Appendix I Transportation Impact Study

Appendices

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Century Villages at Cabrillo Specific Plan

Transportation Impact Study

Prepared for:
T&B Planning and Placeworks

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LB19-0001

FEHR PEERS

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1. Introduction

This report documents the assumptions, methodologies, and findings of a transportation impact study conducted by Fehr & Peers to evaluate the potential transportation impacts of the Century Villages at Cabrillo (CVC) Specific Plan Project (herein after referred to as the "Project") in the City of Long Beach, California, on an approximately 27-acre site located to the north of Pacific Coast Highway between SR-103 and Cabrillo High School.

1.1 Project Description

The Project is proposed to be developed in the City of Long Beach of Los Angeles County on a site currently containing the existing CVC campus site. It is located approximately 2.5 miles northwest of Downtown Long Beach and approximately 1.5 miles north of the Port of Long Beach. The Project site is comprised of approximately 27 acres located to the north of Pacific Coast Highway (PCH) between SR-103 and the LBUSD Cabrillo High School. The Project site is bounded by Cabrillo High School to the north and east, SR-103 to the west, and 20th Street and warehousing industrial uses to the south. PCH is located just further south of the industrial uses and 20th Street. **Figure 1** illustrates the Project site plan.

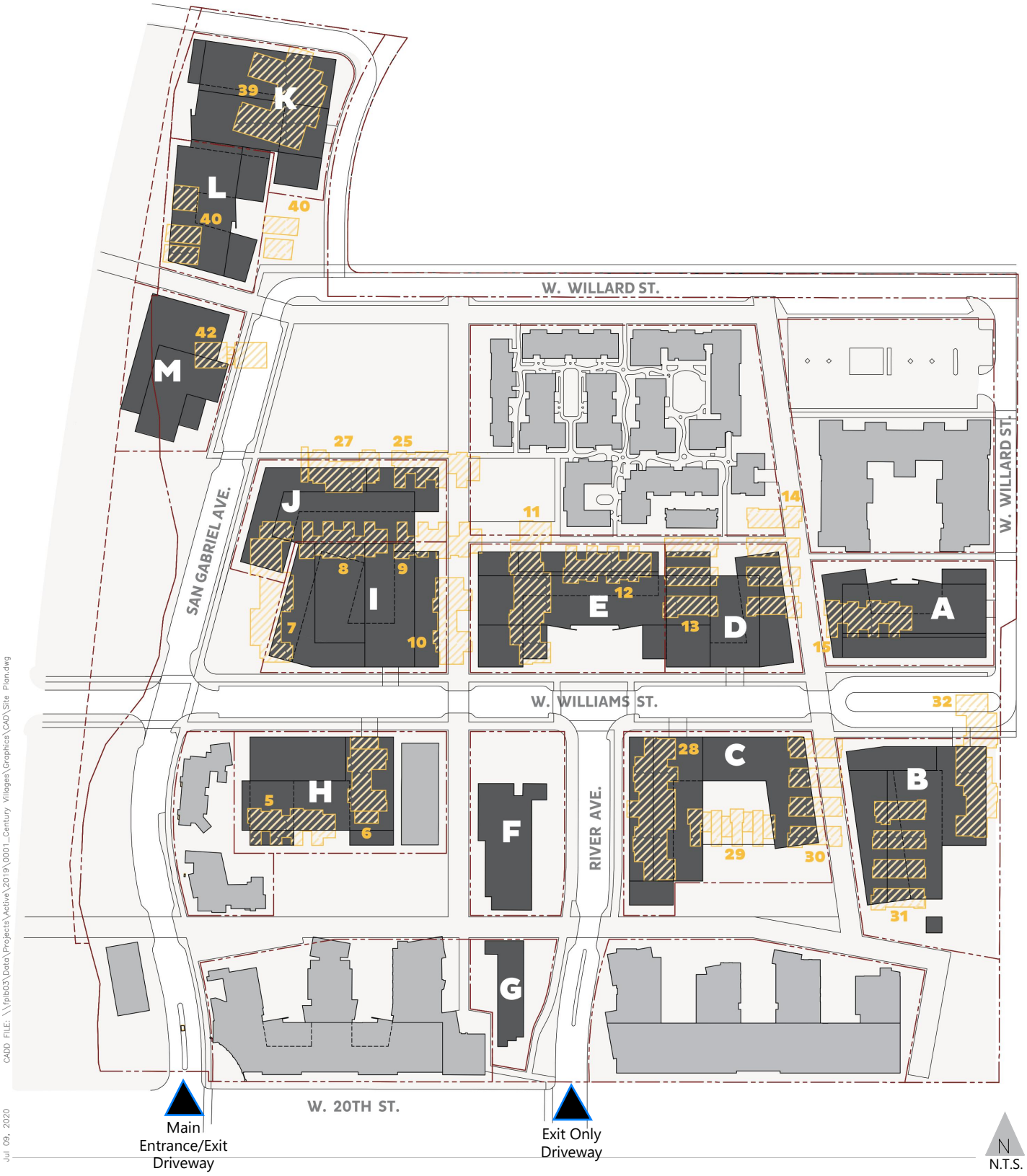
The Project involves the reconstruction of significant portions of the CVC area to provide for more affordable housing units and additional community supporting uses for a total of approximately 1,458,597 square feet (sf) of proposed new development. Along with structures to remain, the CVC campus site will contain 1,967,627 sf after full buildout of the Project. The Project will open in phases up till the year 2033. The Project will specifically include the following:

- 750 affordable/supportive housing units to replace 235 affordable/supportive housing units for a total of 1,380 affordable/supportive housing units
- 77,000 sf of Indoor Amenities to replace 10,030 sf of Indoor Amenities for a total of 79,350 sf
- 15,000 sf of Educational uses to replace 10,200 sf of Educational uses for a total of 15,000 sf
- 17,000 sf of additional Commercial/Retail uses for a total of 22,850 sf
- 48,000 sf of Administrative and Supportive Services uses to replace 7,250 sf of Administrative and Supportive Services uses for a total of 67,050 sf

All existing and proposed non-residential land uses are residential site serving and not open to the public. Access to the CVC campus is controlled at all times. The Project, as illustrated in the site plan in **Figure 1**, will maintain existing unsignalized access and egress at two driveway locations. The main Project driveway will remain at the stop-controlled intersection of San Gabriel Avenue and SR-103 Northbound Ramps/20th Street, which provides both access and egress. Site access will also be maintained by an egress only stop-controlled driveway at the intersection of River Avenue/Technology Place and 20th Street. There are no other vehicular access points to CVC. However, direct pedestrian access to Cabrillo High School is provided during school hours for students who live in CVC.

1.2 Study Scope

This transportation impact study will be incorporated into the environmental impact report (EIR) being prepared for the Project and follows the California Environmental Quality Act (CEQA) guidance for determining transportation impacts in accordance with Senate Bill (SB) 743. The scope of this study was documented in a Methodologies and Assumptions Memorandum which was approved by the City of Long Beach in February 2020. A copy of the Methodologies and Assumptions Memorandum is provided in **Appendix A**.



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Jul 09, 2020

Figure 1

Full Project Buildout Site Plan
Century Villages at Cabrillo Specific Plan

CONCEPTUAL - NOT FOR CONSTRUCTION.

2. Existing Conditions

A comprehensive data collection effort was undertaken to develop a detailed description of the existing transportation system in the study area. The assessment of conditions relevant to this study includes a description of the study area, an inventory of the local street system near the Project site, the existing and planned bicycle and pedestrian facilities, and the current transit service in the study area.

2.1 Study Area

The Project Site is within the Westside area of the City of Long Beach. The Project Site is bound by SR-103 (Terminal Island (TI) Freeway) to the west, Cabrillo High School to the north and east, and 20th Street to the south. Further to the south is SR-1 (Pacific Coast Highway (PCH)), which provides primary access to the CVC area from San Gabriel Avenue, Technology Place, and 20th Street. No vehicular access is provided to Cabrillo High School to the north or east, but students who live in CVC are allowed to walk directly into Cabrillo High School via a pedestrian gate without needing to walk down to PCH.

Existing Street System

Major roadways serving the study area include PCH in the east/west direction and Santa Fe Avenue in the north/south direction. I-710 (the Long Beach Freeway) lies ¾ mile to the east of the site. This freeway provides regional access to and from the study area and Downtown Long Beach to the south and the San Gabriel Valley to the north. I-405 (the San Diego Freeway) lies approximately 2¼ miles to the north of the Project site. This freeway also provides regional access to and from the study area and the South Bay region to the northwest and Orange County to the southeast. Lastly, SR-103 lies just west of the site. This short freeway provides local access to and from the study area and the LA/LB port complex to the south and Willow Street to the north.

The characteristics of the major roadways serving the study area are described below. The street descriptions include the designation of the roadway under the *Mobility Element, An Element of the General Plan* adopted by the Long Beach City Council in October 2013. The Mobility Element states the City's street standards to create a better balance between traffic flow and other important street functions including transit routes and stops, pedestrian environments, bicycle routes, building design and site access. The roadways in the study area are defined as follows in the Mobility Element.

- Freeways – High-volume, high-speed roadways with limited access provided by interchanges that carry regional traffic through and do not provide local access to adjacent land uses.
- Regional Corridor – Design for intraregional and intercommunity mobility, these corridors emphasize traffic movement and include signalized pedestrian crossings. The adjacent land uses should provide continuous mixed-use and commercial land uses with adequate off-street parking to minimize dependency on on-street parking.

- Boulevard – Characterized by a long-distance, medium-speed corridor that traverses an urbanized area, boulevards consist of four or fewer vehicle travel lanes, a balanced multimodal function, landscaped medians, on-street parking, narrower travel lanes, more intensive land use oriented to the street, and wide sidewalks. Buildings uniformly line the edges.
- Major Avenue – A major avenue serves as the major route for the movement of traffic within the City as well as a connector to neighboring cities. Most traffic using a major avenue will end the trip within the City (as opposed to through-traffic). As such, design treatment and traffic operation should give preference to this type of traffic. Long corridors with typically four or more lanes, avenues may be high-transit ridership corridors. Goods movement is typically limited to local routes and deliveries.
- Minor Avenue – A minor avenue provides for the movement of traffic to neighborhood activity centers and serves as a route between neighborhoods. Avenues serve as a primary bicycle route and may serve local transit routes as well.
- Neighborhood Connector – A neighborhood connector street serves trips generated in surrounding or adjacent neighborhoods and should discourage through-trips that do not end within the neighborhood. Goods movement is restricted to local deliveries only.
- Local Street – Local streets primarily provide access to individual residential parcels. The streets are generally two lanes with on-street parking, tree planting strips, and sidewalks. Traffic on a local street should have a trip end on that street, or on a connecting local street, or to a connector.

Listed below are the primary freeways and streets that provide regional and local access to the study area.

Freeways

- **I-710 (the Long Beach Freeway)** runs in the north/south direction, extending from Alhambra to Long Beach. At PCH, I-710 provides three lanes in each direction. I-710 is approximately 0.75 miles to the east of the Project. Access to the Project Site study area is provided by ramps at PCH.

- **I-405 (the San Diego Freeway)** runs in the northwest/southeast direction, extending from the Westside of Los Angeles County to Orange County. At Santa Fe Avenue, I-405 provides five lanes in each direction. I-405 is approximately 2.3 miles to the north of the Project. Interchanges providing access to the Project Site study area include Santa Fe Avenue and Alameda Street.

- **SR-103 (the Terminal Island (TI) Freeway)** is a short freeway stub that runs in the north/south direction, extending from the Ports of LA and LB to Willow Street. At PCH, SR-103 provides two lanes in each direction. SR-103 is adjacent to the west of the Project. North of PCH, SR-103 is under City of Long Beach jurisdiction and is designated as a Boulevard. Access to the Project Site is provided by an interchange serving PCH and the Project driveway intersection at SR-103 NB Ramps/20th Street and San Gabriel Avenue.

East - West Streets

- **Pacific Coast Highway (PCH)** is designated as a Regional Corridor located south of the Project site and has two to three lanes in each direction. Parking is generally permitted on both sides of the street. Left-turn pockets are present at all intersections in the study area via a two-way left-turn lane (TWLTL).

- **20th Street** is designated as a private Local Street located adjacent to the Project site to the south and has one lane in each direction. Parking is not permitted on both sides of the street.

- **Technology Place** is designated as a private Local Street located south of the Project site and has one lane in each direction. Parking is not permitted on both sides of the street. Technology Place also runs north/south and provides access from 20th Street to PCH.

- **Willow Street** is designated as a Boulevard located north of the Project site and has two lanes in each direction. Parking is generally permitted on both sides of the street. Left-turn pockets are present at all intersections in the study area via a landscaped median.

- **Williams Street** is an internal local street within the CVC campus and has one lane in each direction. Parking is permitted on both sides of the street.

North - South Streets

- **San Gabriel Avenue** is designated as a Local Street located on the western edge of the Project site and has one lane in each direction. Parking is not permitted on both sides of the street outside the CVC campus. San Gabriel Avenue continues into the CVC campus via its main entry driveway gate, and parking is permitted on both sides of the street.

- **River Avenue** is an internal local street within the CVC campus and has one lane in each direction. Parking is generally permitted on both sides of the street. River Avenue turns into Technology Place at the exit only driveway of the CVC campus.

- **Santa Fe Avenue** is designated as a Major Avenue located east of the Project site and has two lanes in each direction. Parking is permitted on both sides of the street. Left-turn pockets are present at all intersections in the study area via a landscaped median.

- **Judson Avenue** is designated as a Local Street located south of the Project site and has one lane in each direction. Parking is permitted on both sides of the street.

- **Harbor Avenue** is designated as a Neighborhood Connector located east of the Project site and has one lane in each direction. Parking is permitted on both sides of the street.

- **Magnolia Avenue** is designated as a Minor Avenue south of PCH and a Neighborhood Connector north of PCH. It has one lane in each direction and parking is permitted on both sides of the street. Left-turn pockets are present at all intersections in the study area.

- **Alameda Street (SR-47)** is located within the City of Los Angeles and City of Carson. It is designated as a Boulevard II in Los Angeles and a Major Highway in Carson. Alameda Street is located west of the Project Site on the east and has three lanes in each direction. Parking is not permitted on both sides of the street.

2.2 Existing Public Transit Service

The Project Site is served by a number of public transit lines, and contains the West Long Beach Transit Center, or CVC Transit Center. **Figure 2** shows the various transit routes providing service in the study area. The Project site currently has a bus stop within the CVC campus at the Williams Street and River Avenue intersections. This bus stop serves the terminus of Long Beach Transit Lines 171, 175, and 176. PCH is served also served by the aforementioned routes and Torrance Transit Route 3. Torrance Transit Route R3 provides parallel rapid bus service on PCH with a stop further from the CVC campus. Santa Fe Avenue is served by Long Beach Transit Routes 191 and 192. Detailed transit service information is provided in **Table 1**.

2.3 Existing Bicycle and Pedestrian Facilities

Figure 3 shows citywide existing and planned designated bicycle facilities in the Project area. Currently there are few existing bicycle facilities within ½ mile of the Project. PCH and Santa Fe Avenue are designated bicycle routes.

Pedestrian sidewalks and curb ramps are present in the Project study area, which connect the CVC campus to PCH and other destinations. However, sidewalks are not present on San Gabriel Avenue, PCH west of Technology Place/Judson Avenue, and the north side of 20th Street adjacent to the Project site. A full sidewalk network is existing within the CVC campus. Because the CVC campus has controlled access, pedestrian entry/exit is limited to gates at both driveway intersections. Additional pedestrian access is provided to Cabrillo High School during school hours only for students who live at CVC.

TABLE 1
EXISTING TRANSIT SERVICE (AS OF FEBRUARY 2020)

Line Number	Operator	Service Type	Service From	Via	Weekday Headways AM Peak Period	Weekday Headways PM Peak Period
171/175	Long Beach Transit	Local	Century Villages at Cabrillo to Seal Beach	Pacific Coast Hwy, CSULB	12 min	12 min
176	Long Beach Transit	Local	Century Villages at Cabrillo to Lakewood Mall	Pacific Coast Hwy, Long Beach Airport	30 min	30 min
191/192	Long Beach Transit	Local	Downtown Long Beach to Lakewood	Santa Fe Av, Del Amo Bl, South St	10 min	10 min
3	Torrance Transit	Local	Redondo Beach/Torrance to Long Beach	Torrance Bl, Carson St, Main St, Pacific Coast Hwy, Pacific Av	20-30 min	20-30 min

Note:

Following the outbreak of COVID-19 in Southern California, local transit agencies adjusted service scheudules to accomdoate the change in ridership. The information provided in the table reflects the service schedules at the time of the study Notice of Preperation date which accounted for typical transit operations.

