0.91		0.91
Frt	1.00	0.85	0.96	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	3258	1441		5085
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	3258	1441		5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	297	326	1121	1063	0	1104
RTOR Reduction (vph)	0	33	42	283	0	0
Lane Group Flow (vph)	297	293	1472	387	0	1104
Turn Type	Prot	Perm	NA	Perm		NA
Protected Phases	4		6			2
Permitted Phases		4		6		
Actuated Green, G (s)	16.7	16.7	35.8	35.8		35.5
Effective Green, g (s)	16.7	16.7	35.8	35.8		35.5
Actuated g/C Ratio	0.27	0.27	0.58	0.58		0.57
Clearance Time (s)	4.9	4.9	4.6	4.6		4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	476	426	1881	832		2911
v/s Ratio Prot	0.17		c0.45			0.22
v/s Ratio Perm		c0.19		0.27		
v/c Ratio	0.62	0.69	0.78	0.46		0.38
Uniform Delay, d1	19.9	20.3	10.1	7.6		7.2
Progression Factor	1.00	1.00	0.61	2.41		1.00
Incremental Delay, d2	2.5	4.6	2.7	1.5		0.4
Delay (s)	22.4	24.9	8.9	19.7		7.6
Level of Service	C	C	A	B		A
Approach Delay (s)	23.7		12.2			7.6
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	144	833	0	1860	849	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.2	4.9	4.9
Lane Util. Factor	1.00	0.88		0.91	0.91	0.91
Frt	1.00	0.85		1.00	0.99	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1770	2787		5085	3367	1441
Flt Permitted	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	1770	2787		5085	3367	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	157	905	0	2022	923	439
RTOR Reduction (vph)	0	39	0	0	5	234
Lane Group Flow (vph)	157	866	0	2022	962	161
Turn Type	Prot	custom		NA	NA	Perm
Protected Phases	8	8 1		6	2	
Permitted Phases						2
Actuated Green, G (s)	12.0	27.6		41.2	25.3	25.3
Effective Green, g (s)	12.0	27.6		41.2	25.3	25.3
Actuated g/C Ratio	0.19	0.45		0.66	0.41	0.41
Clearance Time (s)	4.6			4.2	4.9	4.9
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	342	1240		3379	1373	588
v/s Ratio Prot	0.09	c0.31		0.40	c0.29	
v/s Ratio Perm						0.11
v/c Ratio	0.46	0.70		0.60	0.70	0.27
Uniform Delay, d1	22.1	13.8		5.8	15.2	12.2
Progression Factor	1.00	1.00		1.00	0.69	0.26
Incremental Delay, d2	1.0	1.7		0.8	2.8	1.1
Delay (s)	23.1	15.6		6.6	13.3	4.2
Level of Service	C	B		A	B	A
Approach Delay (s)	16.7			6.6	10.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	713	1530	0	1503	0	175
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	775	1663	0	1634	0	190
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.81	
vC, conflicting volume			2438		1592	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2438		1264	258
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	74
cM capacity (veh/h)			190		131	741

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	310	310	709	1109	817	817	190
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	554	1109	0	0	190
cSH	1700	1700	1700	1700	1700	1700	741
Volume to Capacity	0.18	0.18	0.42	0.65	0.48	0.48	0.26
Queue Length 95th (ft)	0	0	0	0	0	0	26
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.5
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.5
Approach LOS							B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	908	1158	557	0	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.9	4.9		4.6
Lane Util. Factor		0.95	0.95	1.00		0.88
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		3539	3539	1583		2787
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		3539	3539	1583		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	987	1259	605	0	429
RTOR Reduction (vph)	0	0	0	105	0	54
Lane Group Flow (vph)	0	987	1259	500	0	375
Turn Type		NA	NA	custom		Prot
Protected Phases		4 6 2	6 2	6		4
Permitted Phases						
Actuated Green, G (s)		120.0	79.9	68.8		30.6
Effective Green, g (s)		115.1	79.9	68.8		30.6
Actuated g/C Ratio		0.96	0.67	0.57		0.26
Clearance Time (s)				4.9		4.6
Vehicle Extension (s)				3.0		3.0
Lane Grp Cap (vph)		3394	2356	907		710
v/s Ratio Prot		0.28	c0.36	0.32		c0.13
v/s Ratio Perm						
v/c Ratio		0.29	0.53	0.55		0.53
Uniform Delay, d1		0.1	10.4	16.0		38.5
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.0	0.9	2.4		0.7
Delay (s)		0.2	11.3	18.4		39.2
Level of Service		A	B	B		D
Approach Delay (s)		0.2	13.6		39.2	
Approach LOS		A	B		D	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	68	848	468	1261	1348	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.4	5.4	5.4	5.4	
Lane Util. Factor	1.00	0.95	1.00	0.91	0.91	
Frt	0.87	0.85	1.00	1.00	0.97	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1613	1504	1770	5085	4923	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1613	1504	1770	5085	4923	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	922	509	1371	1465	395
RTOR Reduction (vph)	172	3	0	0	40	0
Lane Group Flow (vph)	326	495	509	1371	1820	0
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	23.9	58.7	34.8	85.6	45.4	
Effective Green, g (s)	23.9	58.7	34.8	85.6	45.4	
Actuated g/C Ratio	0.20	0.49	0.29	0.71	0.38	
Clearance Time (s)	5.1	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	321	735	513	3627	1862	
v/s Ratio Prot	c0.20	0.20	c0.29	0.27	c0.37	
v/s Ratio Perm		0.13				
v/c Ratio	1.02	0.67	0.99	0.38	0.98	
Uniform Delay, d1	48.0	23.4	42.5	6.8	36.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	54.1	2.5	37.9	0.3	16.1	
Delay (s)	102.2	25.8	80.3	7.1	52.9	
Level of Service	F	C	F	A	D	
Approach Delay (s)	64.0			26.9	52.9	
Approach LOS	E			C	D	

Intersection Summary			
HCM 2000 Control Delay	44.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.9
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	436	474	173	785	617	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	0.97	
Frt	0.92		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	3263		1770	3539	3436	
Flt Permitted	1.00		0.24	1.00	0.95	
Satd. Flow (perm)	3263		450	3539	3436	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	474	515	188	853	671	11
RTOR Reduction (vph)	189	0	0	0	1	0
Lane Group Flow (vph)	800	0	188	853	681	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	57.0		57.0	57.0	25.0	
Effective Green, g (s)	57.0		57.0	57.0	25.0	
Actuated g/C Ratio	0.63		0.63	0.63	0.28	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	2066		285	2241	954	
v/s Ratio Prot	0.25			0.24	c0.20	
v/s Ratio Perm			c0.42			
v/c Ratio	0.39		0.66	0.38	0.71	
Uniform Delay, d1	8.0		10.4	8.0	29.3	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.5		11.4	0.5	4.5	
Delay (s)	8.6		21.8	8.5	33.8	
Level of Service	A		C	A	C	
Approach Delay (s)	8.6			10.9	33.8	
Approach LOS	A			B	C	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Inglewood Ave & I-405 NB Ramps