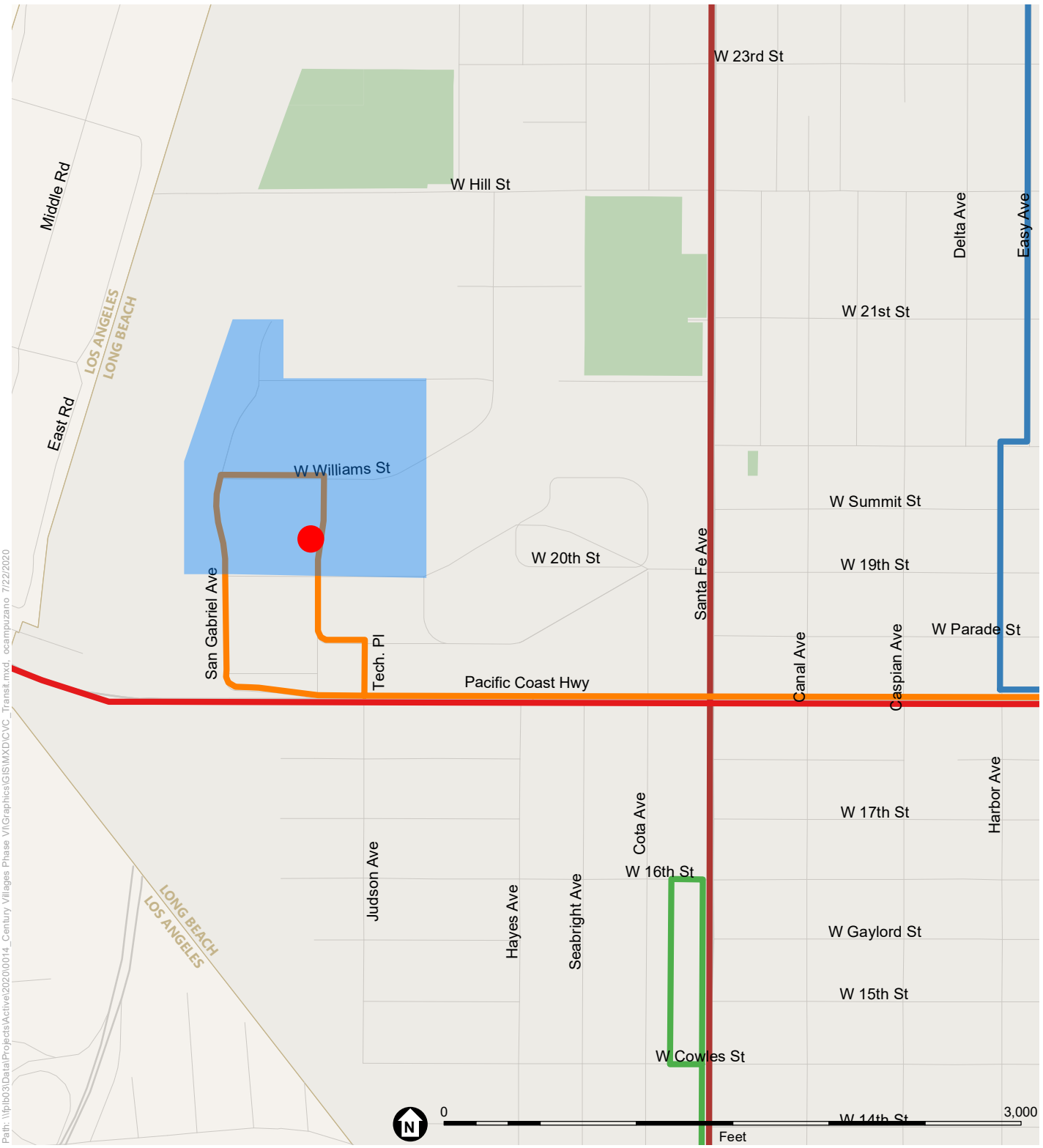
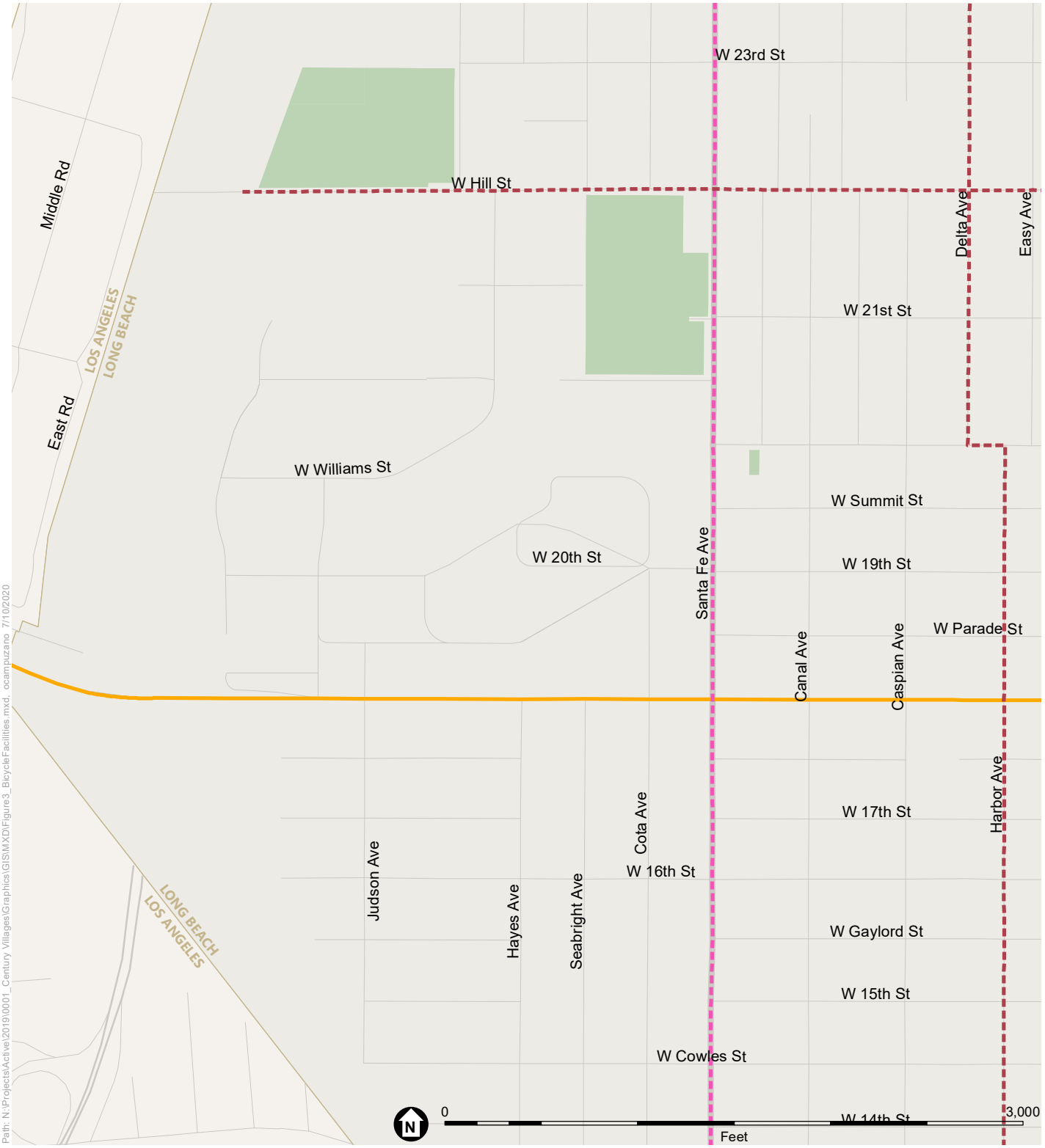


Figure 2

Existing Transit



Existing Bikeways
- Class III

Planned Bikeways
- Bicycle Boulevard
- Class III

Figure 3

Existing and Planned Bicycle Facilities

3. SB 743 Overview

On September 27, 2013, Governor Jerry Brown signed SB 743 into law and started a process to fundamentally change transportation impact analysis conducted as part of CEQA compliance. OPR was charged with developing new guidelines for evaluating transportation impacts under CEQA using methods that no longer focus on measuring automobile delay and level of service (LOS). This change at the state level recognizes the unintended consequences of using LOS as an impact metric, which results in understating potential transportation impacts in greenfield areas and discouraging more sustainable infill projects and active transportation projects. SB 743 directs agencies to develop new guidelines that use a transportation performance metric which will help promote: the reduction of greenhouse gas emissions, the development of multimodal networks, and a more sustainable diversity of land uses.

OPR issued proposed updates to the CEQA guidelines in support of these goals in November 2017[1] and a supporting technical advisory in December 2018[2]. The updates establish vehicle miles travelled (VMT) as the primary metric for evaluating a project's environmental impacts on the transportation system. The changes to CEQA guidelines Section 15064.3 to implement SB 743 were certified by the State in December of 2018. In July 2020, the City of Long Beach adopted new Traffic Impact Analysis (TIA) Guidelines which identify VMT as the metric for CEQA transportation analysis. According to these guidelines, LOS will still be reported for non-CEQA purposes. The LOS analysis of this study was done in accordance with the Methodologies and Assumptions Memorandum which was approved by the City of Long Beach in February 2020.

3.1 VMT Analysis

The City of Long Beach and OPR technical advisory describes the four components of a VMT analysis necessary to comply with the new CEQA guidelines:

1. **VMT Screening and Qualitative Review:** The first step is to determine when a VMT analysis is required. Long Beach and OPR recommends that projects can be screened from a VMT analysis based on their size, location, and/or accessibility to transit.

2. **VMT Analysis Methodology:** If a project is not screened from requiring a VMT analysis, the City can use the regional travel demand model to estimate a project's VMT. City of Long Beach's TIA Guidelines states that VMT be reported as "Home-Based VMT" per capita for residential projects and "Home-Based Work VMT" per employee for the employees of a project site.

[1] State of California, Governor's Office of Planning and Research, *Proposed Updates to the CEQA Guidelines, Final,* November 2017.

[2] State of California, Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA,* December 2018.

Home-Based VMT includes all vehicle roundtrips originating from the residence of the trip-maker. Home-Based Work VMT includes only vehicle roundtrips between the residence of the trip-maker and their place of work.

3. **VMT Impact Thresholds:** The City has discretion to develop and adopt its own VMT thresholds, or rely on thresholds recommended by other agencies, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence. Long Beach states that projects with VMT exceeding 15 percent below existing VMT per capita or per employee when compared to the LA Countywide average of these metrics may indicate project impacts.

4. **VMT Mitigation:** The types of mitigation that affect VMT are those that reduce the number of single-occupant vehicles generated by a project. Mitigation can be accomplished by altering the proposed land uses or by implementing transportation demand management (TDM) measures.

4. VMT Screening

VMT is heavily dependent on the land uses and location of a project. For example, a development site located in an urban area will typically have lower VMT because people have more options to walk, bike, take transit, or drive shorter distances to nearby destinations in comparison to a suburban or rural environment where most people drive longer distances for their everyday work and household needs. Therefore, the City of Long Beach has provided guidance related to several opportunities for screening projects that would generate low VMT as described in this chapter.

4.1 Project Type Screening

Projects that generate less than 500 daily trips may be screened from conducting a VMT analysis. Local serving retail uses less than 50,000 square feet per store may also be presumed to have a less than significant VMT impact absent substantial evidence to the contrary. This is because local serving retail generally improves the convenience of shopping close to home and has the effect of reducing vehicle travel. All the Project's retail uses are less than 50,000 square feet, and the total retail area proposed under the buildout of the Specific Plan (remaining and proposed) is 22,850 square feet. Therefore, the retail component of the Project is identified as local serving and screened from VMT analysis, and will be presumed to have a less than significant transportation impact. In addition, the retail component of the Project is serving the residential population of the Project and is not expected to generate customer trips from outside the Project site.

Projects that contain a high level of affordable housing may also be screened from conducting a VMT analysis. According to CEQA Guidelines Section 15064.3, subdivision (b), residential projects (or the residential portion of mixed-use projects) with 100 percent affordable dwelling units will be presumed to have a less than significant transportation impact. Because the CVC Specific Plan proposes 100% affordable housing, the residential component of the Project is screened from VMT analysis.

4.2 Low VMT Area Screening

Residential and office projects located within a low VMT generating area and have similar characteristics to the surrounding development (such as density or mix of uses) may be presumed to have a less than significant impact absent substantial evidence to the contrary.

The Southern California Association of Governments (SCAG) Regional Travel Demand Model, which includes Los Angeles County and the City of Long Beach, is the most appropriate model to use for VMT forecasting within the City of Long Beach. This analysis used the SCAG model to measure the VMT performance for the Project's traffic analysis zone (TAZ) during Base Year 2016 conditions. TAZs are geographic polygons similar to Census block groups used to represent areas of homogenous travel behavior. The VMT metrics for the Project's TAZ are discussed in further detail below as part of the screening for residential and office land uses.

Low VMT areas for residential projects are defined as TAZs that generate VMT on a per capita basis that is at least 15% lower than the LA Countywide average. Low VMT areas for office projects are defined as TAZs that generate VMT on a per employee basis that is at least 15% lower than the countywide average. According to the Long Beach TIA Guidelines, the average Home-Based VMT per capita and Home-Based Work VMT per employee for the Project's TAZ are greater than 115% and within 85-115% of the LA Countywide average, respectively. Therefore, the Project's TAZ does not qualify as a Low VMT area.

4.3 Transit Priority Area (TPA) Screening

Projects located within Transit Priority Areas (TPAs) or High-Quality Transit Areas (HQTAs) as determined by the most recent SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) may also be exempt from VMT analysis. TPAs are defined in the OPR Technical Advisory as a ½ mile radius around an existing or planned major transit stop or an existing stop along a high-quality transit corridor (HQTC). Major transit stops are defined in the technical advisory as an existing rail or bus rapid transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

Based on OPR guidance, projects located within a TPA may be presumed to have a less than significant impact absent substantial evidence to the contrary. However, this presumption may not be appropriate if the project:

- Has a Floor Area Ration (FAR) of less than 0.75
- Includes more parking for use by residents, customers, or employees than required by the City (unless additional parking is being provided for design feasibility, such as completing the floor of a subterranean or structured parking facility, or if additional parking is located within the project site to serve adjacent uses)
- Is inconsistent with the applicable SCS (as determined by the City)
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units

The closest major transit stop to the Project is the intersection of the Long Beach Transit (LBT) bus routes 171/175 and 191/192. The Project currently contains an onsite bus stop which serves as the terminus for LBT bus routes 171/175 and the Project is within ½ mile of the 191/192 bus stops on Santa Fe Avenue. According to Figure 4 in the TIA Guidelines, the entirety of CVC is in a TPA. In addition, the CVC Specific Plan buildout has a FAR over 0.75 and is not proposed to provide more parking than is required. The CVC Specific Plan will result in a net increase of over 500 affordable units, and by locating affordable multifamily housing in a transit-rich area, the Project is consistent with the goals of the SCAG RTP/SCS. According to the Specific Plan, transportation demand management (TDM) measures would be put in place to further reduce parking demand and VMT, such as encouragement programs, subsidized transit passes, and carpool/carshare programs. Therefore, all uses in the Project are screened from VMT analysis.

4.4 Screening and Impact Summary

Based on the screening criteria recommended by the City of Long Beach, all components of the Project are the type that are presumed to be less than significant given the nature of the use. Therefore, no further VMT analysis is required, and the CVC Specific Plan would result in less than significant VMT impacts.

5. Non-VMT Transportation Impacts

CEQA guidelines include several transportation impact categories in addition to the SB 743/VMT impact category discussed in the previous chapters. This chapter summarizes the Project's potential non-VMT transportation impacts.

5.1 Plans, Programs, Ordinances, or Policies Conflict Review

The City's new TIA Guidelines includes a review for conflicts with transportation-related plans, programs, ordinances, or policies. Based on applying the screening criteria, the threshold test is to assess whether a project would conflict with an adopted program, policy, plan, or ordinance that is adopted to protect the environment. A project would not be shown to result in an impact merely based on whether a project would not implement a particular program, policy, plan or ordinance. Rather, it is the intention of this threshold test to ensure that proposed development does not conflict with nor preclude the City from implementing adopted programs, plans, and policies. This evaluation was conducted by reviewing City documents related to transportation: The City's General Plan Mobility Element, Long Beach Bicycle Plan, CX3 Pedestrian Plan, Municipal Code, and Green TI Plan.

City of Long Beach General Plan Mobility Element

Mobility Element (2013) is the City's document to guide the operations and design of streets and other public right-of-way. It lays out a vision for designing safer, more vibrant streets, that are accessible to people, goods, and resources. The street standards were reviewed and compared to existing and future conditions resulting from the Project, and it was determined that the Project is compliant with the *Mobility Element*. In addition, the Project supports *Mobility Element* policies such as MOP Policy 1-18, which aims to develop land use policies that focus development potential in locations best served by transit.

City of Long Beach Bicycle Plan

The *Bicycle Master Plan (2017)* is the City's document to guide the planning and implementation of its bicycle infrastructure network. It is part of an effort to make Long Beach a city known for its bicycle-friendliness and expands upon the *Mobility Element* by providing further details on bicycling planning and design. It also recommends a series of projects and programs to be implemented by the City as funding is available. Since the Project Site would not front any existing or proposed bicycling facilities, it was determined that the CVC Specific Plan would not preclude any proposed bicycle infrastructure in the *Bicycle Master Plan*. Nonetheless, the Project would be in support of various goals found in the *Bicycle Master Plan,* such as Strategy 2.2, to expand citywide bike parking supply including short-term and long-term facilities for commercial and residential land uses, and Strategy 1, to develop a comprehensive bikeway network. The CVC Specific Plan supports Strategy 2.2 by proposing adequate bicycling parking, and Strategy 1 by proposing bicycle friendly streets and paths within the campus.

City of Long Beach CX3 Pedestrian Plan

The *CX3 Pedestrian Plan* is a technical appendix to the *Mobility Element*, which provides a framework for encouraging physical activity by active transportation in 10 neighborhoods in Long Beach, including the CVC area near Cabrillo High School. The Specific Plan contains various pedestrian network enhancements within and around the edge of the Project site to encourage more physical activity by active transportation. The Project also aims to increase the number of pedestrian connections to areas outside the CVC campus. The Project proposes to add new sidewalks and street trees within the site and along the perimeter as well as improved street and pedestrian lighting that aim to enhance connectivity to the existing pedestrian network. The Project does not propose to narrow sidewalks or remove streetscape amenities or features. The locations of driveways are intended to minimize disruptions to the pedestrian right-of-way. Therefore, it was determined that the CVC Specific Plan would not conflict with the goals and objectives of the *CX3 Pedestrian* Plan.

City of Long Beach Municipal Code

The Long Beach Municipal Code (LBMC) is the guiding document that contains many of the ordinances for the City of Long Beach. Generally, transportation specific LBMC ordinances that apply to the Project would pertain to minimum parking requirements. The Project will provide short-term and long-term bicycle parking and minimum required vehicular parking in accordance with the LBMC. Therefore, the CVC Specific Plan is compliant with the LBMC.

Green TI Plan

The *Terminal Island Transition Plan (2015)* (Green TI Plan) is a planning effort to transform the Terminal Island Freeway into a local serving street and greenbelt. It would increase open space and buffer the CVC campus from air, noise, light, and visual pollution. The proposed project would provide opportunities to increase access to the CVC campus on the western side but is currently unfunded. The CVC Specific Plan accounts for the potential Green TI Plan by providing various access options to the proposed surface level boulevard and greenbelt and would not preclude the implementation of the Green TI Plan. Therefore, the CVC Specific Plan is not in conflict with the Green TI Plan.

Cumulative Impacts

Of the 14 related projects in Table 7 and shown in Figure 6, the nearest related project to the Project site is CVC Phase VI. CVC Phase VI is a separate project from the CVC Specific Plan, to be completed before the Specific Plan is built out. CVC Phase VI is also within the CVC campus, and no significant cumulative impacts are anticipated to which both the Project and the related projects would contribute in regard to City transportation policies or standards adopted to protect the environment and support multimodal transportation options.

Conclusion

The Project would not substantially increase hazards, conflicts, or preclude City action to fulfill or implement projects associated with these networks and will contribute to overall walkability through enhancements to

the Project Site. Therefore, the Project would have a less than significant impact on the City's transportation-related plans, programs, ordinances, and policies.

6. Non-CEQA Transportation Analyses

The purpose of the non-CEQA transportation analyses are to promote orderly development, evaluate and address transportation-system deficiencies, and promote public safety and the general welfare by ensuring that development projects are properly related to their sites, surrounding properties, and traffic circulation.

Although the new TIA Guidelines provides for updated analysis methodologies and procedures, the CVC Specific Plan's EIR scoping meeting occurred before these Guidelines were adopted. The scope of the non-CEQA transportation analyses study was documented in a Methodologies and Assumptions Memorandum and approved by the City of Long Beach in February 2020.

6.1 Study Analysis Locations

Ten signalized intersections and two unsignalized intersections were selected for analysis in consultation with City of Long Beach.

Signalized Intersections

The following 10 signalized intersections, illustrated in **Figure 4**, were identified in conjunction with City of Long Beach to be analyzed as part of the scope of work for this Project:

1. Alameda Street & Sepulveda Boulevard (Lower Connector) (Carson)
2. Alameda Street & Sepulveda Boulevard (Upper Connector) (Carson)
3. SR-103 (Terminal Island Freeway) & Willow Street (Long Beach)
4. Santa Fe Avenue & Willow Street (Long Beach)
5. Alameda Street & O Street (Los Angeles)
6. Pacific Coast Highway (PCH) & O Street (Los Angeles)
9. Technology Place & PCH (Long Beach)
10. Santa Fe Avenue & PCH (Long Beach)
11. Harbor Avenue & PCH (Long Beach)
12. Magnolia Avenue & PCH (Long Beach)

Unsignalized Intersections

The following two unsignalized intersections, illustrated in **Figure 4**, were identified in conjunction with City of Long Beach to be analyzed as part of the scope of work for this Project:

7. San Gabriel Avenue/SR-103 NB Ramps & 20th Street (Long Beach/Caltrans)
8. Technology Place/River Avenue & 20th Street (Long Beach)

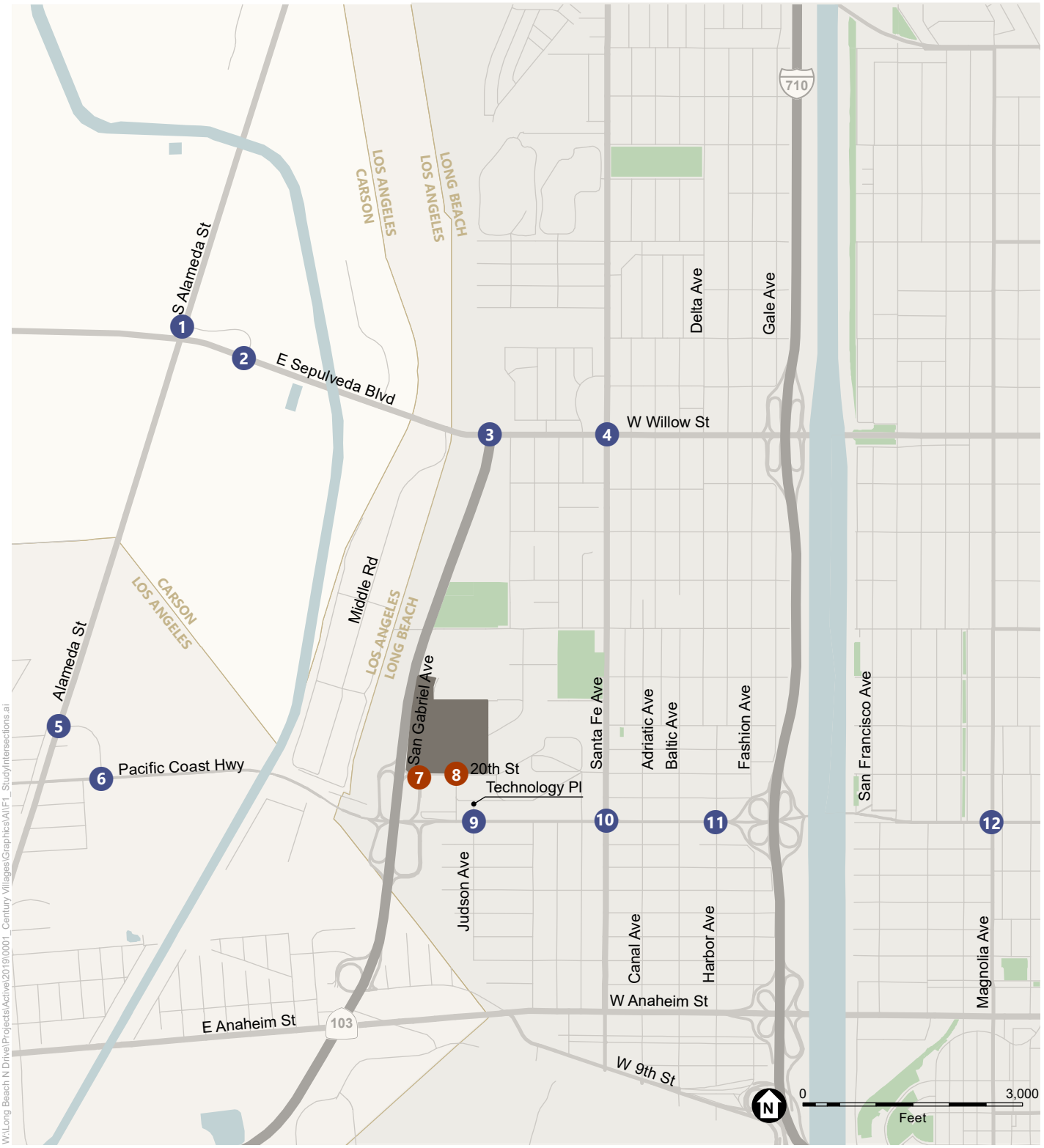


Figure 4

Study Intersections

6.2 Level of Service Methodology

Level of service (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. Per the Methodologies and Assumptions Memorandum approved by the City of Long Beach, Intersection Capacity Utilization (ICU) methodology was used to determine the intersection volume-to-capacity (V/C) ratio and corresponding LOS for the 10 signalized study intersections. The *2016 Highway Capacity Manual* (HCM) 6th Edition was used to calculate the delay and LOS at the two unsignalized study intersections. The calculation of delay represents the amount of delay experienced by vehicles passing through the intersection. LOS definitions for signalized intersections is provided in **Table 2A**. Level of Service definitions for unsignalized intersections is provided in **Table 2B.**

TABLE 2A
LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS
ICU METHODOLOGY

Level of Service	Volume/Capacity Ratio	Definition
A	0.000 - 0.600	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	>0.600 - 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat what restricted within groups of vehicles.
C	>0.700 - 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	>0.800 - 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	>0.900 - 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: *Transportation Research Circular No. 212, Interim Materials on Highway Capacity,* Transportation Research Board, 1980.

TABLE 2B
LEVEL OF SERVICE DEFINITIONS FOR
STOP-CONTROLLED INTERSECTIONS

Level of Service	Average Control Delay (seconds/vehicle)
A	≤ 10.0
B	> 10.0 and ≤ 15.0
C	> 15.0 and ≤ 25.0
D	> 25.0 and ≤ 35.0
E	> 35.0 and ≤ 50.0
F	> 50.0

Source:
Highway Capacity Manual, Transportation Research Board, 2016.

6.3 Baseline Conditions

Traffic Count Methodology

Due to the COVID-19 pandemic in 2020, travel activity and traffic volumes in the existing year of analysis were substantially decreased throughout the study area and Southern California. It was not possible to collect counts that represented existing traffic conditions. A baseline condition that reflected travel activity and traffic volume prior to the COVID-19 pandemic was developed for the intersection analysis. Historical AM and PM peak hour turning movement counts collected between 2013-2019 were utilized for 10 of the 12 study intersections. Each of these counts were grown by 1% per year from their respective count year to the established Baseline year of 2020.

The following two remaining study intersections did not have historical traffic count data available at the time of this study.

2. Sepulveda Boulevard & Connector to Alameda
9. PCH & Technology Place/Judson Avenue

Weekday AM and PM peak hour turning movement counts were collected in April 2020 during the COVID-19 pandemic in 2020 at these two locations and three nearby study intersections at which historical data was already available. The three nearby study intersections are listed below.

1. Alameda Street & Connector to Sepulveda
7. San Gabriel Avenue & SR-103 NB Ramps/20th Street
10. Santa Fe Avenue & PCH

The pre-pandemic historical counts were compared to the 2020 pandemic counts at study intersections 1, 7, and 10. The percentage difference was then applied to the 2020 pandemic-era counts at study intersections 2 and 9, to adjust the intersection traffic volumes to a pre-pandemic 2020 baseline.

The Baseline weekday morning and afternoon peak hour volumes at the study intersections are provided in **Appendix C**. Count sheets for these intersections are contained in **Appendix B**.

Lane configurations of the study intersections are also provided in **Appendix C**.

Baseline Level of Service

Baseline traffic volumes presented in **Appendix C** were analyzed using the intersection capacity analysis methodology described above to determine the existing operating conditions at the study intersections. **Table 3** summarizes the Baseline weekday peak hour LOS for signalized and unsignalized study intersections. As indicated, all 12 study intersections currently operate at LOS D or better during both peak hours. Analysis sheets are provided in **Appendix D**.

TABLE 3
BASELINE CONDITIONS INTERSECTION LEVELS OF SERVICE

NO.	INTERSECTION	PEAK HOUR	BASELINE	
			V/C / DELAY (S)	LOS
1	Alameda St &	AM	0.488	A
	Connector to Sepulveda	PM	0.546	A
2	Connector to Sepulveda &	AM	0.443	A
	Sepulveda Bl	PM	0.487	A
3	Terminal Island Fwy &	AM	0.402	A
	Willow St	PM	0.613	B
4	Santa Fe Av &	AM	0.680	B
	Willow St	PM	0.814	D
5	Alameda St &	AM	0.422	A
	O St	PM	0.532	A
6	O St &	AM	0.578	A
	Pacific Coast Hwy	PM	0.598	A
7	San Gabriel Av &	AM	8.8	A
	SR-103 NB Ramps/20th St	PM	9.1	A
8	Technology Pl/River Av &	AM	7.4	A
	20th St	PM	7.5	A
9	Technology Pl/Judson Av &	AM	0.552	A
	Pacific Coast Hwy	PM	0.637	B
10	Santa Fe Av &	AM	0.755	C
	Pacific Coast Hwy	PM	0.803	D
11	Harbor Av &	AM	0.665	B
	Pacific Coast Hwy	PM	0.886	D
12	Magnolia Av &	AM	0.649	B
	Pacific Coast Hwy	PM	0.748	C

6.4 Project Traffic

The development of traffic forecasts for the proposed Project involves the use of a 3-step process: trip generation, trip distribution, and traffic assignment.

Trip Generation

As discussed in Chapter 1, the proposed Project consists of affordable housing units and associated CVC resident serving spaces such as recreational amenities, administrative offices, supportive services, educational uses, and retail uses. These new uses will replace some of the existing uses at the Project site. As portions of the existing CVC site will remain upon completion of the Project, the trip generation estimate reflects full build-out of the CVC site minus the existing buildout of the CVC site.

Trip generation rates from *Trip Generation, 10th Edition* (Institute of Transportation Engineers [ITE], 2017) were used to estimate the number of trips for most uses associated with the Project. ITE trip generation rates for General Office (ITE Code 710), Residential Community Center (ITE Code 495), and Shopping Center (820) were used to estimate trips for the Administrative and Supportive Services use, Indoor Amenities and Educational uses, and retail uses, respectively. Because multifamily affordable housing trip generation rates are not available from ITE, local trip generation rates from the region were used. The Los Angeles Department of Transportation (LADOT) has published trip generation rates for affordable housing in their *Transportation Assessment Guidelines (TAG)*, 2019, which were used for this project. These trip generation rates were calibrated to reflect the local conditions of the existing CVC.

Trip Generation Calibration

The trip generation rates from *Trip Generation, 10th Edition* and the *TAG* were calibrated to reflect existing driveway counts conducted at CVC. New 24-hour driveway counts were collected at both existing CVC driveways on Tuesday, December 17, 2019 to determine existing trip generation. **Table 4** shows the existing active land uses and driveway counts at CVC. Under these existing conditions, a total of 256 trips (141 inbound/115 outbound) occurred in the AM peak hour of 7:45 AM – 8:45 AM, and 253 trips (106 inbound/147 outbound) occurred in the PM peak hour of 4:00 PM – 5:00 PM.

As the mix of uses at CVC attract trips within and the site is served by multiple transit lines, internal capture and transit credit reductions were applied to the trip generation rates from *Trip Generation, 10th Edition* and the *TAG* to calibrate the existing trip generation estimate to the driveway counts. Internal trip credits are a reduction to the trip generation estimates for all individual land uses to account for trips internal to the site. These are trips are usually made by walking within the site. Transit credits area applied to account for people who travel to the site by transit instead of driving a vehicle.

Table 5 identifies the calibrations applied to the trip generation rates of the existing land uses and compares the resulting calibrated results to the driveway counts. As documented in **Table 5**, the calibrated trip generation estimate is higher by 64 trips (2 inbound/62 outbound) in the AM peak hour, and 57 trips (55 inbound/2 outbound) in the PM peak hour. These calibrations are considered appropriate and conservative as the resulting trip generation estimate is not lower than the driveway counts.

Project Trip Generation Estimates

Table 6 presents the estimated trip generation using calibrated trip generation rates for the fully built project. An existing use credit was taken for the entire site using the count data. As presented in **Table 6**, the Project is expected to generate an estimated net new external 327 trips (139 inbound/188 outbound) during the AM peak hour and 351 trips (194 inbound/157 outbound) during the PM peak hour.

TABLE 4
EXISTING SITE COUNTS
CENTURY VILLAGES AT CABRILLO

Land Use	Size	AM Peak Hour Trips			PM Peak Hour Trips		
		In	Out	Total	In	Out	Total
Existing Land Uses							
Multifamily Housing	865 du						
Administrative and Supportive Services	26.30 ksf	141	115	256	106	147	253
Amenities and Education	22.58 ksf						
Retail	5.85 ksf						
Existing Land Use Counts		**141**	**115**	**256**	**106**	**147**	**253**

Notes:

Existing driveway counts taken in December, 2019.

TABLE 5
ITE TRIP GENERATION RATES CALIBRATED TO EXISTING SITE COUNTS
CENTURY VILLAGES AT CABRILLO

Land Use	ITE Land Use Code	Existing Size	Trip Generation Rates [a]							Estimated Trip Generation					
			AM Peak Hour			PM Peak Hour			Trip Rate Unit	AM Peak Hour Trips			PM Peak Hour Trips		
			Rate	% In	% Out	Rate	% In	% Out		In	Out	Total	In	Out	Total
Existing Land Uses Trip Generation Estimation															
Multifamily Housing	[b]	865 du	0.55	40%	60%	0.43	55%	45%	per du	190	286	476	205	167	372
Internal capture [c]			*35%*			*25%*				*(67)*	*(100)*	*(167)*	*(51)*	*(42)*	*(93)*
Transit credit [d]			*10%*			*10%*				*(12)*	*(19)*	*(31)*	*(15)*	*(13)*	*(28)*
Net External Trips										111	167	278	139	112	251
Administrative and Supportive Services [e]	710	26.300 ksf	1.16	86%	14%	1.15	16%	84%	per ksf	27	4	31	5	25	30
Internal capture [c]			*25%*			*25%*				*(7)*	*(1)*	*(8)*	*(1)*	*(6)*	*(7)*
Transit credit [d]			*10%*			*10%*				*(2)*	*0*	*(2)*	*0*	*(2)*	*(2)*
Net External Trips										18	3	21	4	17	21
Amenities and Education [f]	495	22.580 ksf	1.76	66%	34%	2.31	47%	53%	per ksf	26	14	40	24	28	52
Internal capture [c]			*50%*			*50%*				*(13)*	*(7)*	*(20)*	*(12)*	*(14)*	*(26)*
Transit credit [d]			*10%*			*10%*				*(1)*	*(1)*	*(2)*	*(1)*	*(1)*	*(2)*
Net External Trips										12	6	18	11	13	24
Retail	820	5.850 ksf	0.94	62%	38%	3.81	48%	52%	per ksf	3	2	5	11	11	22
Internal capture [c]			*30%*			*30%*				*(1)*	*(1)*	*(2)*	*(3)*	*(3)*	*(6)*
Transit credit [d]			*10%*			*10%*				*0*	*0*	*0*	*(1)*	*(1)*	*(2)*
Net External Trips										2	1	3	7	7	14
Existing Land Uses Trip Generation Estimation Total										**143**	**177**	**320**	**161**	**149**	**310**
Existing Land Use Trip Generation Count															
Multifamily Housing	[g]	865 du													
Administrative and Supportive Services	[g]	26.30 ksf								**141**	**115**	**256**	**106**	**147**	**253**
Amenities and Education	[g]	22.58 ksf													
Retail	[g]	5.85 ksf													
Trip Generation Estimation and Count Difference										**2**	**62**	**64**	**55**	**2**	**57**

Notes:

a. Original trip generation rates based on information from Institute of Transportation Engineers (ITE), *Trip Generation, 10th Edition* , 2017, unless otherwise noted.

b. ITE does not provide trip generation rates for affordable housing developments. Locally derived trip affordable housing generation rates were used from the Los Angeles Department of Transportation's *Transportation Assessment Guidelines* , 2019.

c. Internal capture represents the percentage of trips between land uses that occur within the site. Credit estimated based on existing site counts.

d. Transit credit based on proximity to existing and planned transit service, and proposed incentive programs, on-site transit center, and shuttle services.

e. Administrative and Supportive Services assumed to be office space.

f. Amenities and Education assumed to be recreational facilities with classes and other activites for residents.

g. Existing driveway counts taken in December, 2019.