10/29/2015

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	419	350	819	822	0	1269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.6	4.6		4.9
Lane Util. Factor	1.00	1.00	0.91	0.91		0.91
Frt	1.00	0.85	0.96	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	3250	1441		5085
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	3250	1441		5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	455	380	890	893	0	1379
RTOR Reduction (vph)	0	61	53	264	0	0
Lane Group Flow (vph)	455	319	1176	290	0	1379
Turn Type	Prot	Perm	NA	Perm		NA
Protected Phases	4		6			2
Permitted Phases		4		6		
Actuated Green, G (s)	20.0	20.0	32.5	32.5		32.2
Effective Green, g (s)	20.0	20.0	32.5	32.5		32.2
Actuated g/C Ratio	0.32	0.32	0.52	0.52		0.52
Clearance Time (s)	4.9	4.9	4.6	4.6		4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	570	510	1703	755		2640
v/s Ratio Prot	c0.26		c0.36			0.27
v/s Ratio Perm		0.20		0.20		
v/c Ratio	0.80	0.63	0.69	0.38		0.52
Uniform Delay, d1	19.2	17.8	11.0	8.8		9.8
Progression Factor	1.00	1.00	0.75	2.49		1.00
Incremental Delay, d2	7.7	2.4	2.1	1.4		0.7
Delay (s)	26.8	20.2	10.3	23.2		10.6
Level of Service	C	C	B	C		B
Approach Delay (s)	23.8		14.4			10.6
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	136	986	0	1439	1232	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.2	4.9	4.9
Lane Util. Factor	1.00	0.88		0.91	0.91	0.91
Frt	1.00	0.85		1.00	0.99	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1770	2787		5085	3372	1441
Flt Permitted	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	1770	2787		5085	3372	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	1072	0	1564	1339	496
RTOR Reduction (vph)	0	7	0	0	4	275
Lane Group Flow (vph)	148	1065	0	1564	1385	171
Turn Type	Prot	custom		NA	NA	Perm
Protected Phases	8	8 1		6	2	
Permitted Phases						2
Actuated Green, G (s)	12.0	29.1		41.2	23.8	23.8
Effective Green, g (s)	12.0	29.1		41.2	23.8	23.8
Actuated g/C Ratio	0.19	0.47		0.66	0.38	0.38
Clearance Time (s)	4.6			4.2	4.9	4.9
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	342	1308		3379	1294	553
v/s Ratio Prot	0.08	c0.38		0.31	c0.41	
v/s Ratio Perm						0.12
v/c Ratio	0.43	0.81		0.46	1.07	0.31
Uniform Delay, d1	22.0	14.1		5.0	19.1	13.4
Progression Factor	1.00	1.00		1.00	0.66	0.02
Incremental Delay, d2	0.9	4.0		0.5	44.2	1.2
Delay (s)	22.9	18.1		5.5	56.8	1.5
Level of Service	C	B		A	E	A
Approach Delay (s)	18.7			5.5	43.3	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1039	591	0	1613	0	484
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1129	642	0	1753	0	526
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.86	
vC, conflicting volume			1772		2006	376
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1772		1841	376
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	15
cM capacity (veh/h)			347		57	621

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	452	452	440	428	877	877	526
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	214	428	0	0	526
cSH	1700	1700	1700	1700	1700	1700	621
Volume to Capacity	0.27	0.27	0.26	0.25	0.52	0.52	0.85
Queue Length 95th (ft)	0	0	0	0	0	0	233
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	34.6
Lane LOS							D
Approach Delay (s)	0.0				0.0		34.6
Approach LOS							D

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1637	743	234	0	869
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.9	4.9		4.6
Lane Util. Factor		0.95	0.95	1.00		0.88
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		3539	3539	1583		2787
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		3539	3539	1583		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1779	808	254	0	945
RTOR Reduction (vph)	0	0	0	93	0	146
Lane Group Flow (vph)	0	1779	808	161	0	799
Turn Type		NA	NA	custom		Prot
Protected Phases		4 6 2	6 2	6		4
Permitted Phases						
Actuated Green, G (s)		120.0	62.1	51.0		48.4
Effective Green, g (s)		115.1	62.1	51.0		48.4
Actuated g/C Ratio		0.96	0.52	0.42		0.40
Clearance Time (s)				4.9		4.6
Vehicle Extension (s)				3.0		3.0
Lane Grp Cap (vph)		3394	1831	672		1124
v/s Ratio Prot		c0.50	0.23	0.10		c0.29
v/s Ratio Perm						
v/c Ratio		0.52	0.44	0.24		0.71
Uniform Delay, d1		0.2	18.1	22.1		29.9
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.1	0.8	0.8		2.1
Delay (s)		0.3	18.9	22.9		32.1
Level of Service		A	B	C		C
Approach Delay (s)		0.3	19.8		32.1	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	86	673	214	2080	1442	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.4	5.4	5.4	5.4	
Lane Util. Factor	1.00	0.95	1.00	0.91	0.91	
Frt	0.88	0.85	1.00	1.00	0.98	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1628	1504	1770	5085	5000	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1628	1504	1770	5085	5000	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	732	233	2261	1567	198
RTOR Reduction (vph)	109	2	0	0	13	0
Lane Group Flow (vph)	306	408	233	2261	1752	0
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	24.9	50.6	25.7	78.8	47.7	
Effective Green, g (s)	24.9	50.6	25.7	78.8	47.7	
Actuated g/C Ratio	0.22	0.44	0.23	0.69	0.42	
Clearance Time (s)	5.1	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	354	666	398	3508	2088	
v/s Ratio Prot	c0.19	0.14	0.13	c0.44	c0.35	
v/s Ratio Perm		0.13				
v/c Ratio	0.86	0.61	0.59	0.64	0.84	
Uniform Delay, d1	43.0	24.3	39.5	9.9	29.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	19.0	1.7	6.2	0.9	4.2	
Delay (s)	62.0	26.0	45.7	10.8	34.1	
Level of Service	E	C	D	B	C	
Approach Delay (s)	44.1			14.1	34.1	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	114.2	Sum of lost time (s)	15.9
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	740	704	186	619	784	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	0.97	
Frt	0.93		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	3280		1770	3539	3434	
Flt Permitted	1.00		0.11	1.00	0.95	
Satd. Flow (perm)	3280		205	3539	3434	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	804	765	202	673	852	20
RTOR Reduction (vph)	191	0	0	0	2	0
Lane Group Flow (vph)	1378	0	202	673	870	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	1	
Permitted Phases			8			
Actuated Green, G (s)	62.0		62.0	62.0	20.0	
Effective Green, g (s)	62.0		62.0	62.0	20.0	
Actuated g/C Ratio	0.69		0.69	0.69	0.22	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	2259		141	2437	763	
v/s Ratio Prot	0.42			0.19	c0.25	
v/s Ratio Perm			c0.98			
v/c Ratio	0.61		1.43	0.28	1.14	
Uniform Delay, d1	7.5		14.0	5.4	35.0	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.2		230.4	0.3	78.7	
Delay (s)	8.7		244.4	5.7	113.7	
Level of Service	A		F	A	F	
Approach Delay (s)	8.7			60.8	113.7	
Approach LOS	A			E	F	

Intersection Summary			
HCM 2000 Control Delay	50.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

FUTURE 2019 WITH PROJECT

HCM Signalized Intersection Capacity Analysis
1: Inglewood Ave & I-405 NB Ramps

10/29/2015

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	273	300	1031	982	0	1016
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.6	4.6		4.9
Lane Util. Factor	1.00	1.00	0.91	0.91		0.91
Frt	1.00	0.85	0.96	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	3258	1441		5085
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	3258	1441		5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	297	326	1121	1067	0	1104
RTOR Reduction (vph)	0	33	42	284	0	0
Lane Group Flow (vph)	297	293	1474	388	0	1104
Turn Type	Prot	Perm	NA	Perm		NA
Protected Phases	4		6			2
Permitted Phases		4		6		
Actuated Green, G (s)	16.7	16.7	35.8	35.8		35.5
Effective Green, g (s)	16.7	16.7	35.8	35.8		35.5
Actuated g/C Ratio	0.27	0.27	0.58	0.58		0.57
Clearance Time (s)	4.9	4.9	4.6	4.6		4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	476	426	1881	832		2911
v/s Ratio Prot	0.17		c0.45			0.22
v/s Ratio Perm		c0.19		0.27		
v/c Ratio	0.62	0.69	0.78	0.47		0.38
Uniform Delay, d1	19.9	20.3	10.1	7.6		7.2
Progression Factor	1.00	1.00	0.61	2.42		1.00
Incremental Delay, d2	2.5	4.6	2.7	1.5		0.4
Delay (s)	22.4	24.9	9.0	19.9		7.6
Level of Service	C	C	A	B		A
Approach Delay (s)	23.7		12.3			7.6
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	144	839	0	1860	853	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.2	4.9	4.9
Lane Util. Factor	1.00	0.88		0.91	0.91	0.91
Frt	1.00	0.85		1.00	0.99	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1770	2787		5085	3367	1441
Flt Permitted	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	1770	2787		5085	3367	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	157	912	0	2022	927	439
RTOR Reduction (vph)	0	38	0	0	5	234
Lane Group Flow (vph)	157	874	0	2022	966	161
Turn Type	Prot	custom		NA	NA	Perm
Protected Phases	8	8 1		6	2	
Permitted Phases						2
Actuated Green, G (s)	12.0	27.7		41.2	25.2	25.2
Effective Green, g (s)	12.0	27.7		41.2	25.2	25.2
Actuated g/C Ratio	0.19	0.45		0.66	0.41	0.41
Clearance Time (s)	4.6			4.2	4.9	4.9
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	342	1245		3379	1368	585
v/s Ratio Prot	0.09	c0.31		0.40	c0.29	
v/s Ratio Perm						0.11
v/c Ratio	0.46	0.70		0.60	0.71	0.27
Uniform Delay, d1	22.1	13.8		5.8	15.3	12.3
Progression Factor	1.00	1.00		1.00	0.69	0.26
Incremental Delay, d2	1.0	1.8		0.8	2.9	1.1
Delay (s)	23.1	15.6		6.6	13.5	4.3
Level of Service	C	B		A	B	A
Approach Delay (s)	16.7			6.6	10.8	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	713	1531	0	1505	0	175
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	775	1664	0	1636	0	190
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.81	
vC, conflicting volume			2439		1593	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2439		1262	258
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	74
cM capacity (veh/h)			190		131	741

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	310	310	710	1109	818	818	190
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	555	1109	0	0	190
cSH	1700	1700	1700	1700	1700	1700	741
Volume to Capacity	0.18	0.18	0.42	0.65	0.48	0.48	0.26
Queue Length 95th (ft)	0	0	0	0	0	0	26
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.5
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.5
Approach LOS							B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	908	1158	557	0	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.9	4.9		4.6
Lane Util. Factor		0.95	0.95	1.00		0.88
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		3539	3539	1583		2787
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		3539	3539	1583		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	987	1259	605	0	432
RTOR Reduction (vph)	0	0	0	105	0	54
Lane Group Flow (vph)	0	987	1259	500	0	378
Turn Type		NA	NA	custom		Prot
Protected Phases		4 6 2	6 2	6		4
Permitted Phases						
Actuated Green, G (s)		120.0	79.5	68.4		31.0
Effective Green, g (s)		115.1	79.5	68.4		31.0
Actuated g/C Ratio		0.96	0.66	0.57		0.26
Clearance Time (s)				4.9		4.6
Vehicle Extension (s)				3.0		3.0
Lane Grp Cap (vph)		3394	2344	902		719
v/s Ratio Prot		0.28	c0.36	0.32		c0.14
v/s Ratio Perm						
v/c Ratio		0.29	0.54	0.55		0.53
Uniform Delay, d1		0.1	10.6	16.2		38.2
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.0	0.9	2.4		0.7
Delay (s)		0.2	11.5	18.7		38.9
Level of Service		A	B	B		D
Approach Delay (s)		0.2	13.8		38.9	
Approach LOS		A	B		D	

Intersection Summary			
HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	68	848	468	1261	1349	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.4	5.4	5.4	5.4	
Lane Util. Factor	1.00	0.95	1.00	0.91	0.91	
Frt	0.87	0.85	1.00	1.00	0.97	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1613	1504	1770	5085	4923	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1613	1504	1770	5085	4923	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	922	509	1371	1466	396
RTOR Reduction (vph)	172	3	0	0	40	0
Lane Group Flow (vph)	326	495	509	1371	1822	0
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	23.9	58.7	34.8	85.6	45.4	
Effective Green, g (s)	23.9	58.7	34.8	85.6	45.4	
Actuated g/C Ratio	0.20	0.49	0.29	0.71	0.38	
Clearance Time (s)	5.1	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	321	735	513	3627	1862	
v/s Ratio Prot	c0.20	0.20	c0.29	0.27	c0.37	
v/s Ratio Perm		0.13				
v/c Ratio	1.02	0.67	0.99	0.38	0.98	
Uniform Delay, d1	48.0	23.4	42.5	6.8	36.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	54.1	2.5	37.9	0.3	16.3	
Delay (s)	102.2	25.8	80.3	7.1	53.1	
Level of Service	F	C	F	A	D	
Approach Delay (s)	64.0			26.9	53.1	
Approach LOS	E			C	D	

Intersection Summary			
HCM 2000 Control Delay	45.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.9
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	436	474	173	785	619	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	0.97	
Frt	0.92		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	3263		1770	3539	3436	
Flt Permitted	1.00		0.24	1.00	0.95	
Satd. Flow (perm)	3263		450	3539	3436	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	474	515	188	853	673	11
RTOR Reduction (vph)	189	0	0	0	1	0
Lane Group Flow (vph)	800	0	188	853	683	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	57.0		57.0	57.0	25.0	
Effective Green, g (s)	57.0		57.0	57.0	25.0	
Actuated g/C Ratio	0.63		0.63	0.63	0.28	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	2066		285	2241	954	
v/s Ratio Prot	0.25			0.24	c0.20	
v/s Ratio Perm			c0.42			
v/c Ratio	0.39		0.66	0.38	0.72	
Uniform Delay, d1	8.0		10.4	8.0	29.3	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.5		11.4	0.5	4.6	
Delay (s)	8.6		21.8	8.5	33.9	
Level of Service	A		C	A	C	
Approach Delay (s)	8.6			10.9	33.9	
Approach LOS	A			B	C	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Inglewood Ave & I-405 NB Ramps