TABLE 6
FULL PROJECT BUILDOUT TRIP GENERATION
CENTURY VILLAGES AT CABRILLO

Land Use	ITE Land Use Code	Existing Size	AM Peak Hour			PM Peak Hour			Trip Rate Unit	AM Peak Hour Trips			PM Peak Hour Trips		
			Rate	% In	% Out	Rate	% In	% Out		In	Out	Total	In	Out	Total
Full Buildout															
Multifamily Housing	[b]	1380 du	0.55	40%	60%	0.43	55%	45%	per du	304	455	759	326	267	593
Internal capture [c]			*35%*			*25%*				*(106)*	*(159)*	*(265)*	*(82)*	*(67)*	*(149)*
Transit credit [d]			*10%*			*10%*				*(20)*	*(30)*	*(50)*	*(24)*	*(20)*	*(44)*
Net External Trips										178	266	444	220	180	400
Administrative and Supportive Services [e]	710	67.050 ksf	1.16	86%	14%	1.15	16%	84%	per ksf	67	11	78	12	65	77
Internal capture [c]			*25%*			*25%*				*(17)*	*(3)*	*(20)*	*(3)*	*(16)*	*(19)*
Transit credit [d]			*10%*			*10%*				*(5)*	*(1)*	*(6)*	*(1)*	*(5)*	*(6)*
Net External Trips										45	7	52	8	44	52
Amenities and Education [f]	495	94.350 ksf	1.76	66%	34%	2.31	47%	53%	per ksf	110	56	166	102	116	218
Internal capture [c]			*50%*			*50%*				*(55)*	*(28)*	*(83)*	*(51)*	*(58)*	*(109)*
Transit credit [d]			*10%*			*10%*				*(6)*	*(3)*	*(9)*	*(5)*	*(6)*	*(11)*
Net External Trips										49	25	74	46	52	98
Retail	820	22.850 ksf	0.94	62%	38%	3.81	48%	52%	per ksf	13	8	21	42	45	87
Internal capture [c]			*30%*			*30%*				*(4)*	*(2)*	*(6)*	*(13)*	*(14)*	*(27)*
Transit credit [d]			*10%*			*10%*				*(1)*	*(1)*	*(2)*	*(3)*	*(3)*	*(6)*
Net External Trips										8	5	13	26	28	54
Project Total Net External Trips										**280**	**303**	**583**	**300**	**304**	**604**
Existing Land Uses															
Multifamily Housing	[g]	865 du													
Administrative and Supportive Services	[g]	26.30 ksf								**141**	**115**	**256**	**106**	**147**	**253**
Amenities and Education	[g]	22.58 ksf													
Retail	[g]	5.85 ksf													
Net External Project Trips										**139**	**188**	**327**	**194**	**157**	**351**

Notes:

a. Original trip generation rates based on information from Institute of Transportation Engineers (ITE), *Trip Generation, 10th Edition* , 2017, unless otherwise noted.

b. ITE does not provide trip generation rates for affordable housing developments. Locally derived trip affordable housing generation rates were used from the Los Angeles Department of Transportation's *Transportation Assessment Guidelines* , 2019.

c. Internal capture represents the percentage of trips between land uses that occur within the site. Credit estimated based on existing site counts.

d. Transit credit based on proximity to existing and planned transit service, and proposed incentive programs, on-site transit center, and shuttle services.

e. Administrative and Supportive Services assumed to be office space.

f. Amenities and Education assumed to be recreational facilities with classes and other activites for residents.

g. Existing driveway counts taken in December, 2019.

Trip Distribution

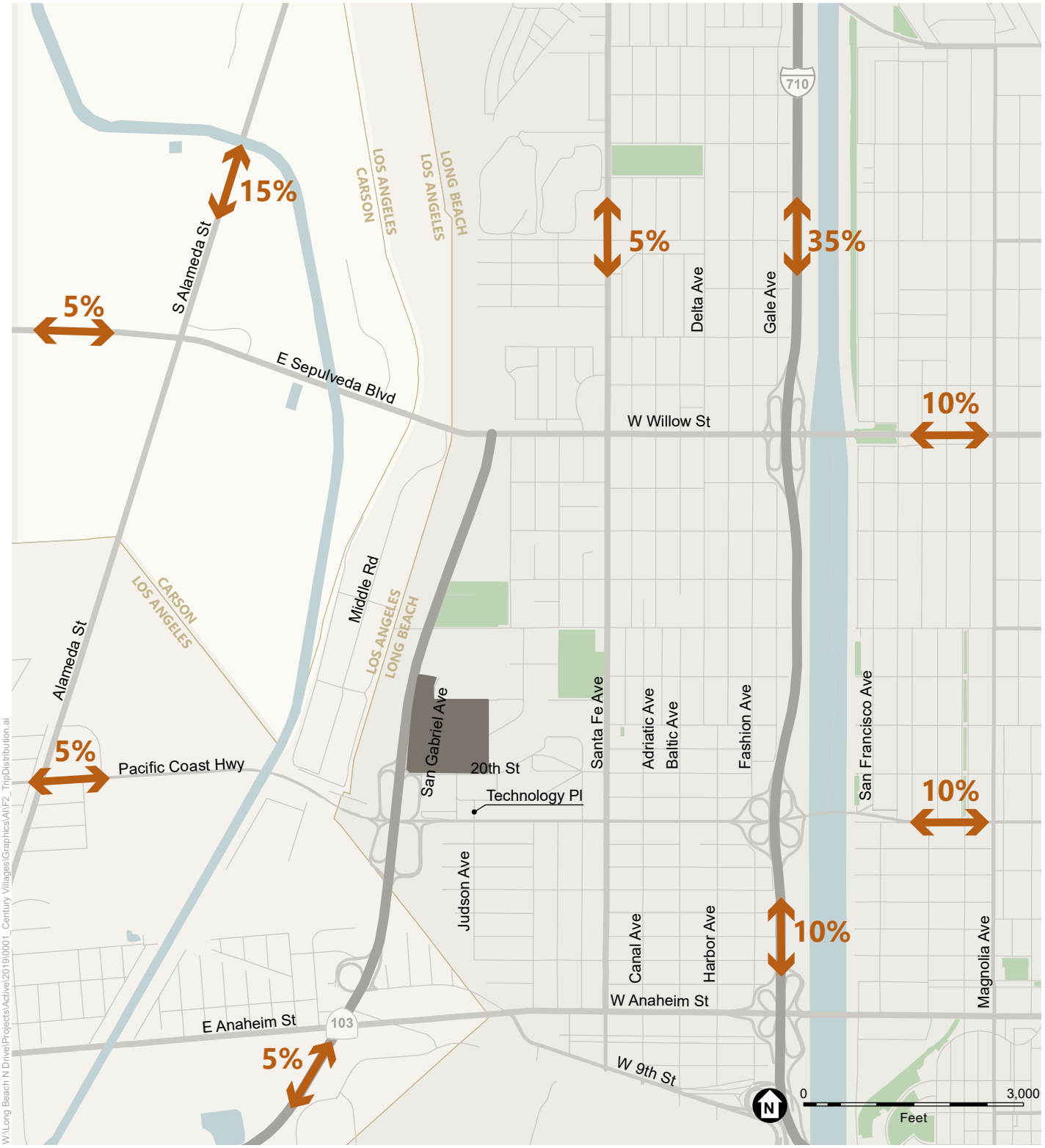
The geographic distribution of trips generated by the Project is dependent on characteristics of the street system serving the Project site, the level of accessibility of routes to and from the proposed Project site, and the locations of employment and residential areas to which patrons of the Project would be drawn. The distribution of Project trips is illustrated in **Figure 5**.

Traffic Assignment

The traffic to be generated by the proposed Project was assigned to the street network using the distribution pattern described in **Figure 5**. **Appendix C** provides the assignment of the proposed Project-generated peak hour traffic volumes at the analyzed intersections during the AM and PM peak hours. The assignment of traffic volumes took into consideration the locations of the proposed Project driveways.

Baseline plus Project Traffic Volumes

The Project traffic estimated and assigned to the study intersections was added to the Baseline traffic volumes to estimate Baseline plus Project traffic volumes. Turning movement traffic volumes for the Baseline plus Project scenario are provided in **Appendix C**.



X% Trip distribution

Project Site

Figure 5

Trip Distribution

6.5 Future Conditions

Future Year (2033) Traffic Volumes

To evaluate the potential effects of the proposed Project on Future Base (2033) conditions, it was necessary to develop estimates of future traffic conditions in the area both without and with Project traffic. First, estimates of traffic growth were developed for the study area to forecast future conditions without the Project. These forecasts included traffic increases as a result of both regional ambient traffic growth and traffic generated by specific developments in the vicinity of the Project (related projects).

These projected traffic volumes, identified herein as the Future Base conditions, represent the future conditions without the proposed Project. The traffic generated by the proposed Project was then estimated and assigned to the surrounding street system. Project traffic was added to the Future Base conditions to form Future plus Project traffic conditions, which were analyzed to determine the effects of traffic on the immediate area study intersections attributable to the Project itself.

The assumptions and analysis methodology used to develop each of the future year scenarios discussed above are described in more detail in the following sections.

Background or Ambient Growth

Based on historic trends and at the direction of City of Long Beach, it was established that an ambient growth factor of 0.16% per year should be applied to adjust the Baseline (2020) traffic volumes to reflect the effects of regional growth and development by year 2033. This adjustment was applied to the Baseline traffic volume data to reflect the effect of ambient growth by the year 2033.

Related Project Traffic Generation and Assignment

Future Base traffic forecasts include the effects of known specific projects, called related projects, expected to be implemented in the vicinity of the proposed Project Site prior to the buildout date of the proposed Project. The list of related projects was prepared based on data from City of Long Beach, City of Los Angeles, and City of Carson. Related projects within 1.5 miles of the Project site were identified to be on the list. There were no related projects in the City of Carson within 1.5 miles of the Project site. A total of 14 related projects in Long Beach and Los Angeles were identified in the study area; these projects are listed in **Table 7** and the locations are illustrated in **Figure 6**.

Trip Generation

For the related projects provided by Long Beach, trip generation was calculated using ITE's *Trip Generation, 10th Edition*. For the related project provided by LADOT, the trip generation was used as provided. **Table 7** presents the resulting trip generation estimates for the related projects. These projections are conservative in that they do not necessarily account for either the existing uses to be removed or the possible use of non-motorized travel modes (transit, walking, etc.). Mitigation measures associated with the related projects are also not in every case accounted for in the analysis.

Trip Distribution

The geographic distribution of the traffic generated by the related projects is dependent on several factors. These factors include the type and density of the proposed land uses, the geographic distribution of population from which employees and potential patrons of proposed commercial developments may be drawn, the locations of employment and commercial centers to which residents of residential projects may be drawn, and the location of the projects in relation to the surrounding street system. Additionally, if the traffic study or environmental document for a related project was available, the trip distribution from that study was used.

Traffic Assignment

Using the estimated trip generation and trip distribution patterns described above, traffic generated by the related project was assigned to the street network.

Nearly every related project within 1.5 miles of the Project site would increase the number of trips at study intersections. However, the Southern California International Gateway (SCIG) project is proposed to divert many car and truck trips from I-710 and PCH. Based on their EIR, it is projected that this related project would result in a sizable drop of through trips along PCH between I-710 and the CVC campus. Trips would instead utilize SR-103 to make trips between the SCIG and the Port of Long Beach.

TABLE 7
CENTURY VILLAGES AT CABRILLO PROJECT
RELATED PROJECTS

No.	Project Location	Project Location	Land Use	Size		Trip Generation					
						AM			PM		
						IN	OUT	TOTAL	IN	OUT	TOTAL
1	2136 W 16th St	Long Beach	Industrial	8	ksf	1	0	1	1	1	2
2	1468 14th St	Long Beach	Industrial	22	ksf	3	1	4	1	3	4
3	1834 Harbor Av	Long Beach	Industrial	51.45	ksf	7	2	9	3	7	10
4	1404 Hays Av	Long Beach	Industrial	19.62	ksf	3	0	3	1	3	4
5	1675 Santa Fe Av	Long Beach	Industrial	21.38	ksf	3	1	4	1	3	4
6	1601 San Francisco Av	Long Beach	Industrial	94.87	ksf	12	4	16	5	13	18
7	901 De Forest Av	Long Beach	Stormwater Treatment	10.00	ksf	18	5	23	5	18	23
8	1450 Cota Av	Long Beach	Industrial	7.56	ksf	1	0	1	0	1	1
9	1360 Cowles St	Long Beach	Industrial	9.70	ksf	1	1	2	1	1	2
10	700 W 17th St	Long Beach	Industrial	29.73	ksf	4	1	5	2	4	6
11	460 W Pacific Coast Hwy	Long Beach	Affordable Housing	40	du	4	14	18	14	8	22
12	2221 W Williams St	Long Beach	Affordable Housing	90	du	8	10	18	8	8	16
13	1318 Cota Av	Long Beach	Industrial	22	ksf	3	1	4	1	3	4
14	So. Cal. International Gateway	Los Angeles	Rail Intermodal Facility	-	-	70	300	370	120	65	185
				Total:		138	340	478	162	138	300

Notes:
du = dwelling unit; ksf = one-thousand square feet
Related projects list based on information provided by City of Long Beach on May 1, 2020, LADOT on May 12, 2020, and City of Carson's Planning website.
Trip generation estimates based on information provided by cities or *Trip Generation,* 10th Edition, Institute of Transportation Engineers, 2016.

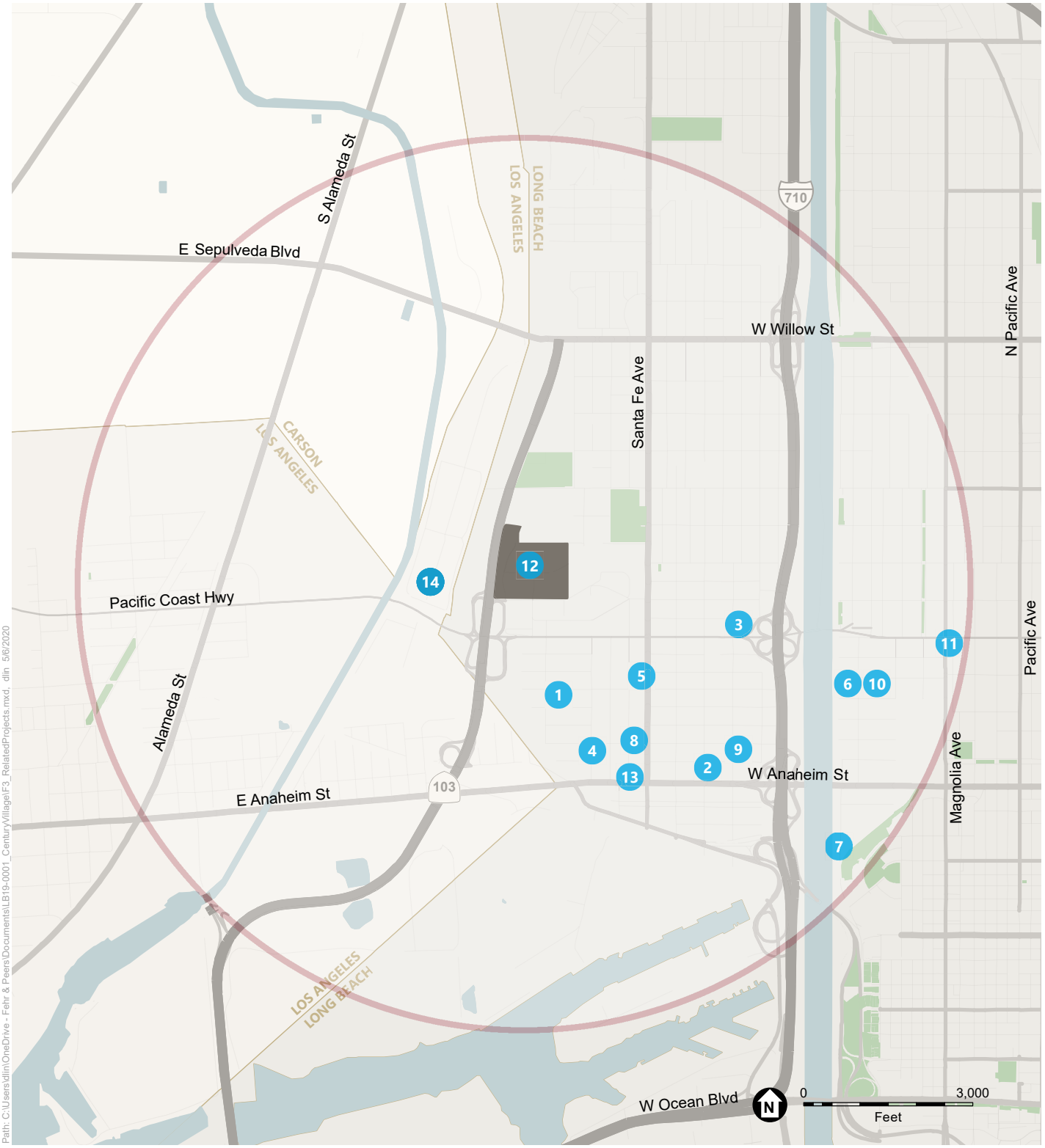


Figure 6

Related Projects

Transportation Infrastructure Projects

In addition to the ambient growth and related development projects in the area, programmed improvements to local streets were considered for this analysis. No funded infrastructure projects in the vicinity of the Project are anticipated that would change local streets.

Future Base Traffic Volumes

Future Base (2033) weekday AM and PM peak hour traffic volumes and lane geometries for the analyzed intersections are provided in **Appendix C**. The Future Base traffic conditions represent an estimate of future conditions without the proposed Project inclusive of the ambient background growth and related projects traffic.

Future Plus Project Traffic Projections

The proposed Project traffic volumes were added to the Future Base traffic projections, resulting in Future plus Project AM and PM peak hour traffic volumes. As provided in **Appendix C**, the Future plus Project scenario presents future traffic conditions with the completion of the proposed Project.

6.6 Operational Analysis

Baseline Plus Project Analysis

The Baseline plus Project traffic volumes presented in **Appendix C** were analyzed to determine the estimated delay and LOS for each of the analyzed intersections under this scenario. **Tables 8** summarizes the Baseline plus Project LOS. Analysis sheets are provided in **Appendix D**. The intersection of Harbor Avenue and PCH is projected to operate at LOS E during the PM peak hour.

TABLE 8
BASELINE PLUS PROJECT INTERSECTION LEVELS OF SERVICE

NO.	INTERSECTION	PEAK HOUR	BASELINE		BASELINE + PROJECT		V/C / DELAY INCREASE
			V/C / Delay	LOS	V/C / Delay	LOS	
1	Alameda St &	AM	0.488	A	0.498	A	0.010
	Connector to Sepulveda	PM	0.546	A	0.558	A	0.012
2	Connector to Sepulveda &	AM	0.443	A	0.453	A	0.010
	Sepulveda Bl	PM	0.487	A	0.492	A	0.005
3	Terminal Island Fwy &	AM	0.402	A	0.410	A	0.008
	Willow St	PM	0.613	B	0.620	B	0.007
4	Santa Fe Av &	AM	0.680	B	0.683	B	0.003
	Willow St	PM	0.814	D	0.825	D	0.011
5	Alameda St &	AM	0.422	A	0.433	A	0.011
	O St	PM	0.532	A	0.544	A	0.012
6	O St &	AM	0.578	A	0.591	A	0.013
	Pacific Coast Hwy	PM	0.598	A	0.602	B	0.004
7	San Gabriel Av &	AM	8.8	A	10.0	A	1.2
	SR-103 NB Ramps/20th St	PM	9.1	A	10.9	B	1.8
8	Technology Pl/River Av &	AM	7.4	A	8.2	A	0.8
	20th St	PM	7.5	A	8.6	A	1.1
9	Technology Pl/Judson Av &	AM	0.552	A	0.645	B	0.093
	Pacific Coast Hwy	PM	0.637	B	0.696	B	0.059
10	Santa Fe Av &	AM	0.755	C	0.785	C	0.030
	Pacific Coast Hwy	PM	0.803	D	0.827	D	0.024
11	Harbor Av &	AM	0.665	B	0.689	B	0.024
	Pacific Coast Hwy	PM	0.886	D	0.910	E	0.024
12	Magnolia Av &	AM	0.649	B	0.657	B	0.008
	Pacific Coast Hwy	PM	0.748	C	0.752	C	0.004

Future Base (2033) Analysis

The Future Base (2033) peak hour traffic volumes were analyzed to determine the estimated delay and LOS for each of the analyzed intersections. **Table 9** summarizes the Future Base LOS. No intersections are projected to operate at LOS E/F during either peak hour.