10/30/2015

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	419	350	819	831	0	1269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.6	4.6		4.9
Lane Util. Factor	1.00	1.00	0.91	0.91		0.91
Frt	1.00	0.85	0.96	0.85		1.00
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	1583	3246	1441		5085
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	1583	3246	1441		5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	455	380	890	903	0	1379
RTOR Reduction (vph)	0	61	56	262	0	0
Lane Group Flow (vph)	455	319	1186	289	0	1379
Turn Type	Prot	Perm	NA	Perm		NA
Protected Phases	4		6			2
Permitted Phases		4		6		
Actuated Green, G (s)	20.0	20.0	32.5	32.5		32.2
Effective Green, g (s)	20.0	20.0	32.5	32.5		32.2
Actuated g/C Ratio	0.32	0.32	0.52	0.52		0.52
Clearance Time (s)	4.9	4.9	4.6	4.6		4.9
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	570	510	1701	755		2640
v/s Ratio Prot	c0.26		c0.37			0.27
v/s Ratio Perm		0.20		0.20		
v/c Ratio	0.80	0.63	0.70	0.38		0.52
Uniform Delay, d1	19.2	17.8	11.1	8.8		9.8
Progression Factor	1.00	1.00	0.75	2.46		1.00
Incremental Delay, d2	7.7	2.4	2.2	1.3		0.7
Delay (s)	26.8	20.2	10.5	22.9		10.6
Level of Service	C	C	B	C		B
Approach Delay (s)	23.8		14.3			10.6
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	136	1000	0	1439	1241	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		4.2	4.9	4.9
Lane Util. Factor	1.00	0.88		0.91	0.91	0.91
Frt	1.00	0.85		1.00	0.99	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1770	2787		5085	3372	1441
Flt Permitted	0.95	1.00		1.00	1.00	1.00
Satd. Flow (perm)	1770	2787		5085	3372	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	1087	0	1564	1349	496
RTOR Reduction (vph)	0	7	0	0	4	276
Lane Group Flow (vph)	148	1080	0	1564	1395	170
Turn Type	Prot	custom		NA	NA	Perm
Protected Phases	8	8 1		6	2	
Permitted Phases						2
Actuated Green, G (s)	12.0	29.2		41.2	23.7	23.7
Effective Green, g (s)	12.0	29.2		41.2	23.7	23.7
Actuated g/C Ratio	0.19	0.47		0.66	0.38	0.38
Clearance Time (s)	4.6			4.2	4.9	4.9
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	342	1312		3379	1288	550
v/s Ratio Prot	0.08	c0.39		0.31	c0.41	
v/s Ratio Perm						0.12
v/c Ratio	0.43	0.82		0.46	1.08	0.31
Uniform Delay, d1	22.0	14.2		5.0	19.2	13.4
Progression Factor	1.00	1.00		1.00	0.66	0.02
Incremental Delay, d2	0.9	4.3		0.5	49.1	1.2
Delay (s)	22.9	18.5		5.5	61.8	1.6
Level of Service	C	B		A	E	A
Approach Delay (s)	19.0			5.5	47.2	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1039	594	0	1618	0	484
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1129	646	0	1759	0	526
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.86	
vC, conflicting volume			1775		2009	376
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1775		1844	376
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	15
cM capacity (veh/h)			346		57	621

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	452	452	441	430	879	879	526
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	215	430	0	0	526
cSH	1700	1700	1700	1700	1700	1700	621
Volume to Capacity	0.27	0.27	0.26	0.25	0.52	0.52	0.85
Queue Length 95th (ft)	0	0	0	0	0	0	233
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	34.6
Lane LOS							D
Approach Delay (s)	0.0				0.0		34.6
Approach LOS							D

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1637	743	234	0	874
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.9	4.9		4.6
Lane Util. Factor		0.95	0.95	1.00		0.88
Frt		1.00	1.00	0.85		0.85
Flt Protected		1.00	1.00	1.00		1.00
Satd. Flow (prot)		3539	3539	1583		2787
Flt Permitted		1.00	1.00	1.00		1.00
Satd. Flow (perm)		3539	3539	1583		2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1779	808	254	0	950
RTOR Reduction (vph)	0	0	0	93	0	146
Lane Group Flow (vph)	0	1779	808	161	0	804
Turn Type		NA	NA	custom		Prot
Protected Phases		4 6 2	6 2	6		4
Permitted Phases						
Actuated Green, G (s)		120.0	62.1	51.0		48.4
Effective Green, g (s)		115.1	62.1	51.0		48.4
Actuated g/C Ratio		0.96	0.52	0.42		0.40
Clearance Time (s)				4.9		4.6
Vehicle Extension (s)				3.0		3.0
Lane Grp Cap (vph)		3394	1831	672		1124
v/s Ratio Prot		c0.50	0.23	0.10		c0.29
v/s Ratio Perm						
v/c Ratio		0.52	0.44	0.24		0.72
Uniform Delay, d1		0.2	18.1	22.1		30.0
Progression Factor		1.00	1.00	1.00		1.00
Incremental Delay, d2		0.1	0.8	0.8		2.2
Delay (s)		0.3	18.9	22.9		32.2
Level of Service		A	B	C		C
Approach Delay (s)		0.3	19.8		32.2	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	86	673	214	2080	1444	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.4	5.4	5.4	5.4	
Lane Util. Factor	1.00	0.95	1.00	0.91	0.91	
Frt	0.88	0.85	1.00	1.00	0.98	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1628	1504	1770	5085	4999	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1628	1504	1770	5085	4999	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	93	732	233	2261	1570	201
RTOR Reduction (vph)	108	3	0	0	13	0
Lane Group Flow (vph)	307	407	233	2261	1758	0
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	25.0	50.7	25.7	79.8	48.7	
Effective Green, g (s)	25.0	50.7	25.7	79.8	48.7	
Actuated g/C Ratio	0.22	0.44	0.22	0.69	0.42	
Clearance Time (s)	5.1	5.4	5.4	5.4	5.4	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	352	661	394	3519	2111	
v/s Ratio Prot	c0.19	0.14	0.13	c0.44	c0.35	
v/s Ratio Perm		0.13				
v/c Ratio	0.87	0.62	0.59	0.64	0.83	
Uniform Delay, d1	43.6	24.8	40.1	9.8	29.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	20.4	1.7	6.4	0.9	4.0	
Delay (s)	64.0	26.5	46.5	10.8	33.7	
Level of Service	E	C	D	B	C	
Approach Delay (s)	45.4			14.1	33.7	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	115.3	Sum of lost time (s)	15.9
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	740	704	186	619	789	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	0.97	
Frt	0.93		1.00	1.00	1.00	
Flt Protected	1.00		0.95	1.00	0.95	
Satd. Flow (prot)	3280		1770	3539	3434	
Flt Permitted	1.00		0.11	1.00	0.95	
Satd. Flow (perm)	3280		205	3539	3434	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	804	765	202	673	858	20
RTOR Reduction (vph)	191	0	0	0	2	0
Lane Group Flow (vph)	1378	0	202	673	876	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	62.0		62.0	62.0	20.0	
Effective Green, g (s)	62.0		62.0	62.0	20.0	
Actuated g/C Ratio	0.69		0.69	0.69	0.22	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Lane Grp Cap (vph)	2259		141	2437	763	
v/s Ratio Prot	0.42			0.19	c0.26	
v/s Ratio Perm			c0.98			
v/c Ratio	0.61		1.43	0.28	1.15	
Uniform Delay, d1	7.5		14.0	5.4	35.0	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.2		230.4	0.3	81.8	
Delay (s)	8.7		244.4	5.7	116.8	
Level of Service	A		F	A	F	
Approach Delay (s)	8.7			60.8	116.8	
Approach LOS	A			E	F	

Intersection Summary			
HCM 2000 Control Delay	51.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

ATTACHMENT C

HCM WORKSHEETS FOR RAMP QUEUE

EXISTING

Queues
1: Inglewood Ave & I-405 NB Ramps

10/29/2015

Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	290	320	1482	655	1080
v/c Ratio	0.62	0.70	0.76	0.59	0.37
Control Delay	25.1	25.2	10.4	4.7	8.4
Queue Delay	0.0	0.0	0.0	0.4	0.0
Total Delay	25.1	25.2	10.4	5.1	8.4
Queue Length 50th (ft)	96	91	205	0	69
Queue Length 95th (ft)	139	143	#70	241	125
Internal Link Dist (ft)	1259		200		697
Turn Bay Length (ft)	630				
Base Capacity (vph)	659	620	1938	1112	2936
Starvation Cap Reductn	0	0	13	132	0
Spillback Cap Reductn	0	0	0	0	43
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	0.52	0.77	0.67	0.37

Intersection Summary

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

Queues
2: Inglewood Ave & I-405 SB Ramps

10/29/2015

Lane Group	EBL	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	153	886	1978	946	386
v/c Ratio	0.45	0.70	0.59	0.68	0.47
Control Delay	26.9	16.1	6.6	13.5	2.4
Queue Delay	0.0	0.0	0.1	0.2	0.2
Total Delay	26.9	16.1	6.7	13.7	2.5
Queue Length 50th (ft)	51	127	121	81	3
Queue Length 95th (ft)	100	185	156	103	10
Internal Link Dist (ft)	1143		915	200	
Turn Bay Length (ft)	110	670			
Base Capacity (vph)	342	1352	3379	1386	819
Starvation Cap Reductn	0	0	0	66	66
Spillback Cap Reductn	0	0	428	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.45	0.66	0.67	0.72	0.51

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	698	1497	0	1471	0	171
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	759	1627	0	1599	0	186
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.82	
vC, conflicting volume			2386		1558	253
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2386		1246	253
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	75
cM capacity (veh/h)			199		136	747

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	303	303	694	1085	799	799	186
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	542	1085	0	0	186
cSH	1700	1700	1700	1700	1700	1700	747
Volume to Capacity	0.18	0.18	0.41	0.64	0.47	0.47	0.25
Queue Length 95th (ft)	0	0	0	0	0	0	25
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.4
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.4
Approach LOS							B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBT	WBT	WBR	SBR
Lane Group Flow (vph)	966	1232	592	421
v/c Ratio	0.27	0.52	0.56	0.56
Control Delay	0.2	12.0	14.0	33.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.2	12.0	14.0	33.6
Queue Length 50th (ft)	0	227	111	132
Queue Length 95th (ft)	0	378	#538	163
Internal Link Dist (ft)	243	1788		
Turn Bay Length (ft)			150	235
Base Capacity (vph)	3539	2382	1065	1170
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.52	0.56	0.36

Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	488	487	498	1341	1820
v/c Ratio	0.97	0.59	0.95	0.37	0.99
Control Delay	61.3	21.9	70.3	7.3	55.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	61.3	21.9	70.3	7.3	55.2
Queue Length 50th (ft)	229	252	378	136	496
Queue Length 95th (ft)	#450	367	#592	159	#619
Internal Link Dist (ft)	1148			1273	554
Turn Bay Length (ft)			395		
Base Capacity (vph)	506	820	525	3598	1840
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.96	0.59	0.95	0.37	0.99

Intersection Summary

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

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	968	184	835	668
v/c Ratio	0.43	0.63	0.37	0.70
Control Delay	4.2	21.9	8.5	33.7
Queue Delay	0.5	0.0	0.0	0.0
Total Delay	4.7	21.9	8.5	33.7
Queue Length 50th (ft)	53	57	107	174
Queue Length 95th (ft)	84	149	141	235
Internal Link Dist (ft)	320		1745	1036
Turn Bay Length (ft)		150		
Base Capacity (vph)	2251	293	2241	956
Starvation Cap Reductn	749	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.64	0.63	0.37	0.70

Intersection Summary

Queues
1: Inglewood Ave & I-405 NB Ramps

10/29/2015

Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	446	373	1204	542	1350
v/c Ratio	0.79	0.65	0.68	0.53	0.51
Control Delay	29.6	18.6	10.1	5.0	11.1
Queue Delay	0.0	0.0	0.0	0.2	0.1
Total Delay	29.6	18.6	10.1	5.2	11.3
Queue Length 50th (ft)	144	83	174	75	117
Queue Length 95th (ft)	229	155	261	163	164
Internal Link Dist (ft)	1259		200		697
Turn Bay Length (ft)	630				
Base Capacity (vph)	659	649	1766	1015	2655
Starvation Cap Reductn	0	0	12	89	0
Spillback Cap Reductn	0	0	0	0	336
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.68	0.57	0.69	0.59	0.58

Intersection Summary

Lane Group	EBL	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	145	1049	1530	1360	436
v/c Ratio	0.42	0.81	0.45	1.04	0.53
Control Delay	26.4	20.3	5.5	52.2	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.1
Total Delay	26.4	20.3	5.5	52.2	2.2
Queue Length 50th (ft)	48	174	82	~326	0
Queue Length 95th (ft)	96	257	106	#421	2
Internal Link Dist (ft)	1143		915	200	
Turn Bay Length (ft)	110	670			
Base Capacity (vph)	342	1321	3379	1303	822
Starvation Cap Reductn	0	0	0	0	44
Spillback Cap Reductn	0	0	229	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.42	0.79	0.49	1.04	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1017	578	0	1579	0	474
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1105	628	0	1716	0	515
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.86	
vC, conflicting volume			1734		1964	368
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1734		1797	368
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	18
cM capacity (veh/h)			360		62	629

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	442	442	431	419	858	858	515
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	209	419	0	0	515
cSH	1700	1700	1700	1700	1700	1700	629
Volume to Capacity	0.26	0.26	0.25	0.25	0.50	0.50	0.82
Queue Length 95th (ft)	0	0	0	0	0	0	213
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	31.5
Lane LOS							D
Approach Delay (s)	0.0				0.0		31.5
Approach LOS							D

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBT	WBT	WBR	SBR
Lane Group Flow (vph)	1741	790	249	924
v/c Ratio	0.49	0.43	0.31	0.72
Control Delay	0.5	18.9	11.0	25.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.5	18.9	11.0	25.0
Queue Length 50th (ft)	0	193	34	249
Queue Length 95th (ft)	0	242	141	336
Internal Link Dist (ft)	243	1788		
Turn Bay Length (ft)			150	235
Base Capacity (vph)	3539	1831	811	1277
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.49	0.43	0.31	0.72

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	406	401	227	2213	1727
v/c Ratio	0.89	0.55	0.57	0.63	0.82
Control Delay	49.6	23.3	46.8	11.2	33.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	23.3	46.8	11.2	33.5
Queue Length 50th (ft)	197	206	151	304	406
Queue Length 95th (ft)	#331	304	246	401	507
Internal Link Dist (ft)	1148			1273	554
Turn Bay Length (ft)			395		
Base Capacity (vph)	545	731	399	3525	2111
Starvation Cap Reductn	0	0	0	0	3
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.74	0.55	0.57	0.63	0.82

Intersection Summary

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

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1536	198	659	854
v/c Ratio	0.63	1.34	0.27	1.12
Control Delay	5.4	211.3	5.7	104.6
Queue Delay	1.3	0.0	0.0	0.0
Total Delay	6.7	211.3	5.7	104.6
Queue Length 50th (ft)	114	~148	65	~291
Queue Length 95th (ft)	167	#199	87	#410
Internal Link Dist (ft)	320		1745	1036
Turn Bay Length (ft)		150		
Base Capacity (vph)	2450	148	2437	763
Starvation Cap Reductn	650	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.85	1.34	0.27	1.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

EXISTING WITH PROJECT

Queues
1: Inglewood Ave & I-405 NB Ramps

10/29/2015

Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	290	320	1484	658	1080
v/c Ratio	0.62	0.70	0.77	0.59	0.37
Control Delay	25.1	25.2	10.4	4.7	8.4
Queue Delay	0.0	0.0	0.0	0.4	0.0
Total Delay	25.1	25.2	10.4	5.2	8.4
Queue Length 50th (ft)	96	91	206	0	69
Queue Length 95th (ft)	139	143	#70	243	125
Internal Link Dist (ft)	1259		200		697
Turn Bay Length (ft)	630				
Base Capacity (vph)	659	620	1938	1114	2936
Starvation Cap Reductn	0	0	13	133	0
Spillback Cap Reductn	0	0	0	0	45
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	0.52	0.77	0.67	0.37