Future Plus Project Analysis

The resulting Future plus Project peak hour traffic volumes, provided in **Appendix C**, were analyzed to determine the projected future operating conditions with the addition of the proposed Project traffic. The results of the Future plus Project analysis are also presented in **Table 9**, with analysis sheets provided in **Appendix D**. The intersection of Harbor Avenue and PCH is projected to operate at LOS E during the PM peak hour.

TABLE 9
FUTURE YEAR (2033) PLUS PROJECT INTERSECTION LEVELS OF SERVICE

NO.	INTERSECTION	PEAK HOUR	FUTURE BASE (2033)		FUTURE (2033) + PROJECT		V/C / DELAY INCREASE
			V/C / Delay	LOS	V/C / Delay	LOS	
1	Alameda St &	AM	0.451	A	0.459	A	0.008
	Connector to Sepulveda	PM	0.504	A	0.516	A	0.012
2	Connector to Sepulveda &	AM	0.420	A	0.428	A	0.008
	Sepulveda Bl	PM	0.467	A	0.472	A	0.005
3	Terminal Island Fwy &	AM	0.390	A	0.398	A	0.008
	Willow St	PM	0.571	A	0.576	A	0.005
4	Santa Fe Av &	AM	0.692	B	0.697	B	0.005
	Willow St	PM	0.833	D	0.843	D	0.010
5	Alameda St &	AM	0.393	A	0.405	A	0.012
	O St	PM	0.512	A	0.524	A	0.012
6	O St &	AM	0.548	A	0.562	A	0.014
	Pacific Coast Hwy	PM	0.604	B	0.609	B	0.005
7	San Gabriel Av &	AM	10.1	B	11.9	B	1.8
	SR-103 NB Ramps/20th St	PM	10.1	B	12.6	B	2.5
8	Technology Pl/River Av &	AM	7.4	A	8.3	A	0.9
	20th St	PM	7.6	A	8.7	A	1.1
9	Technology Pl/Judson Av &	AM	0.547	A	0.639	B	0.092
	Pacific Coast Hwy	PM	0.624	B	0.683	B	0.059
10	Santa Fe Av &	AM	0.752	C	0.781	C	0.029
	Pacific Coast Hwy	PM	0.796	C	0.820	D	0.024
11	Harbor Av &	AM	0.671	B	0.699	B	0.028
	Pacific Coast Hwy	PM	0.884	D	0.908	E	0.024
12	Magnolia Av &	AM	0.669	B	0.677	B	0.008
	Pacific Coast Hwy	PM	0.768	C	0.772	C	0.004

Corrective Actions

The City of Long Beach has identified LOS D as acceptable operating conditions for intersections. Under both the Baseline plus Project and Future plus Project scenarios, the intersection of Harbor Avenue and PCH is projected to operate at LOS E.

A corrective action was explored to improve the LOS at this intersection. Because northbound right-turn volumes are high, a feasible action would be to stripe a dedicated northbound right-turn lane. This would change the northbound approach lane configuration from (1) left-turn lane and (1) shared through-right lane to (1) left-turn lane, (1) through lane, and (1) right-turn lane. There would be adequate width to stripe a right-turn only lane, as the current shared through-right lane is 22′ wide. If a dedicated right-turn lane were to be installed, it is recommended that approximately 80′ of street parking be removed to provide enough storage length. This corrective action would improve Future plus Project operations at this intersection to LOS D. **Table 10** summarizes the analysis of this intersection if a northbound right-turn lane were striped.

TABLE 10
FUTURE YEAR (2033) PLUS PROJECT INTERSECTION LEVELS OF SERVICE WITH CORRECTIVE ACTION

NO.	INTERSECTION	PEAK HOUR	FUTURE (2033) + PROJECT		FUTURE (2033) + PROJECT + CORRECTIVE ACTION	
			V/C / Delay	LOS	V/C / Delay	LOS
11	Harbor Av &	AM	0.699	B	0.664	B
	Pacific Coast Hwy	PM	0.908	E	0.869	D

6.7 Site Access

The Project, as illustrated in the site plan in **Figure 1**, will maintain existing unsignalized access and egress at two driveway locations. No ingress/egress changes are proposed at this time. The main Project driveway will remain at the stop-controlled intersection of San Gabriel Avenue and SR-103 NB Ramps/20th Street, which provides both access and egress. Site access will also be maintained by an egress only stop-controlled driveway at the intersection of River Avenue/Technology Place and 20th Street. There are no other vehicular access points to CVC. Because Project driveways are also study intersections (7 and 8), driveway LOS and delay analysis can be found in **Tables 3, 8, and 9**.

All driveways are projected to operate at LOS B or better under all conditions.

6.8 Signal Warrant Analysis

Two study intersections located in the City of Long Beach are currently unsignalized:

7. San Gabriel Avenue & SR-103 NB Ramps/20th Street
8. 20th Street & Technology Place/River Avenue

Traffic volumes and lane configurations, as presented in **Appendix C**, were used to prepare signal warrant analyses at the unsignalized intersections under Baseline, Baseline plus Project, Future Base (2033), and Future plus Project conditions. Traffic signal warrants are performed using traffic signal warrants provided by the *Manual on Uniform Traffic Control Devices* (MUTCD). As shown in **Table 11**, neither unsignalized intersection would meet either peak hour signal warrants 3A or 3B during both the AM and PM peak hours under any scenarios. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecast traffic data, and a thorough study of traffic, safety, and roadway conditions by a licensed engineer. Furthermore, the decision to install a signal should not be based solely upon the warrants. Further engineering study would be required before a signal could be installed. Signal warrant analysis sheets are provided in **Appendix E**.

TABLE 11
PEAK HOUR SIGNAL WARRANT ANALYSIS

NO.	INTERSECTION	PEAK HOUR	BASELINE SIGNAL WARRANT MET	BASELINE PLUS PROJECT SIGNAL WARRANT MET	FUTURE BASE (2033) SIGNAL WARRANT MET	FUTURE PLUS PROJECT SIGNAL WARRANT MET
7	San Gabriel Av & SR-103 NB Ramps/20th St	AM	NO	NO	NO	NO
		PM	NO	NO	NO	NO
8	Technology Pl/River Av & 20th St	AM	NO	NO	NO	NO
		PM	NO	NO	NO	NO

6.9 Freeway Ramp Queueing Analysis

This section presents an analysis of potential effects of the Project on the freeway off-ramps in the study area. In coordination with Caltrans District 7 staff, a queueing analysis was conducted for the following three off-ramp locations along the I-710 and SR-103 freeways.

- I-710 SB Off-Ramp to Willow Street WB (stop-controlled)
- SR-103 Off-Ramp at San Gabriel Avenue/20th Street (all-way stop-controlled) [study intersection #7]
- I-710 SB Off-Ramp to PCH WB (free-flow)

A queuing analysis was conducted at three freeway off-ramp locations to determine queuing conditions at the off-ramps as a result of traffic from the proposed Project. Queue lengths were estimated using the Synchro/SimTraffic traffic analysis software package. Each intersection was 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. A corrective action would be considered if the 95th percentile off-ramp queue extends beyond 85% of the length of the ramp during the AM or PM peak hours.

The following intersections used the Synchro software package and the *Highway Capacity Manual,* 6th Edition (Transportation Research Board, 2016) methodology:

- I-710 SB Off-Ramp to Willow Street WB (stop-controlled)
- SR-103 Off-Ramp at San Gabriel Avenue/20th Street (all-way stop-controlled) [study intersection #7]

Due to the free-flow configuration of the I-710 SB Off-Ramp to PCH WB and its close proximity to the Harbor Avenue and PCH signalized intersection (study intersection #11), a Synchro/Sim-Traffic microsimulation analysis was performed at this location to adequately simulate off-ramp queue lengths at this location.

The analysis used 95th percentile queue calculations for the purpose of this analysis. Off-ramp queue lengths were then compared to 85% of the total off-ramp length as measured to the gore point.

Tables 12 and 13 presents the results of the queuing analysis under the following scenarios:

- Baseline Conditions
- Baseline plus Project
- Future Base (2033)
- Future plus Project

As shown in the table, the estimated 95th percentile queues would not extend beyond 85% of the length of the ramp under any scenario with the Project. Analysis sheets for the off-ramp queueing analysis are provided in **Appendix F**.

TABLE 12
FREEWAY OFF-RAMP QUEUEING ANALYSIS
BASELINE AND BASELINE PLUS PROJECT

Ramp	Cross Street	Total Capacity (ft) [a]	Turning Movements by Lanes at Intersection	Control	Baseline Conditions				Baseline + Project Conditions					
					AM 95th Percentile	PM 95th Percentile	Queue Exceeds 85% of Storage?		AM 95th Percentile	PM 95th Percentile	Queue Length Increase (ft)		Queue Exceeds 85% of Storage?	
					Queue (ft)	Queue (ft)	AM	PM	Queue (ft)	Queue (ft)	AM	PM	AM	PM
I-710 SB Off-Ramp	Willow Street (WB)	1,100	Right	TWSC	650	600	No	No	675	625	25	25	No	No
SR-103 NB Ramps	San Gabriel Avenue/20th Street	325	Left/Through/Right	AWSC	25	25	No	No	25	50	0	25	No	No
I-710 SB Off-Ramp	PCH (WB)	1,100	Right	Free-Flow	200	50	No	No	200	125	0	75	No	No

[a]: Storage lengths determined based on scaled distances from online aerial photographs. Lengths were measured from stop/merge point to the off-ramp gore point.
Queue lengths were rounded to the nearest 25'.
Queue lengths analyzed using Synchro only were calculated from the number of vehicles queued. It is assumed that each vehicle queued occupies approximately 25'.

TABLE 13
FREEWAY OFF-RAMP QUEUEING ANALYSIS
FUTURE BASE (2033) AND FUTURE PLUS PROJECT

Ramp	Cross Street	Total Capacity (ft) [a]	Turning Movements by Lanes at Intersection	Control	Future Base (2033) Conditions				Future + Project Conditions					
					AM 95th Percentile Queue (ft)	PM 95th Percentile Queue (ft)	Queue Exceeds 85% of Storage? AM	Queue Exceeds 85% of Storage? PM	AM 95th Percentile Queue (ft)	PM 95th Percentile Queue (ft)	Queue Length Increase (ft) AM	Queue Length Increase (ft) PM	Queue Exceeds 85% of Storage? AM	Queue Exceeds 85% of Storage? PM
I-710 SB Off-Ramp	Willow Street (WB)	1,100	Right	TWSC	700	650	No	No	725	675	25	25	No	No
SR-103 NB Ramps	San Gabriel Avenue/20th Street	325	Left/Through/Right	AWSC	50	50	No	No	75	75	25	25	No	No
I-710 SB Off-Ramp	PCH (WB)	1,100	Right	Free-Flow	300	100	No	No	350	150	50	50	No	No

[a]: Storage lengths determined based on scaled distances from online aerial photographs.

Queue lengths were rounded to the nearest 25'.

Queue lengths analyzed using Synchro only were calculated from the number of vehicles queued. It is assumed that each vehicle queued occupies approximately 25'.

7. Summary and Conclusions

This study was undertaken to analyze the potential traffic impacts of the proposed Specific Plan for the Century Villages at Cabrillo. The following summarizes the results of this analysis:

- The Project involves the construction of:
    - 750 affordable/supportive housing units to replace 235 affordable/supportive housing units for a total of 1,380 affordable/supportive housing units
    - 77,000 sf of Indoor Amenities to replace 10,030 sf of Indoor Amenities for a total of 79,350 sf
    - 15,000 sf of Educational uses to replace 10,200 sf of Educational uses for a total of 15,000 sf
    - 17,000 sf of additional Commercial/Retail uses for a total of 22,850 sf
    - 48,000 sf of Administrative and Supportive Services uses to replace 7,250 sf of Administrative and Supportive Services uses for a total of 67,050 sf
- The CVC campus is located north of PCH, west of Cabrillo High School, and east of SR-103. Access will remain the same as existing conditions, with the main ingress/egress driveway at the study intersection of SR-103 NB Ramps/20th Street and San Gabriel Avenue. An egress only driveway will remain at the study intersection of 20th Street and Technology Place/River Avenue. These driveways serve the CVC campus and its parking facilities via internal roadways.
- The VMT screening for the Project determined that the Project would be presumed to have a less than significant impact due to its location within a transit priority area and the Project being a 100% affordable housing project. Nonetheless, the Project Specific Plan proposes transportation demand management measures as a Project feature.
- The Project features, location, and design would be consistent with the City's plans, programs, ordinances, and policies that support alternative transportation and have been adopted to protect the environment. Therefore, the Project would have a less than significant impact on the City's transportation-related plans, programs, ordinances, and policies.
- The Project is not projected to substantially increase hazards, conflicts, or preclude City action to fulfill or implement projects associated with surrounding transportation networks and will contribute to overall walkability through enhancements to the Project site and streetscape. Therefore, the Project is expected to have a less than significant impact.
- The Project is not expected to have a direct or indirect effect that would lead to removal, modification, or degradation of pedestrian, bicycle, or transit facilities.
- The non-CEQA transportation analysis included analysis of 12 intersections, of which 10 intersections operate under signal control and the remaining two are stop-controlled. The Project would generate an estimated net increase of 327 trips during the AM peak hour and 351 trips during the PM peak hour. The LOS analysis for both the Baseline plus Project and Future (2033)

plus Project scenarios determined that the Project would not contribute to excessive delay or unacceptable LOS at 11 of the 12 of the study intersections.

- A dedicated northbound right-turn lane is proposed as a corrective action at the intersection of Harbor Avenue and PCH, which is projected to operate at LOS E during the PM peak hour for the Baseline plus Project and Future plus Project scenarios. This corrective action would improve operations at this intersection to LOS D, and would not require modifying curbs or widening the street. However, some removal of on-street parking on Harbor Avenue would be required to accommodate the striped turn lane.
- The Project Site driveways are expected to operate at LOS B or better under both the Baseline plus Project and Future plus Project scenarios.
- A peak hour signal warrant analysis at the two CVC campus driveways found that a traffic signal would not be warranted under any analysis scenario.
- The Project is not expected to cause freeway off-ramps queues to exceed 85% of the ramp length.

References

Highway Capacity Manual, 6th Edition, Transportation Research Board, 2016

City of Long Beach Municipal Code

City of Long Beach Traffic Impact Analysis (TIA) Guidelines

City of Long Beach New Traffic Impact Analysis Guidelines, June 2020

City of Long Beach Mobility Element, October 2013

City of Long Beach CX3 Pedestrian Plan, February 2017

City of Long Beach Bicycle Master Plan, February 2017

Transportation Assessment Guidelines, LADOT, July 2019

Trip Generation, 10th Edition, Institute of Transportation Engineers, 2017

APPENDIX A:
METHODOLOGIES AND ASSUMPTIONS MEMORANDUM

FEHR PEERS

MEMORANDUM

Date: February 17, 2020

To: City of Long Beach

From: Spencer Reed, PE and Ryan Liu, EIT

Subject: Methodologies and Assumptions for the Century Villages at Cabrillo Park TIA

LB19-0001

Fehr & Peers has been asked by Placeworks to assist with the transportation impact assessment for the Century Villages at Cabrillo (CVC) Project (Project) in Long Beach, California. The purpose of this memorandum is to document the methodologies and assumptions which will be used in the Transportation Impact Analysis so there is an opportunity to approve the approach prior to the completion of the traffic study.

The remainder of this memorandum is divided into the following sections: Project Description, Trip Generation, Trip Distribution, Study Area, Data Collection, Analysis Scenarios, Impact Analysis Guidelines, Signal Warrant Analysis, VMT Analysis, and Operations and Methodology Assumptions.

Project Description

The Project involves the reconstruction of significant portions of the CVC area to provide for more affordable housing units and additional community supporting uses for a total of approximately 1,458,597 square feet (sf) of development. The Project will open in phases up till the year 2033. The Project will specifically include the following:

- 750 affordable/supportive housing units to replace 215 affordable/supportive housing units
- 77,000 sf of Indoor Amenities to replace 10,030 sf of Indoor Amenities
- 15,000 sf of Educational uses to replace 10,200 sf of Educational uses
- 17,000 sf of additional Commercial/Retail uses

- 48,000 sf of Administrative and Supportive Services uses to replace 7,250 sf of Administrative and Supportive Services uses

The CVC area is bounded by SR-103 (Terminal Island Freeway) to the west, Cabrillo High School to the north and east, and 20th Street to the south. Further to the south is SR-1 (Pacific Coast Highway (PCH)), which provides primary access to the CVC area from San Gabriel Avenue, Technology Place, and 20th Street. The Terminal Island Freeway is currently a four-lane controlled access freeway linking the Port of Long Beach to Willow Street. No vehicular access is provided to Cabrillo High School to the north or east, but students who live in CVC are allowed to walk directly into Cabrillo High School via a pedestrian gate without needing to walk down to PCH. PCH is a four-lane arterial between the Terminal Island Freeway and the I-710 Freeway, and a six-lane arterial west of the Terminal Island Freeway and east of the I-710 Freeway. Various light industrial and commercial uses line PCH in the CVC area, and parking is allowed on both sides of the street. 20th Street, San Gabriel Avenue, and Technology Place are local streets with one lane in each direction. On-street parking is not allowed on either side of these streets in the vicinity of the Project site. A variety of light industrial/warehouse and office uses surround these streets between the CVC area to the north, and PCH to the south.

Project Trip Generation

Trip generation rates from *Trip Generation, 10th Edition* (Institute of Transportation Engineers [ITE], 2017) were used to estimate the number of trips for most uses associated with the Project. ITE trip generation rates for General Office (ITE Code 710), Residential Community Center (ITE Code 495), and Shopping Center (820) were used to estimate trips for the Administrative and Supportive Services use, Indoor Amenities and Educational uses, and retail uses, respectively. Because multifamily affordable housing trip generation rates are not available from ITE, local trip generation rates from the region were used. The Los Angeles Department of Transportation (LADOT) has published trip generation rates for affordable housing in their *Transportation Assessment Guidelines (TAG)*, 2019, which were used for this project. These trip generation rates were calibrated to reflect the local conditions of the existing CVC.