Intersection Summary

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

Lane Group	EBL	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	153	892	1978	951	386
v/c Ratio	0.45	0.71	0.59	0.69	0.47
Control Delay	26.9	16.2	6.6	13.7	2.4
Queue Delay	0.0	0.0	0.1	0.2	0.2
Total Delay	26.9	16.2	6.7	13.9	2.5
Queue Length 50th (ft)	51	128	121	81	3
Queue Length 95th (ft)	100	187	156	103	10
Internal Link Dist (ft)	1143		915	200	
Turn Bay Length (ft)	110	670			
Base Capacity (vph)	342	1351	3379	1383	818
Starvation Cap Reductn	0	0	0	65	66
Spillback Cap Reductn	0	0	426	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.45	0.66	0.67	0.72	0.51

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	698	1498	0	1473	0	171
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	759	1628	0	1601	0	186
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.82	
vC, conflicting volume			2387		1559	253
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2387		1246	253
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	75
cM capacity (veh/h)			199		136	747

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	303	303	694	1086	801	801	186
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	543	1086	0	0	186
cSH	1700	1700	1700	1700	1700	1700	747
Volume to Capacity	0.18	0.18	0.41	0.64	0.47	0.47	0.25
Queue Length 95th (ft)	0	0	0	0	0	0	25
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.4
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.4
Approach LOS							B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBT	WBT	WBR	SBR
Lane Group Flow (vph)	966	1232	592	423
v/c Ratio	0.27	0.52	0.56	0.56
Control Delay	0.2	12.1	14.0	33.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.2	12.1	14.0	33.6
Queue Length 50th (ft)	0	227	111	133
Queue Length 95th (ft)	0	380	#539	164
Internal Link Dist (ft)	243	1788		
Turn Bay Length (ft)			150	235
Base Capacity (vph)	3539	2380	1064	1170
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.27	0.52	0.56	0.36

Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	488	487	498	1341	1822
v/c Ratio	0.97	0.59	0.95	0.37	0.99
Control Delay	61.3	21.9	70.3	7.3	55.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	61.3	21.9	70.3	7.3	55.4
Queue Length 50th (ft)	229	252	378	136	497
Queue Length 95th (ft)	#450	367	#592	159	#620
Internal Link Dist (ft)	1148			1273	554
Turn Bay Length (ft)			395		
Base Capacity (vph)	506	820	525	3598	1840
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.96	0.59	0.95	0.37	0.99

Intersection Summary

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

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	968	184	835	670
v/c Ratio	0.43	0.63	0.37	0.70
Control Delay	4.2	21.9	8.5	33.7
Queue Delay	0.5	0.0	0.0	0.0
Total Delay	4.7	21.9	8.5	33.7
Queue Length 50th (ft)	53	57	107	175
Queue Length 95th (ft)	84	149	141	236
Internal Link Dist (ft)	320		1745	1036
Turn Bay Length (ft)		150		
Base Capacity (vph)	2251	293	2241	956
Starvation Cap Reductn	749	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.64	0.63	0.37	0.70

Intersection Summary

Queues
1: Inglewood Ave & I-405 NB Ramps

10/29/2015

Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	446	373	1217	539	1350
v/c Ratio	0.79	0.65	0.69	0.53	0.51
Control Delay	29.6	18.6	10.2	4.9	11.1
Queue Delay	0.0	0.0	0.0	0.2	0.1
Total Delay	29.6	18.6	10.2	5.2	11.3
Queue Length 50th (ft)	144	83	176	74	117
Queue Length 95th (ft)	229	155	264	160	164
Internal Link Dist (ft)	1259		200		697
Turn Bay Length (ft)	630				
Base Capacity (vph)	659	649	1765	1014	2655
Starvation Cap Reductn	0	0	8	89	0
Spillback Cap Reductn	0	0	0	0	353
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.68	0.57	0.69	0.58	0.59

Intersection Summary

Lane Group	EBL	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	145	1064	1530	1370	436
v/c Ratio	0.42	0.82	0.45	1.06	0.53
Control Delay	26.4	20.8	5.5	56.1	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.1
Total Delay	26.4	20.8	5.5	56.1	2.3
Queue Length 50th (ft)	48	178	82	~331	0
Queue Length 95th (ft)	96	#267	106	#426	2
Internal Link Dist (ft)	1143		915	200	
Turn Bay Length (ft)	110	670			
Base Capacity (vph)	342	1320	3379	1298	821
Starvation Cap Reductn	0	0	0	0	45
Spillback Cap Reductn	0	0	235	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.42	0.81	0.49	1.06	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1017	581	0	1584	0	474
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1105	632	0	1722	0	515
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.86	
vC, conflicting volume			1737		1966	368
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1737		1801	368
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	18
cM capacity (veh/h)			358		61	629

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	442	442	432	421	861	861	515
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	211	421	0	0	515
cSH	1700	1700	1700	1700	1700	1700	629
Volume to Capacity	0.26	0.26	0.25	0.25	0.51	0.51	0.82
Queue Length 95th (ft)	0	0	0	0	0	0	213
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	31.5
Lane LOS							D
Approach Delay (s)	0.0				0.0		31.5
Approach LOS							D

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBT	WBT	WBR	SBR
Lane Group Flow (vph)	1741	790	249	929
v/c Ratio	0.49	0.43	0.31	0.73
Control Delay	0.5	18.9	11.0	25.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.5	18.9	11.0	25.2
Queue Length 50th (ft)	0	193	34	251
Queue Length 95th (ft)	0	242	141	340
Internal Link Dist (ft)	243	1788		
Turn Bay Length (ft)			150	235
Base Capacity (vph)	3539	1831	811	1277
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.49	0.43	0.31	0.73

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	406	401	227	2213	1733
v/c Ratio	0.89	0.55	0.57	0.63	0.82
Control Delay	49.6	23.3	46.8	11.2	33.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	23.3	46.8	11.2	33.7
Queue Length 50th (ft)	197	206	151	304	409
Queue Length 95th (ft)	#331	304	246	401	510
Internal Link Dist (ft)	1148			1273	554
Turn Bay Length (ft)			395		
Base Capacity (vph)	545	731	399	3525	2111
Starvation Cap Reductn	0	0	0	0	3
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.74	0.55	0.57	0.63	0.82

Intersection Summary

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

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1536	198	659	859
v/c Ratio	0.63	1.34	0.27	1.12
Control Delay	5.4	211.3	5.7	106.4
Queue Delay	1.3	0.0	0.0	0.0
Total Delay	6.7	211.3	5.7	106.4
Queue Length 50th (ft)	114	~148	65	~294
Queue Length 95th (ft)	167	#199	87	#413
Internal Link Dist (ft)	320		1745	1036
Turn Bay Length (ft)		150		
Base Capacity (vph)	2450	148	2437	764
Starvation Cap Reductn	650	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.85	1.34	0.27	1.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