Trip Generation Calibration

The trip generation rates from *Trip Generation, 10th Edition and the Transportation Assessment Guidelines* were calibrated to reflect existing driveway counts conducted at CVC. New 24-hour driveway counts were collected at both existing CVC driveways on Tuesday, December 17, 2019 to

determine existing land use trip activity. Table 1 shows the existing active land uses and driveway counts at CVC. Under these existing conditions, a total of 3,069 daily vehicle trips were counted at both driveways, of which 256 trips (141 inbound/115 outbound) occurred in the AM peak hour of 7:45 AM – 8:45 AM, and 253 trips (106 inbound/147 outbound) occurred in the PM peak hour of 4:00 PM – 5:00 PM.

As the mix of uses attract trips within CVC and the site is served by multiple transit lines, internal capture and transit credit reductions were applied to the trip generation rates to calibrate the existing trip generation to the driveway counts. Internal trip credits are a reduction to the trip generation estimates for all individual land uses to account for trips internal to the site. These are trips are usually made by walking within the site. Transit credits area applied to account for people who travel to the site by transit instead of driving a vehicle.

Table 2 identifies the calibrations applied to the trip generation rates of the existing land uses and compares the resulting calibrated results to the driveway counts. As documented in Table 2, the calibrated trip generation estimate is higher by 60 daily trips, 58 trips (0 inbound/58 outbound) in the AM peak hour, and 51 trips (51 inbound/0 outbound) in the PM peak hour. These calibrations are considered appropriate as the resulting trip generation estimate is not lower than the driveway counts.

Project Trip Generation Estimates

Table 3 presents the estimated trip generation using calibrated trip generation rates for the fully built project. An existing use credit was taken for the entire site using the count data. As presented in Table 3, the Project is expected to generate an estimated net new external 3,263 daily trips, including 327 trips (139 inbound/188 outbound) during the AM peak hour and 351 trips (194 inbound/157 outbound) during the PM peak hour.

Study Area

The study intersections were selected in consultation with the City of Long Beach staff. Figure 1 identifies the 12 intersections that were approved by City staff for data collection:

1. Alameda Street & Sepulveda Boulevard (Lower Connector) (Carson – signalized)
2. Alameda Street & Sepulveda Boulevard (Upper Connector) (Carson – signalized)
3. SR-103 (Terminal Island Freeway) & Willow Street (Long Beach – signalized)
4. Santa Fe Avenue & Willow Street (Long Beach – signalized)

5. Alameda Street & O Street (Los Angeles – signalized)
6. Pacific Coast Highway (PCH) & O Street (Los Angeles – signalized)
7. San Gabriel Avenue/Terminal Island Freeway NB Ramps & 20th Street (Long Beach/Caltrans – unsignalized)
8. Technology Place/River Avenue & 20th Street (Long Beach – unsignalized)
9. Technology Place & PCH (Long Beach – signalized)
10. Santa Fe Avenue & PCH (Long Beach – signalized)
11. Harbor Avenue & PCH (Long Beach – signalized)
12. Magnolia Avenue & PCH (Long Beach – signalized)

Trip Distribution

The geographic distribution of trips generated by the Project is dependent on characteristics of the street system serving the Project site, the level of accessibility of routes to and from the proposed Project site, and the locations of employment and residential areas to which patrons of the Project would be drawn. The trip distribution will be finalized through conversations with city staff to ensure that the assumptions are realistic and vetted. The distribution of Project trips is illustrated in Figure 2.

Data Collection

Existing morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak period intersection counts will be conducted at the study intersections when local schools are in session.

Fehr & Peers will collect the following information in a field visit to the study area:

- Lane configurations
- Signal phasing
- Land uses in the study area
- Existing pedestrian and bicycle facilities
- On-street parking conditions
- Transit service

Additionally, Fehr & Peers requests the following information from City of Long Beach, City of Carson, and City of Los Angeles staff:

- Pending and approved development projects within 1.5 miles from the Project site that should be included in the forecasting effort
- Upcoming funded roadway improvement projects in the study area that should be considered for future analysis.
- Upcoming funded bicycle/pedestrian/transit improvements in the study area that should be considered for future analysis.
- Signal timing information at off-ramp and City of Los Angeles intersections

Analysis Scenarios

The following four scenarios will be analyzed:

- Existing Conditions – traffic counts conducted for this study will be analyzed.
- Existing plus Project – the proposed project trip generation, trip distribution, and trip assignment estimates will be added to the existing intersection and roadway segment counts.
- Buildout Year (2033) No Project – a 0.16% ambient growth rate per year will be applied to the existing counts and trips from pending and approved development projects will be manually assigned to the network. The ambient traffic growth rate per year is based on the Los Angeles County 2010 Congestion Management Plan (CMP) for Regional Statistical Area (RSA) 20, which includes Long Beach.
- Buildout Year (2033) plus Project – the proposed project trip estimates will be added to the Buildout Year No Project forecasts.

Impact Analysis Guidelines

Fehr & Peers will conduct capacity analysis at the study intersections during morning and evening peak hours. The Intersection Capacity Utilization (ICU) methodology will be used to evaluate significant impacts at all signalized Long Beach, Los Angeles, and Carson study intersections. Because the City of Los Angeles has adopted vehicle-miles-traveled (VMT) methodology for their traffic studies, there is no more methodology for analyzing intersection impacts within their City limits. However, because City of Los Angeles signalized intersections are the closest signalized intersections to the Project, they will be analyzed for informational purposes using City of Long Beach's traffic study guidelines. The Highway Capacity Manual 6th Edition (HCM) methodology will be used to evaluate significant impacts at the two unsignalized Long Beach study intersections.

Impact criteria will be applied per direction from City staff at signalized intersections in Long Beach, as well as signalized intersections in City of Los Angeles for informational purposes. The acceptable Level of Service (LOS) for intersections in the City of Long Beach is D or better. The City has determined that a significant impact has occurred where project traffic causes an intersection to go from LOS D to LOS E or F, or if project traffic causes an increase in the volume-to-capacity (v/c) ratio of 0.02 or greater when the intersection is operating at LOS E or F in the baseline scenario. As the City of Long Beach does not have significant impact criteria for unsignalized intersection, the following factors will be used to assess significant impacts at the unsignalized intersections. The intersection is projected to decline to LOS E or F from LOS D or better with the addition of traffic volumes associated with the proposed project; and the intersection meets peak hour signal warrants either caused by project volumes, or project volumes are added at an intersection that meets peak hour signal warrants in the baseline scenario(s).

Caltrans impact analysis criteria will be applied to the freeway ramp intersection at San Gabriel Avenue & 20th Street. The Caltrans' Guide for the Preparation of Traffic Impact Studies (December 2002) states, "Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" (see Appendix "C-3") on State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS." An addition of Project traffic that degrades operations from LOS D to LOS E or F or increases delay on a facility operation at LOS E or F will be considered a significant impact.

Signal Warrant Analysis

A peak hour signal warrant analysis per the *California Manual on Uniform Traffic Control Devices* (Caltrans, 2014) will be conducted for each analysis scenario at the two unsignalized intersections of San Gabriel Avenue/Terminal Island Freeway & 20th Street and Technology Place & 20th Street.

VMT Analysis

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law and started a process that will fundamentally change transportation impact analysis conducted as part of California Environmental Quality Act (CEQA) compliance. The Governor's Office of Planning and Research (OPR) was charged with developing new guidelines for evaluating transportation impacts under CEQA using methods that no longer focus on measuring automobile delay and level of service (LOS).

OPR issued proposed updates to the CEQA guidelines in support of these goals in November 2017 and a supporting technical advisory in December 2018. The updates establish vehicle miles traveled as the metric for evaluating a project's environmental impacts on the transportation system. Lead agencies, including the City of Long Beach, have until July 1, 2020 to implement these new requirements. The City of Long Beach has not yet adopted specific VMT metrics or thresholds of significance for transportation studies.

OPR has recommended that land use projects within metropolitan planning organization (MPO) areas achieve a 15 percent reduction in VMT per capita or per worker as compared to the existing regional average.

OPR also recommends that impact analysis be streamlined through Project screening. Projects identified as VMT reducing or VMT efficient projects have a presumption of a less-than significant impact on VMT, and therefore do not require a full VMT assessment. OPR identifies the following project types as appropriate for screening:

- Projects that generate fewer than 110 daily trips
- Projects located in low-VMT areas
- Projects located in a Transit Priority Area (TPA)
    - TPAs are defined as areas within ½ mile of an existing major transit stop or existing stop along a high-quality transit corridor with headways of 15 minutes of less
- Projects that are affordable housing developments

CVC meets two of these screening criteria, as it is an affordable housing project located within a TPA. Long Beach Transit buses directly serve the interior of the campus with headways under 15 minutes. Therefore, according to OPR guidance, the Project can be considered to have a less-than-significant impact on VMT due to the both the development of affordable housing and being located within a TPA.

While the Project can be considered screened out of such an analysis, the following VMT scenarios have been requested for analysis:

- Baseline (Existing Conditions)
- Baseline Plus Project
- Future (2033 Conditions)
- Future Plus Project

The VMT analysis will include an evaluation of Project generated VMT for the Baseline and Future conditions. The baseline year will likely be different than the base year of the regional travel demand model. Establishing the baseline year will be important for threshold setting and will be determined through linear interpolation of the forecasts. To assist with establishing a VMT threshold, the Baseline and Future Conditions VMT per service population at the county level will be calculated using the Origin/Destination method to establish benchmark of VMT per service population. The Baseline and Future plus Project VMT will be calculated and would be identified as less-than-significant if it is achieving a 15 percent reduction in VMT per service population compared to Baseline and Future county conditions, respectively.

The VMT analysis will include an evaluation of Project effect on VMT for the Future conditions. To assist with establishing a VMT threshold, the Future Conditions VMT per service population at the county level will be calculated using the boundary method to establish benchmark of VMT per service population. The project effect on VMT will be calculated and would be identified as less-than-significant if there is no increase in VMT per service population compared to the Future county conditions.

Summary tables will be provided to document VMT per service population for each of the four study scenarios at countywide geographic scale. Based on the conversation regarding VMT thresholds and impact criteria with the project team and City, we will identify the project generated and project effect on VMT.

If VMT significant impacts are found, a variety of transportation demand management (TDM) programs and projects would be explored as mitigations.

Operations and Methodology Assumptions

The following parameters will be used in our operations analysis:

- ICU methodology to analyze signalized study intersections in Long Beach, Los Angeles, and Carson.
- Synchro 10 software and HCM 6th Edition methodology to analyze stop-controlled study intersections in Long Beach.
- Volume to capacity (V/C) ratios will be reported for the signalized Long Beach, Los Angeles, and Carson study intersections under the ICU methodology.
- Average delay will be reported for the stop controlled study under the HCM 6th Edition methodology.

- Lane capacities of 1,600 per hour per lane for through and turn lanes will be used for all volume/capacity calculations.
- A base saturation flow rate of 1,900 pc/hr/ln will be used for all lane groups in the HCM intersection analysis
- Heavy vehicle percentages for HCM intersection analysis will be determined based on the traffic counts
- The peak hour factor (PHF) of each existing intersection count will be used for the existing HCM intersection analysis.
- Under Buildout Conditions a PHF of 0.92 will be used for the HCM intersection analysis.
- VMT would be measured using the SCAG travel demand model for the transportation analysis zone (TAZ) containing the CVC campus.

Next Steps

Once the proposed assumptions and methodology are approved, Fehr & Peers will begin the traffic operations analysis for this Project to identify potential significant impacts.

TABLE 1
EXISTING SITE COUNTS
CENTURY VILLAGES AT CABRILLO

Land Use	Size	Existing Counts						
		Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Existing Land Uses								
Multifamily Housing	845 du							
Administrative and Supportive Services	26.30 ksf	3,069	141	115	256	106	147	253
Amenities and Education	22.58 ksf							
Retail	5.85 ksf							
Existing Land Use Counts		**3,069**	**141**	**115**	**256**	**106**	**147**	**253**

Notes:

Existing driveway counts taken in December, 2019.

TABLE 2
ITE TRIP GENERATION RATES CALIBRATED TO EXISTING SITE COUNTS
CENTURY VILLAGES AT CABRILLO

Land Use	ITE Land Use Code	Existing Size	Trip Generation Rates [a]							Estimated Trip Generation						
			Daily	AM Peak Hour			PM Peak Hour			Trip Rate	Daily	AM Peak Hour Trips			PM Peak Hour Trips		
			Rate	Rate	% In	% Out	Rate	% In	% Out	Unit	Trips	In	Out	Total	In	Out	Total
Existing Land Uses Trip Generation Estimation																	
Multifamily Housing	[b]	845 du	4.15	0.55	40%	60%	0.43	55%	45%	per du	3,507	186	279	465	200	163	363
Internal capture [c]			*20%*	*35%*			*25%*				*(701)*	*(65)*	*(98)*	*(163)*	*(50)*	*(41)*	*(91)*
Transit credit [d]			*10%*	*10%*			*10%*				*(281)*	*(12)*	*(18)*	*(30)*	*(15)*	*(12)*	*(27)*
Net External Trips											2,525	109	163	272	135	110	245
Administrative and Supportive Services [e]	710	26.300 ksf	9.74	1.16	86%	14%	1.15	16%	84%	per ksf	256	27	4	31	5	25	30
Internal capture [c]			*25%*	*25%*			*25%*				*(64)*	*(7)*	*(1)*	*(8)*	*(1)*	*(6)*	*(7)*
Transit credit [d]			*10%*	*10%*			*10%*				*(19)*	*(2)*	*0*	*(2)*	*0*	*(2)*	*(2)*
Net External Trips											173	18	3	21	4	17	21
Amenities and Education [f]	495	22.580 ksf	28.82	1.76	66%	34%	2.31	47%	53%	per ksf	651	26	14	40	24	28	52
Internal capture [c]			*50%*	*50%*			*50%*				*(326)*	*(13)*	*(7)*	*(20)*	*(12)*	*(14)*	*(26)*
Transit credit [d]			*10%*	*10%*			*10%*				*(33)*	*(1)*	*(1)*	*(2)*	*(1)*	*(1)*	*(2)*
Net External Trips											292	12	6	18	11	13	24
Retail	820	5.850 ksf	37.75	0.94	62%	38%	3.81	48%	52%	per ksf	221	3	2	5	11	11	22
Internal capture [c]			*30%*	*30%*			*30%*				*(66)*	*(1)*	*(1)*	*(2)*	*(3)*	*(3)*	*(6)*
Transit credit [d]			*10%*	*10%*			*10%*				*(16)*	*0*	*0*	*0*	*(1)*	*(1)*	*(2)*
Net External Trips											139	2	1	3	7	7	14
Existing Land Uses Trip Generation Estimation Total											**3,129**	**141**	**173**	**314**	**157**	**147**	**304**
Existing Land Use Trip Generation Count																	
Multifamily Housing	[g]	845 du															
Administrative and Supportive Services	[g]	26.30 ksf									**3,069**	**141**	**115**	**256**	**106**	**147**	**253**
Amenities and Education	[g]	22.58 ksf															
Retail	[g]	5.85 ksf															
Trip Generation Estimation and Count Difference											**60**	**0**	**58**	**58**	**51**	**0**	**51**

Notes:

a. Original trip generation rates based on information from Institute of Transportation Engineers (ITE), *Trip Generation, 10th Edition* , 2017, unless otherwise noted.

b. ITE does not provide trip generation rates for affordable housing developments. Locally derived trip affordable housing generation rates were used from the Los Angeles Department of Transportation's *Transportation Assessment Guidelines* , 2019.

c. Internal capture represents the percentage of trips between land uses that occur within the site. Credit estimated based on existing site counts.

d. Transit credit based on proximity to existing and planned transit service, and proposed incentive programs, on-site transit center, and shuttle services.

e. Administrative and Supportive Services assumed to be office space.

f. Amenities and Education assumed to be recreational facilities with classes and other activites for residents.

g. Existing driveway counts taken in December, 2019.

TABLE 3
FULL PROJECT BUILDOUT TRIP GENERATION
CENTURY VILLAGES AT CABRILLO

Land Use	ITE Land Use Code	Existing Size	Trip Generation Rates [a]							Estimated Trip Generation						
			Daily	AM Peak Hour			PM Peak Hour			Trip Rate	Daily	AM Peak Hour Trips			PM Peak Hour Trips		
			Rate	Rate	% In	% Out	Rate	% In	% Out	Unit	Trips	In	Out	Total	In	Out	Total
Full Buildout																	
Multifamily Housing	[b]	1380 du	4.15	0.55	40%	60%	0.43	55%	45%	per du	5,727	304	455	759	326	267	593
Internal capture [c]			*20%*	*35%*			*25%*				*(1,145)*	*(106)*	*(159)*	*(265)*	*(82)*	*(67)*	*(149)*
Transit credit [d]			*10%*	*10%*			*10%*				*(458)*	*(20)*	*(30)*	*(50)*	*(24)*	*(20)*	*(44)*
Net External Trips											4,124	178	266	444	220	180	400
Administrative and Supportive Services [e]	710	67.050 ksf	9.74	1.16	86%	14%	1.15	16%	84%	per ksf	653	67	11	78	12	65	77
Internal capture [c]			*25%*	*25%*			*25%*				*(163)*	*(17)*	*(3)*	*(20)*	*(3)*	*(16)*	*(19)*
Transit credit [d]			*10%*	*10%*			*10%*				*(49)*	*(5)*	*(1)*	*(6)*	*(1)*	*(5)*	*(6)*
Net External Trips											441	45	7	52	8	44	52
Amenities and Education [f]	495	94.350 ksf	28.82	1.76	66%	34%	2.31	47%	53%	per ksf	2,719	110	56	166	102	116	218
Internal capture [c]			*50%*	*50%*			*50%*				*(1,360)*	*(55)*	*(28)*	*(83)*	*(51)*	*(58)*	*(109)*
Transit credit [d]			*10%*	*10%*			*10%*				*(136)*	*(6)*	*(3)*	*(9)*	*(5)*	*(6)*	*(11)*
Net External Trips											1,223	49	25	74	46	52	98
Retail	820	22.850 ksf	37.75	0.94	62%	38%	3.81	48%	52%	per ksf	863	13	8	21	42	45	87
Internal capture [c]			*30%*	*30%*			*30%*				*(259)*	*(4)*	*(2)*	*(6)*	*(13)*	*(14)*	*(27)*
Transit credit [d]			*10%*	*10%*			*10%*				*(60)*	*(1)*	*(1)*	*(2)*	*(3)*	*(3)*	*(6)*
Net External Trips											544	8	5	13	26	28	54
Project Total Net External Trips											**6,332**	**280**	**303**	**583**	**300**	**304**	**604**
Existing Land Uses																	
Multifamily Housing	[g]	845 du															
Administrative and Supportive Services	[g]	26.30 ksf									**3,069**	**141**	**115**	**256**	**106**	**147**	**253**
Amenities and Education	[g]	22.58 ksf															
Retail	[g]	5.85 ksf															
Net External Project Trips											**3,263**	**139**	**188**	**327**	**194**	**157**	**351**

Notes:

a. Original trip generation rates based on information from Institute of Transportation Engineers (ITE), *Trip Generation, 10th Edition* , 2017, unless otherwise noted.

b. ITE does not provide trip generation rates for affordable housing developments. Locally derived trip affordable housing generation rates were used from the Los Angeles Department of Transportation's *Transportation Assessment Guidelines* , 2019.

c. Internal capture represents the percentage of trips between land uses that occur within the site. Credit estimated based on existing site counts.

d. Transit credit based on proximity to existing and planned transit service, and proposed incentive programs, on-site transit center, and shuttle services.

e. Administrative and Supportive Services assumed to be office space.

f. Amenities and Education assumed to be recreational facilities with classes and other activites for residents.

g. Existing driveway counts taken in December, 2019.