FUTURE 2019 WITHOUT PROJECT

Queues
1: Inglewood Ave & I-405 NB Ramps

10/30/2015

Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	297	326	1514	670	1104
v/c Ratio	0.63	0.71	0.79	0.60	0.38
Control Delay	25.0	25.7	11.1	4.9	8.6
Queue Delay	0.0	0.0	0.0	0.4	0.0
Total Delay	25.0	25.7	11.1	5.3	8.6
Queue Length 50th (ft)	98	95	217	0	73
Queue Length 95th (ft)	143	148	#79	252	128
Internal Link Dist (ft)	1259		200		697
Turn Bay Length (ft)	630				
Base Capacity (vph)	659	618	1924	1115	2914
Starvation Cap Reductn	0	0	13	134	0
Spillback Cap Reductn	0	0	0	0	47
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.45	0.53	0.79	0.68	0.39

Intersection Summary

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

Lane Group	EBL	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	157	905	2022	967	395
v/c Ratio	0.46	0.72	0.60	0.70	0.48
Control Delay	27.2	16.5	6.7	13.9	2.4
Queue Delay	0.0	0.0	0.2	0.2	0.2
Total Delay	27.2	16.5	6.9	14.1	2.6
Queue Length 50th (ft)	53	131	126	82	3
Queue Length 95th (ft)	103	192	161	104	10
Internal Link Dist (ft)	1143		915	200	
Turn Bay Length (ft)	110	670			
Base Capacity (vph)	342	1349	3379	1377	821
Starvation Cap Reductn	0	0	0	55	65
Spillback Cap Reductn	0	0	477	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.67	0.70	0.73	0.52

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	713	1530	0	1503	0	175
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	775	1663	0	1634	0	190
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.81	
vC, conflicting volume			2438		1592	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2438		1264	258
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	74
cM capacity (veh/h)			190		131	741

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	310	310	709	1109	817	817	190
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	554	1109	0	0	190
cSH	1700	1700	1700	1700	1700	1700	741
Volume to Capacity	0.18	0.18	0.42	0.65	0.48	0.48	0.26
Queue Length 95th (ft)	0	0	0	0	0	0	26
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.5
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.5
Approach LOS							B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBT	WBT	WBR	SBR
Lane Group Flow (vph)	987	1259	605	429
v/c Ratio	0.28	0.53	0.57	0.56
Control Delay	0.2	12.7	14.6	33.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.2	12.7	14.6	33.7
Queue Length 50th (ft)	0	238	119	137
Queue Length 95th (ft)	0	402	#571	166
Internal Link Dist (ft)	243	1788		
Turn Bay Length (ft)			150	235
Base Capacity (vph)	3539	2357	1056	1167
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.28	0.53	0.57	0.37

Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	498	498	509	1371	1860
v/c Ratio	1.01	0.62	0.99	0.38	0.98
Control Delay	70.7	23.7	80.8	7.1	51.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	70.7	23.7	80.8	7.1	51.8
Queue Length 50th (ft)	~249	270	393	135	502
Queue Length 95th (ft)	#476	393	#620	158	#621
Internal Link Dist (ft)	1148			1273	554
Turn Bay Length (ft)			395		
Base Capacity (vph)	493	801	513	3627	1902
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.01	0.62	0.99	0.38	0.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	989	188	853	682
v/c Ratio	0.44	0.66	0.38	0.71
Control Delay	4.2	24.4	8.6	34.1
Queue Delay	0.5	0.0	0.0	0.0
Total Delay	4.7	24.4	8.6	34.1
Queue Length 50th (ft)	54	61	111	178
Queue Length 95th (ft)	86	#186	145	241
Internal Link Dist (ft)	320		1745	1036
Turn Bay Length (ft)		150		
Base Capacity (vph)	2255	285	2241	956
Starvation Cap Reductn	742	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.65	0.66	0.38	0.71

Intersection Summary

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

Queues
1: Inglewood Ave & I-405 NB Ramps

10/29/2015

Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	455	380	1229	554	1379
v/c Ratio	0.80	0.67	0.70	0.54	0.52
Control Delay	30.0	19.2	10.4	5.1	11.4
Queue Delay	0.0	0.0	0.0	0.2	0.1
Total Delay	30.0	19.2	10.5	5.3	11.5
Queue Length 50th (ft)	146	86	182	78	122
Queue Length 95th (ft)	235	162	269	167	168
Internal Link Dist (ft)	1259		200		697
Turn Bay Length (ft)	630				
Base Capacity (vph)	659	646	1756	1018	2640
Starvation Cap Reductn	0	0	7	92	0
Spillback Cap Reductn	0	0	0	0	349
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.69	0.59	0.70	0.60	0.60

Intersection Summary

Lane Group	EBL	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	148	1072	1564	1389	446
v/c Ratio	0.43	0.83	0.46	1.07	0.54
Control Delay	26.6	21.1	5.6	61.7	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.2
Total Delay	26.6	21.1	5.6	61.7	2.3
Queue Length 50th (ft)	49	181	85	~340	0
Queue Length 95th (ft)	97	#273	110	#433	3
Internal Link Dist (ft)	1143		915	200	
Turn Bay Length (ft)	110	670			
Base Capacity (vph)	342	1319	3379	1296	826
Starvation Cap Reductn	0	0	0	0	48
Spillback Cap Reductn	0	0	254	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.43	0.81	0.50	1.07	0.57

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1039	591	0	1613	0	484
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1129	642	0	1753	0	526
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.86	
vC, conflicting volume			1772		2006	376
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1772		1841	376
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	15
cM capacity (veh/h)			347		57	621

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	452	452	440	428	877	877	526
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	214	428	0	0	526
cSH	1700	1700	1700	1700	1700	1700	621
Volume to Capacity	0.27	0.27	0.26	0.25	0.52	0.52	0.85
Queue Length 95th (ft)	0	0	0	0	0	0	233
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	34.6
Lane LOS							D
Approach Delay (s)	0.0				0.0		34.6
Approach LOS							D

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBT	WBT	WBR	SBR
Lane Group Flow (vph)	1779	808	254	945
v/c Ratio	0.50	0.44	0.31	0.74
Control Delay	0.5	19.1	11.2	26.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.5	19.1	11.2	26.3
Queue Length 50th (ft)	0	198	36	265
Queue Length 95th (ft)	0	248	147	355
Internal Link Dist (ft)	243	1788		
Turn Bay Length (ft)			150	235
Base Capacity (vph)	3539	1831	811	1270
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.50	0.44	0.31	0.74

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	415	410	233	2261	1765
v/c Ratio	0.89	0.56	0.59	0.64	0.84
Control Delay	50.9	23.6	47.7	11.7	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	23.6	47.7	11.7	34.8
Queue Length 50th (ft)	205	213	158	327	428
Queue Length 95th (ft)	#361	313	253	415	524
Internal Link Dist (ft)	1148			1273	554
Turn Bay Length (ft)			395		
Base Capacity (vph)	543	735	397	3507	2101
Starvation Cap Reductn	0	0	0	0	3
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.76	0.56	0.59	0.64	0.84

Intersection Summary

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

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1569	202	673	872
v/c Ratio	0.64	1.43	0.28	1.14
Control Delay	5.6	251.2	5.7	112.7
Queue Delay	1.5	0.0	0.0	0.0
Total Delay	7.1	251.2	5.7	112.7
Queue Length 50th (ft)	122	~157	66	~302
Queue Length 95th (ft)	176	#214	90	#421
Internal Link Dist (ft)	320		1745	1036
Turn Bay Length (ft)		150		
Base Capacity (vph)	2451	141	2437	764
Starvation Cap Reductn	636	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.86	1.43	0.28	1.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

FUTURE 2019 WITH PROJECT

Queues
1: Inglewood Ave & I-405 NB Ramps

10/29/2015

Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	297	326	1516	672	1104
v/c Ratio	0.63	0.71	0.79	0.60	0.38
Control Delay	25.0	25.7	11.1	4.9	8.6
Queue Delay	0.0	0.0	0.0	0.5	0.0
Total Delay	25.0	25.7	11.2	5.4	8.6
Queue Length 50th (ft)	98	95	218	0	73
Queue Length 95th (ft)	143	148	#80	253	128
Internal Link Dist (ft)	1259		200		697
Turn Bay Length (ft)	630				
Base Capacity (vph)	659	618	1925	1116	2914
Starvation Cap Reductn	0	0	13	135	0
Spillback Cap Reductn	0	0	0	0	49
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.45	0.53	0.79	0.69	0.39

Intersection Summary

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

Lane Group	EBL	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	157	912	2022	971	395
v/c Ratio	0.46	0.72	0.60	0.71	0.48
Control Delay	27.2	16.6	6.7	14.1	2.4
Queue Delay	0.0	0.0	0.2	0.2	0.2
Total Delay	27.2	16.6	6.9	14.3	2.6
Queue Length 50th (ft)	53	132	126	83	3
Queue Length 95th (ft)	103	196	161	105	10
Internal Link Dist (ft)	1143		915	200	
Turn Bay Length (ft)	110	670			
Base Capacity (vph)	342	1349	3379	1372	820
Starvation Cap Reductn	0	0	0	52	65
Spillback Cap Reductn	0	0	473	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.68	0.70	0.74	0.52

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	713	1531	0	1505	0	175
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	775	1664	0	1636	0	190
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.81	
vC, conflicting volume			2439		1593	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2439		1262	258
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	74
cM capacity (veh/h)			190		131	741

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	310	310	710	1109	818	818	190
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	555	1109	0	0	190
cSH	1700	1700	1700	1700	1700	1700	741
Volume to Capacity	0.18	0.18	0.42	0.65	0.48	0.48	0.26
Queue Length 95th (ft)	0	0	0	0	0	0	26
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.5
Lane LOS							B
Approach Delay (s)	0.0				0.0		11.5
Approach LOS							B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBT	WBT	WBR	SBR
Lane Group Flow (vph)	987	1259	605	432
v/c Ratio	0.28	0.54	0.58	0.56
Control Delay	0.2	13.1	14.9	33.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.2	13.1	14.9	33.3
Queue Length 50th (ft)	0	240	119	138
Queue Length 95th (ft)	0	410	#578	165
Internal Link Dist (ft)	243	1788		
Turn Bay Length (ft)			150	235
Base Capacity (vph)	3539	2344	1051	1167
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.28	0.54	0.58	0.37

Intersection Summary

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

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	498	498	509	1371	1862
v/c Ratio	1.01	0.62	0.99	0.38	0.98
Control Delay	70.7	23.7	80.8	7.1	52.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	70.7	23.7	80.8	7.1	52.0
Queue Length 50th (ft)	~249	270	393	135	502
Queue Length 95th (ft)	#476	393	#620	158	#623
Internal Link Dist (ft)	1148			1273	554
Turn Bay Length (ft)			395		
Base Capacity (vph)	493	801	513	3627	1902
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.01	0.62	0.99	0.38	0.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	989	188	853	684
v/c Ratio	0.44	0.66	0.38	0.72
Control Delay	4.2	24.4	8.6	34.2
Queue Delay	0.5	0.0	0.0	0.0
Total Delay	4.7	24.4	8.6	34.2
Queue Length 50th (ft)	54	61	111	179
Queue Length 95th (ft)	86	#186	145	241
Internal Link Dist (ft)	320		1745	1036
Turn Bay Length (ft)		150		
Base Capacity (vph)	2255	285	2241	956
Starvation Cap Reductn	742	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.65	0.66	0.38	0.72

Intersection Summary

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

Queues
1: Inglewood Ave & I-405 NB Ramps

10/30/2015

Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	455	380	1242	551	1379
v/c Ratio	0.80	0.67	0.71	0.54	0.52
Control Delay	30.0	19.2	10.6	5.1	11.4
Queue Delay	0.0	0.0	0.0	0.2	0.1
Total Delay	30.0	19.2	10.6	5.3	11.5
Queue Length 50th (ft)	146	86	184	76	122
Queue Length 95th (ft)	235	162	273	165	168
Internal Link Dist (ft)	1259		200		697
Turn Bay Length (ft)	630				
Base Capacity (vph)	659	646	1756	1017	2640
Starvation Cap Reductn	0	0	8	90	0
Spillback Cap Reductn	0	0	0	0	357
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.69	0.59	0.71	0.59	0.60

Intersection Summary

Lane Group	EBL	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	148	1087	1564	1399	446
v/c Ratio	0.43	0.84	0.46	1.08	0.54
Control Delay	26.6	21.7	5.6	65.7	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.2
Total Delay	26.6	21.7	5.6	65.7	2.3
Queue Length 50th (ft)	49	185	85	~344	0
Queue Length 95th (ft)	97	#288	110	#438	3
Internal Link Dist (ft)	1143		915	200	
Turn Bay Length (ft)	110	670			
Base Capacity (vph)	342	1319	3379	1293	826
Starvation Cap Reductn	0	0	0	0	48
Spillback Cap Reductn	0	0	271	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.43	0.82	0.50	1.08	0.57

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1039	594	0	1618	0	484
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1129	646	0	1759	0	526
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				450		
pX, platoon unblocked					0.86	
vC, conflicting volume			1775		2009	376
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1775		1844	376
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	15
cM capacity (veh/h)			346		57	621

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	NB 1
Volume Total	452	452	441	430	879	879	526
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	215	430	0	0	526
cSH	1700	1700	1700	1700	1700	1700	621
Volume to Capacity	0.27	0.27	0.26	0.25	0.52	0.52	0.85
Queue Length 95th (ft)	0	0	0	0	0	0	233
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	34.6
Lane LOS							D
Approach Delay (s)	0.0				0.0		34.6
Approach LOS							D

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBT	WBT	WBR	SBR
Lane Group Flow (vph)	1779	808	254	950
v/c Ratio	0.50	0.44	0.31	0.75
Control Delay	0.5	19.1	11.2	26.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.5	19.1	11.2	26.5
Queue Length 50th (ft)	0	198	36	268
Queue Length 95th (ft)	0	248	147	359
Internal Link Dist (ft)	243	1788		
Turn Bay Length (ft)			150	235
Base Capacity (vph)	3539	1831	811	1270
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.50	0.44	0.31	0.75

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	415	410	233	2261	1771
v/c Ratio	0.90	0.56	0.59	0.64	0.83
Control Delay	52.7	24.2	48.3	11.5	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.1
Total Delay	52.7	24.2	48.3	11.5	34.4
Queue Length 50th (ft)	210	216	161	334	435
Queue Length 95th (ft)	#373	318	253	404	518
Internal Link Dist (ft)	1148			1273	554
Turn Bay Length (ft)			395		
Base Capacity (vph)	525	729	394	3520	2126
Starvation Cap Reductn	0	0	0	0	29
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.79	0.56	0.59	0.64	0.84

Intersection Summary

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

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1569	202	673	878
v/c Ratio	0.64	1.43	0.28	1.15
Control Delay	5.6	251.2	5.7	115.6
Queue Delay	1.5	0.0	0.0	0.0
Total Delay	7.1	251.2	5.7	115.6
Queue Length 50th (ft)	122	~157	66	~306
Queue Length 95th (ft)	176	#214	90	#425
Internal Link Dist (ft)	320		1745	1036
Turn Bay Length (ft)		150		
Base Capacity (vph)	2451	141	2437	764
Starvation Cap Reductn	636	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.86	1.43	0.28	1.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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