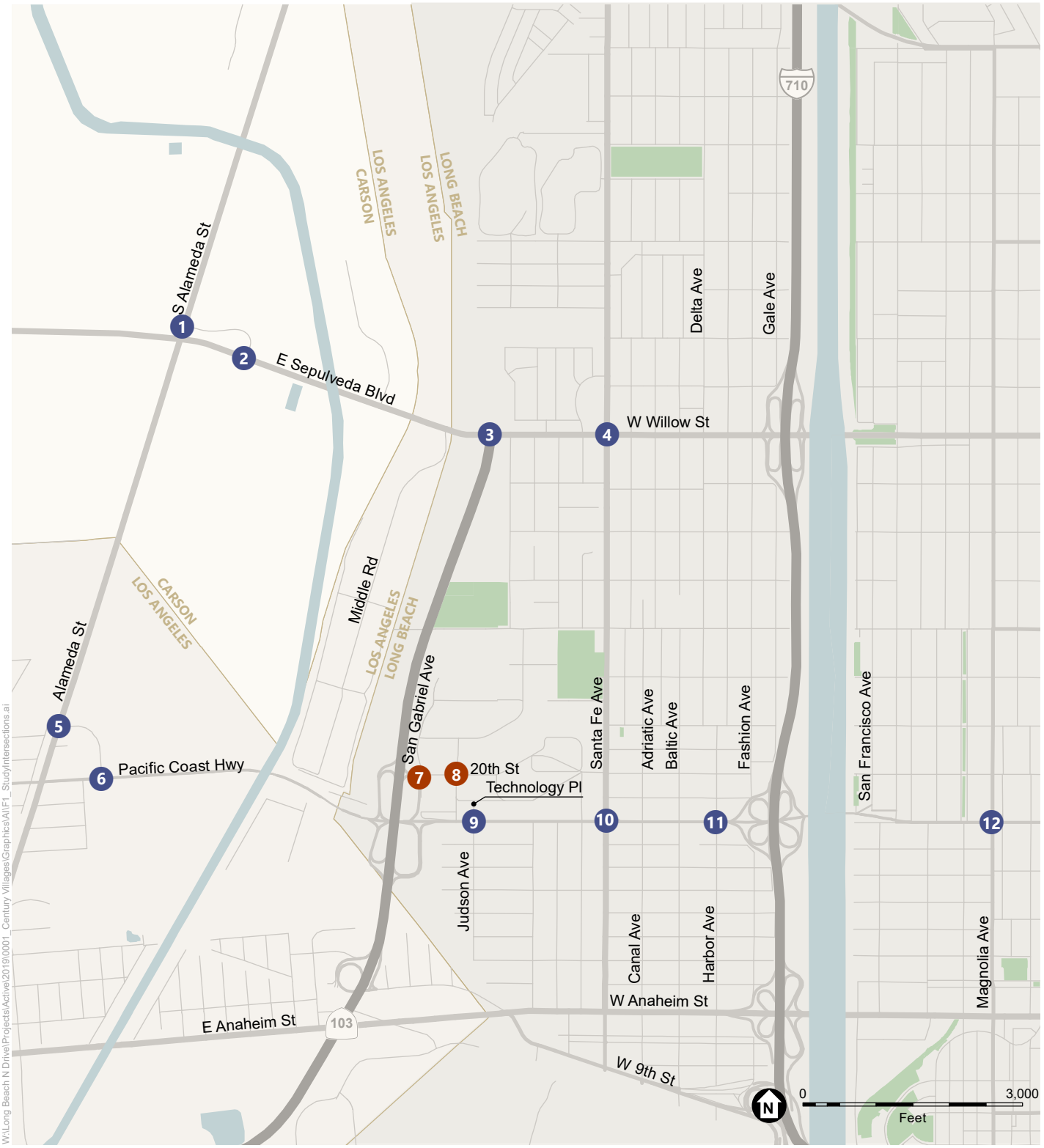
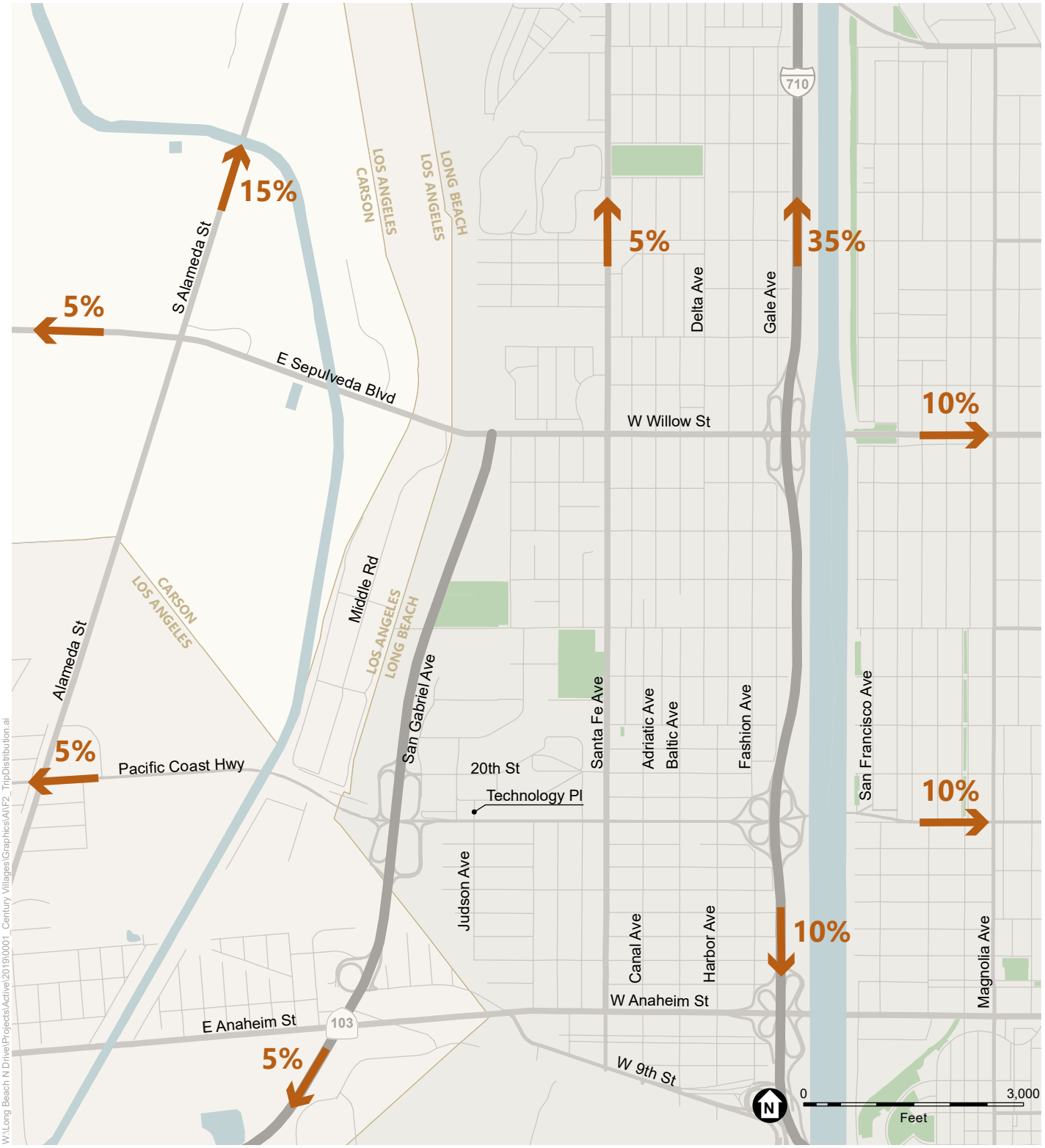


Figure 1

Study Intersections



X% Trip distribution

Figure 2

Trip Distribution

APPENDIX B:
COUNT SHEETS

Historical Counts

National Data & Surveying Services Intersection Turning Movement Count

Location: Alameda St & Sepulveda Blvd
City: Carson
Control: Signalized

Project ID: Historical
Date: 1/23/2018

Total

NS/EW Streets:	Alameda St				Alameda St				Sepulveda Blvd				Sepulveda Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	1	3	0	0	0	0	0	0	1.3	0.3	1.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	96	6	0	72	231	0	0	0	0	0	0	11	0	54	0	470
7:15 AM	0	101	15	0	64	247	0	0	0	0	0	0	13	0	60	0	500
7:30 AM	0	131	13	0	90	263	0	0	0	0	0	0	12	0	88	0	597
7:45 AM	0	159	25	0	77	232	0	0	0	0	0	0	19	0	98	0	610
8:00 AM	0	147	21	0	94	235	0	0	0	0	0	0	7	0	86	0	590
8:15 AM	0	189	18	0	60	193	0	0	0	0	0	0	16	0	76	0	552
8:30 AM	0	171	18	0	57	204	0	0	0	0	0	0	15	0	81	0	546
8:45 AM	0	114	16	0	48	205	0	0	0	0	0	0	11	0	80	0	474
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1108	132	0	562	1810	0	0	0	0	0	0	104	0	623	0	4339
APPROACH %'s :	0.00%	89.35%	10.65%	0.00%	23.69%	76.31%	0.00%	0.00%					14.31%	0.00%	85.69%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	626	77	0	321	923	0	0	0	0	0	0	54	0	348	0	2349
PEAK HR FACTOR :	0.000	0.828	0.770	0.000	0.854	0.877	0.000	0.000	0.000	0.000	0.000	0.000	0.711	0.000	0.888	0.000	0.963
		0.849				0.881								0.859			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	1	3	0	0	0	0	0	0	1.3	0.3	1.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	140	12	0	72	244	0	0	0	0	0	0	17	0	120	0	605
4:15 PM	0	200	20	0	52	229	0	0	0	0	0	0	24	0	107	0	632
4:30 PM	0	200	37	0	66	236	0	0	0	0	0	0	19	0	131	0	689
4:45 PM	0	252	17	0	82	297	0	0	0	0	0	0	17	0	96	0	761
5:00 PM	0	249	22	0	82	269	0	0	0	0	0	0	15	0	110	0	747
5:15 PM	0	189	32	0	70	262	0	0	0	0	0	0	17	0	89	0	659
5:30 PM	0	173	17	0	79	269	0	0	0	0	0	0	16	0	117	0	671
5:45 PM	0	166	12	0	63	228	0	0	0	0	0	0	10	0	113	0	592
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1569	169	0	566	2034	0	0	0	0	0	0	135	0	883	0	5356
APPROACH %'s :	0.00%	90.28%	9.72%	0.00%	21.77%	78.23%	0.00%	0.00%					13.26%	0.00%	86.74%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	890	108	0	300	1064	0	0	0	0	0	0	68	0	426	0	2856
PEAK HR FACTOR :	0.000	0.883	0.730	0.000	0.915	0.896	0.000	0.000	0.000	0.000	0.000	0.000	0.895	0.000	0.813	0.000	0.938
		0.921				0.900								0.823			

National Data & Surveying Services Intersection Turning Movement Count

Location: Terminal Island Fwy & Willow St
City: Long Beach
Control: Signalized

Project ID: Historical
Date: 5/23/2018

Total

NS/EW Streets:	Terminal Island Fwy				Terminal Island Fwy				Willow St				Willow St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	0.5	2	0	0	1	0	0	1	3	0	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	61	0	26	0	0	0	0	0	0	67	44	0	45	168	1	0	412
7:15 AM	38	0	36	0	0	0	0	0	0	82	62	0	40	179	0	0	437
7:30 AM	51	0	47	0	0	0	1	0	0	114	52	0	54	170	1	0	490
7:45 AM	64	0	43	0	0	0	0	0	0	118	52	0	58	171	0	0	506
8:00 AM	70	0	38	1	0	0	0	0	0	106	59	0	37	149	1	0	461
8:15 AM	75	0	36	0	0	0	0	0	1	109	82	0	41	149	0	0	493
8:30 AM	77	0	48	0	0	1	0	0	0	85	67	0	35	108	0	0	421
8:45 AM	64	0	42	0	0	0	0	0	1	79	70	1	27	119	0	0	403
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	500	0	316	1	0	1	1	0	2	760	488	1	337	1213	3	0	3623
APPROACH %'s :	61.20%	0.00%	38.68%	0.12%	0.00%	50.00%	50.00%	0.00%	0.16%	60.75%	39.01%	0.08%	21.70%	78.11%	0.19%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	260	0	164	1	0	0	1	0	1	447	245	0	190	639	2	0	1950
PEAK HR FACTOR :	0.867	0.000	0.872	0.250	0.000	0.000	0.250	0.000	0.250	0.947	0.747	0.000	0.819	0.934	0.500	0.000	0.963
	0.957				0.250				0.902				0.907				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	0.5	2	0	0	1	0	0	1	3	0	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	106	0	93	0	0	0	1	0	0	219	63	0	35	105	0	0	622
4:15 PM	115	0	106	0	0	0	0	0	0	215	73	0	49	111	0	0	669
4:30 PM	104	0	103	0	2	0	0	0	0	255	56	0	51	95	0	0	666
4:45 PM	91	0	102	0	0	0	0	0	0	244	62	0	53	110	0	0	662
5:00 PM	58	0	117	0	0	0	0	0	0	245	76	1	35	85	0	0	617
5:15 PM	46	0	96	0	0	0	0	0	0	211	82	0	34	117	0	0	586
5:30 PM	31	0	66	0	0	0	0	0	0	241	71	0	33	82	3	0	527
5:45 PM	36	0	44	0	0	0	0	0	0	209	77	0	40	93	0	0	499
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	587	0	727	0	2	0	1	0	0	1839	560	1	330	798	3	0	4848
APPROACH %'s :	44.67%	0.00%	55.33%	0.00%	66.67%	0.00%	33.33%	0.00%	0.00%	76.63%	23.33%	0.04%	29.18%	70.56%	0.27%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	416	0	404	0	2	0	1	0	0	933	254	0	188	421	0	0	2619
PEAK HR FACTOR :	0.904	0.000	0.953	0.000	0.250	0.000	0.250	0.000	0.000	0.915	0.870	0.000	0.887	0.948	0.000	0.000	0.979
	0.928				0.375				0.954				0.934				

National Data & Surveying Services Intersection Turning Movement Count

Location: Santa Fe Ave & Willow St
City: Long Beach
Control: Signalized

Project ID: Historical
Date: 5/23/2018

Total

NS/EW Streets:	Santa Fe Ave				Santa Fe Ave				Willow St				Willow St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	2	2	0	0	1	2	0	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	19	35	24	0	28	75	28	0	18	115	8	0	40	187	37	0	614
7:15 AM	27	89	48	0	41	87	32	0	23	138	9	0	61	185	35	0	775
7:30 AM	20	125	55	0	77	176	48	0	32	160	10	0	87	195	55	0	1040
7:45 AM	31	176	52	0	78	148	35	0	37	161	17	0	75	196	61	0	1067
8:00 AM	25	142	48	0	72	98	34	1	30	141	13	0	45	167	55	0	871
8:15 AM	23	81	50	0	62	79	28	1	34	140	19	1	52	143	48	0	761
8:30 AM	22	73	56	0	56	79	30	1	26	149	8	0	45	130	46	0	721
8:45 AM	12	97	62	0	65	69	22	0	21	112	11	0	39	101	39	0	650
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	179	818	395	0	479	811	257	3	221	1116	95	1	444	1304	376	0	6499
APPROACH %'s :	12.86%	58.76%	28.38%	0.00%	30.90%	52.32%	16.58%	0.19%	15.42%	77.88%	6.63%	0.07%	20.90%	61.39%	17.70%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	103	532	203	0	268	509	149	1	122	600	49	0	268	743	206	0	3753
PEAK HR FACTOR :	0.831	0.756	0.923	0.000	0.859	0.723	0.776	0.250	0.824	0.932	0.721	0.000	0.770	0.948	0.844	0.000	0.879
	0.809				0.770				0.897				0.903				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	2	2	0	0	1	2	0	0	2	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	21	146	65	0	76	104	18	0	35	280	8	0	49	126	58	0	986
4:15 PM	16	118	61	0	98	121	30	0	40	257	12	0	46	149	58	0	1006
4:30 PM	19	137	62	0	83	101	25	0	44	311	6	0	42	130	55	0	1015
4:45 PM	17	140	56	0	87	80	28	0	41	274	8	0	42	126	57	0	956
5:00 PM	20	118	74	0	74	106	30	1	41	305	7	0	48	117	52	0	993
5:15 PM	19	100	50	0	88	103	21	0	39	251	9	0	40	141	53	0	914
5:30 PM	17	108	55	0	77	99	20	0	35	244	12	0	48	148	52	0	915
5:45 PM	19	71	41	0	67	95	21	0	23	213	24	1	61	115	48	0	799
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	148	938	464	0	650	809	193	1	298	2135	86	1	376	1052	433	0	7584
APPROACH %'s :	9.55%	60.52%	29.94%	0.00%	39.32%	48.94%	11.68%	0.06%	11.83%	84.72%	3.41%	0.04%	20.20%	56.53%	23.27%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	72	513	253	0	342	408	113	1	166	1147	33	0	178	522	222	0	3970
PEAK HR FACTOR :	0.900	0.916	0.855	0.000	0.872	0.843	0.942	0.250	0.943	0.922	0.688	0.000	0.927	0.876	0.957	0.000	0.978
	0.961				0.867				0.932				0.911				

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Alameda St and E O Street , City of Los Angeles

Date: 3/19/2013

Day: Tuesday

Project #: Historical

AM Peak Hour	730 AM
NOON Peak Hour	200 PM
PM Peak Hour	345 PM

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	9:00 AM	3:00 PM
PM	3:00 PM	7:00 PM

Peak Hour Summary

Southbound Approach (Alameda St)

	Lanes 0	3	1	
AM	0	540	261	484 AM
NOON	0	414	162	743 NOON
PM	0	720	242	853 PM

Eastbound Approach (E O Street)

Lanes	AM	NOON	PM
	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Westbound Approach

Lanes	AM	NOON	PM
1	249	279	300
0	0	0	0
1	94	88	93
	329	264	360

CONTROL: Signalized

Northbound Approach

	0	3	0	Lanes
AM	634	0	235	68 AM
NOON	502	0	464	102 NOON
PM	813	0	553	118 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	801	576	962
	484	743	853
East Leg	343	329	
	367	264	
	393	360	
West Leg	0	0	
	0	0	
	0	0	
South Leg	634	502	813
	303	566	671

Total Volume Per Leg

	AM	NOON	PM
North Leg	1285	1319	1815
East Leg	672	631	753
West Leg	0	0	0
South Leg	937	1068	1484

ITM Peak Hour Summary

Prepared by:

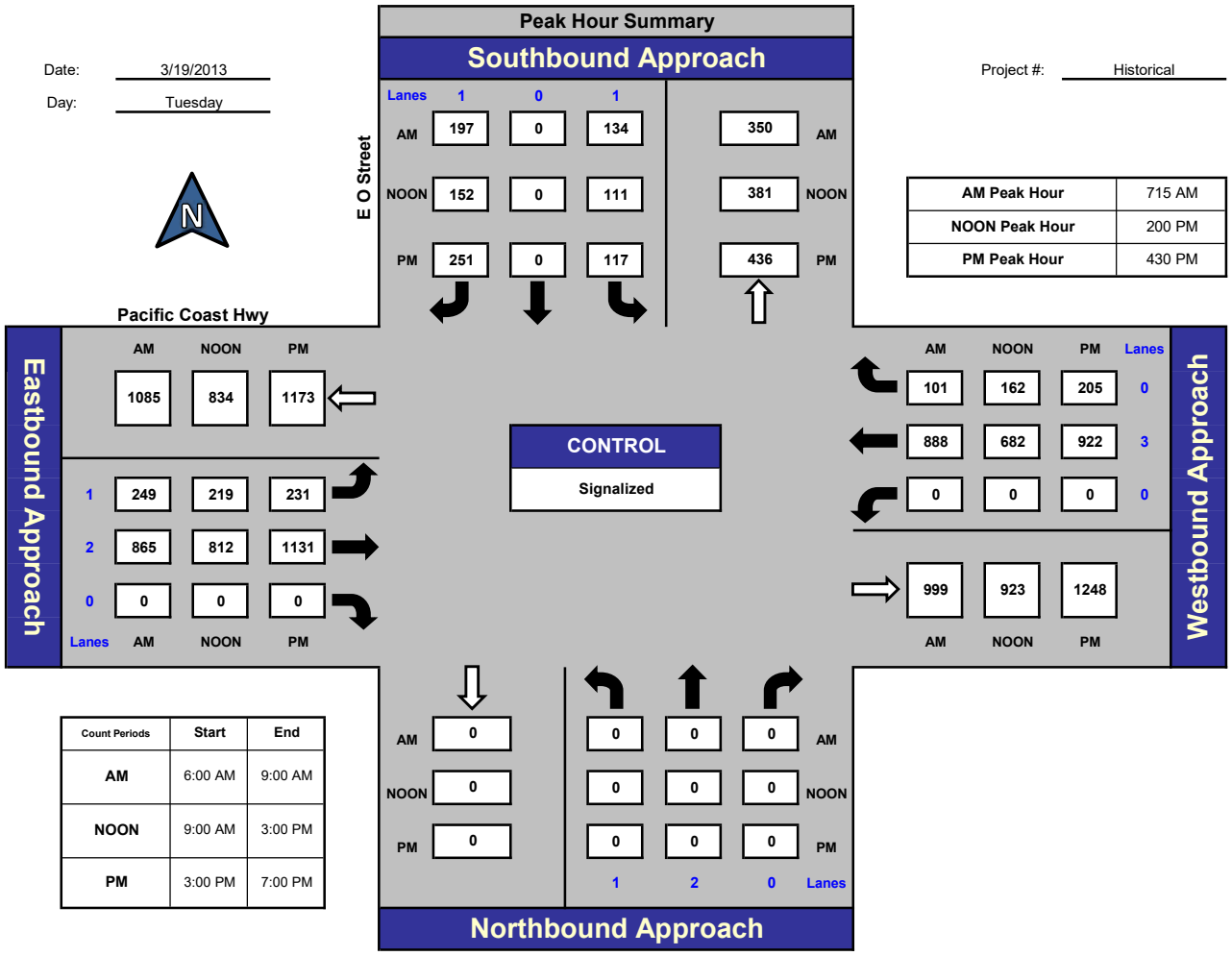
National Data & Surveying Services

E O Street and Pacific Coast Hwy , City of Los Angeles

Date: 3/19/2013

Day: Tuesday

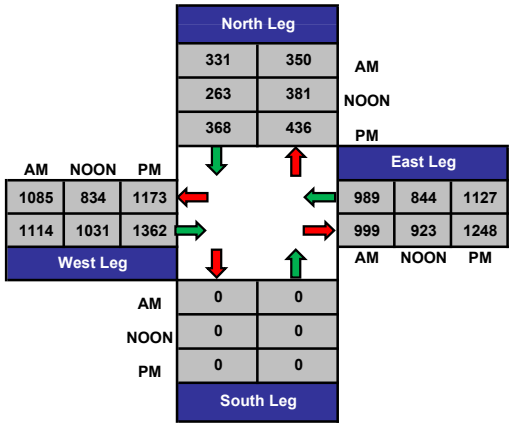
Project #: Historical



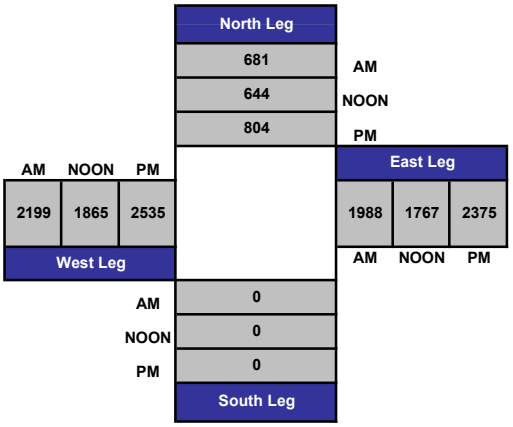
AM Peak Hour	715 AM
NOON Peak Hour	200 PM
PM Peak Hour	430 PM

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	9:00 AM	3:00 PM
PM	3:00 PM	7:00 PM

Total Ins & Outs



Total Volume Per Leg



National Data & Surveying Services

Intersection Turning Movement Count

Location: San Gabriel Ave & W 20th St/SR-103 NB Ramps
City: Long Beach
Control: 4-Way Stop

Project ID: 20-05136-007
Date: 12/17/2019

Total

NS/EW Streets:	San Gabriel Ave				San Gabriel Ave				W 20th St/SR-103 NB Ramps				W 20th St/SR-103 NB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	10	13	0	0	3	1	7	0	2	0	26	0	1	2	3	0	68
7:15 AM	11	16	0	0	3	5	8	0	9	0	46	1	2	2	2	0	105
7:30 AM	7	21	0	0	4	9	8	0	5	1	52	0	1	6	2	0	116
7:45 AM	0	33	1	0	1	2	13	0	5	1	48	0	2	9	5	0	120
8:00 AM	11	19	2	0	5	9	5	0	11	3	38	0	2	8	6	0	119
8:15 AM	10	22	0	0	2	0	13	0	5	1	31	0	2	4	5	0	95
8:30 AM	8	22	0	0	9	7	11	0	2	0	37	0	2	1	6	0	105
8:45 AM	6	20	0	0	5	9	10	0	4	0	35	0	2	3	5	0	99
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	63	166	3	0	32	42	75	0	43	6	313	1	14	35	34	0	827
APPROACH %'s :	27.16%	71.55%	1.29%	0.00%	21.48%	28.19%	50.34%	0.00%	11.85%	1.65%	86.23%	0.28%	16.87%	42.17%	40.96%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	29	89	3	0	13	25	34	0	30	5	184	1	7	25	15	0	460
PEAK HR FACTOR :	0.659	0.674	0.375	0.000	0.650	0.694	0.654	0.000	0.682	0.417	0.885	0.250	0.875	0.694	0.625	0.000	0.958
	0.890				0.857				0.948				0.734				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	14	16	0	0	9	5	25	0	4	3	48	0	4	10	3	0	141
4:15 PM	16	18	1	0	3	8	5	0	5	1	51	0	4	11	8	0	131
4:30 PM	15	17	0	0	7	10	17	0	5	6	41	0	3	6	6	0	133
4:45 PM	9	11	0	0	3	7	6	0	8	2	55	0	3	4	4	0	112
5:00 PM	11	11	1	0	8	1	15	0	4	8	25	0	2	2	6	0	94
5:15 PM	7	24	0	0	4	5	7	0	0	2	22	0	0	4	7	0	82
5:30 PM	8	19	1	0	7	1	7	0	9	0	12	0	1	2	1	0	68
5:45 PM	10	16	0	0	1	2	7	0	1	0	26	0	3	3	6	0	75
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	90	132	3	0	42	39	89	0	36	22	280	0	20	42	41	0	836
APPROACH %'s :	40.00%	58.67%	1.33%	0.00%	24.71%	22.94%	52.35%	0.00%	10.65%	6.51%	82.84%	0.00%	19.42%	40.78%	39.81%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	54	62	1	0	22	30	53	0	22	12	195	0	14	31	21	0	517
PEAK HR FACTOR :	0.844	0.861	0.250	0.000	0.611	0.750	0.530	0.000	0.688	0.500	0.886	0.000	0.875	0.705	0.656	0.000	0.917
	0.836				0.673				0.881				0.717				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Technology Pl/River Ave & W 20th St
City: Long Beach
Control: 3-Way Stop (NB/SB/EB)

Project ID: 20-05136-008
Date: 12/17/2019

Total

NS/EW Streets:	Technology Pl/River Ave				Technology Pl/River Ave				W 20th St				W 20th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	0	0	1	0	4	2	0	0	0	4	0	0	1	0	0	16
7:15 AM	2	0	1	0	0	6	2	0	0	0	4	0	1	2	0	0	18
7:30 AM	4	0	0	0	0	8	4	0	0	0	6	0	0	2	0	0	24
7:45 AM	12	0	0	0	0	5	1	0	0	0	4	0	1	0	0	0	23
8:00 AM	9	0	0	0	0	4	5	0	0	0	9	0	0	0	0	0	27
8:15 AM	8	0	2	0	0	6	3	0	0	0	2	0	0	0	0	0	21
8:30 AM	8	0	1	0	0	6	1	0	0	0	9	0	0	0	0	0	25
8:45 AM	8	0	2	0	0	6	2	0	0	0	4	0	0	0	0	0	22
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	55	0	6	1	0	45	20	0	0	0	42	0	2	5	0	0	176
APPROACH %'s :	88.71%	0.00%	9.68%	1.61%	0.00%	69.23%	30.77%	0.00%	0.00%	0.00%	100.00%	0.00%	28.57%	71.43%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	37	0	3	0	0	21	10	0	0	0	24	0	1	0	0	0	96
PEAK HR FACTOR :	0.771	0.000	0.375	0.000	0.000	0.875	0.500	0.000	0.000	0.000	0.667	0.000	0.250	0.000	0.000	0.000	0.889
	0.833				0.861				0.667				0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	13	0	1	0	0	5	2	0	0	0	11	0	1	1	0	0	34
4:15 PM	22	0	1	0	0	9	2	0	0	0	6	0	0	0	0	0	40
4:30 PM	12	0	0	0	0	7	3	0	0	0	14	0	0	0	0	0	36
4:45 PM	5	0	1	0	0	12	5	0	0	0	6	0	0	1	0	0	30
5:00 PM	7	0	0	1	0	9	3	0	0	0	13	1	0	0	0	0	34
5:15 PM	7	0	4	0	0	10	4	0	0	0	7	0	0	0	0	0	32
5:30 PM	4	0	2	1	0	5	0	0	0	0	8	0	1	0	0	0	21
5:45 PM	9	0	0	3	0	7	2	0	0	0	3	0	1	1	0	0	26
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	79	0	9	5	0	64	21	0	0	0	68	1	3	3	0	0	253
APPROACH %'s :	84.95%	0.00%	9.68%	5.38%	0.00%	75.29%	24.71%	0.00%	0.00%	0.00%	98.55%	1.45%	50.00%	50.00%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	52	0	3	0	0	33	12	0	0	0	37	0	1	2	0	0	140
PEAK HR FACTOR :	0.591	0.000	0.750	0.000	0.000	0.688	0.600	0.000	0.000	0.000	0.661	0.000	0.250	0.500	0.000	0.000	0.875
	0.598				0.662				0.661				0.375				

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Santa Fe Ave and Pacific Coast Hwy , Long Beach

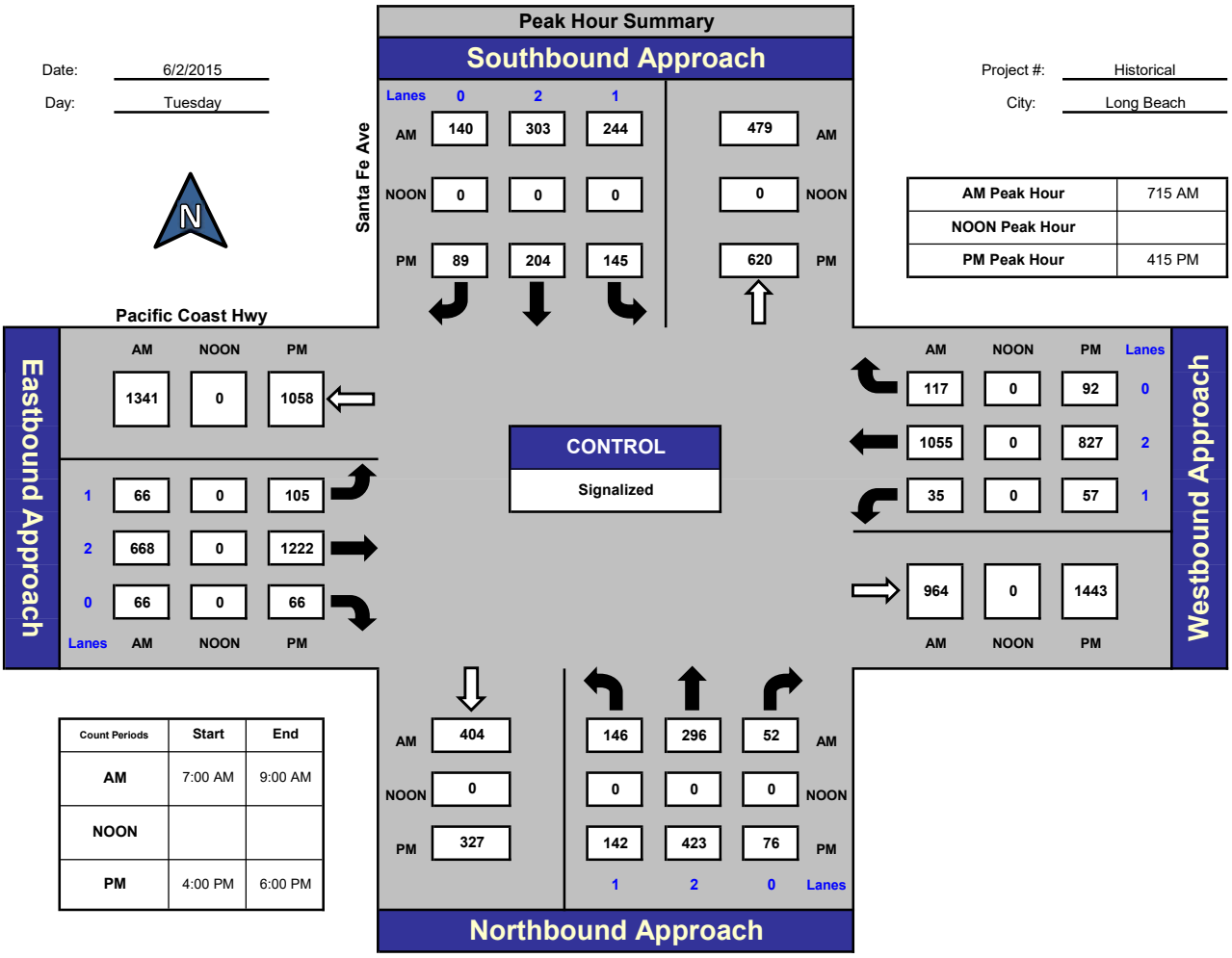
Date: 6/2/2015

Day: Tuesday

Project #: Historical

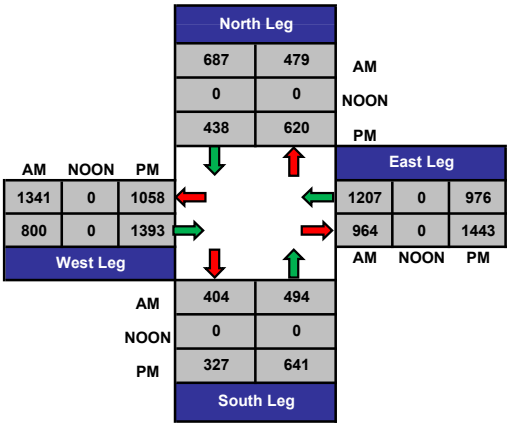
City: Long Beach

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	415 PM

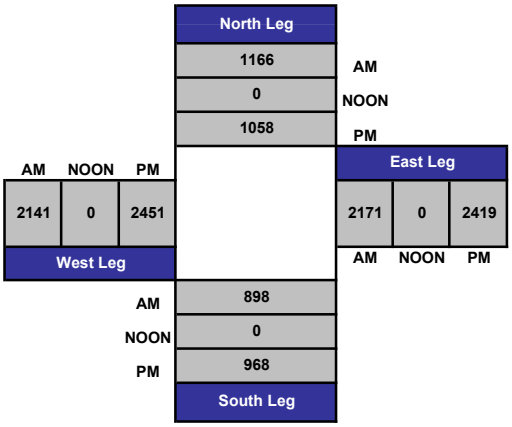


Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Harbor Ave and Pacific Coast Highway , City of Long Beach

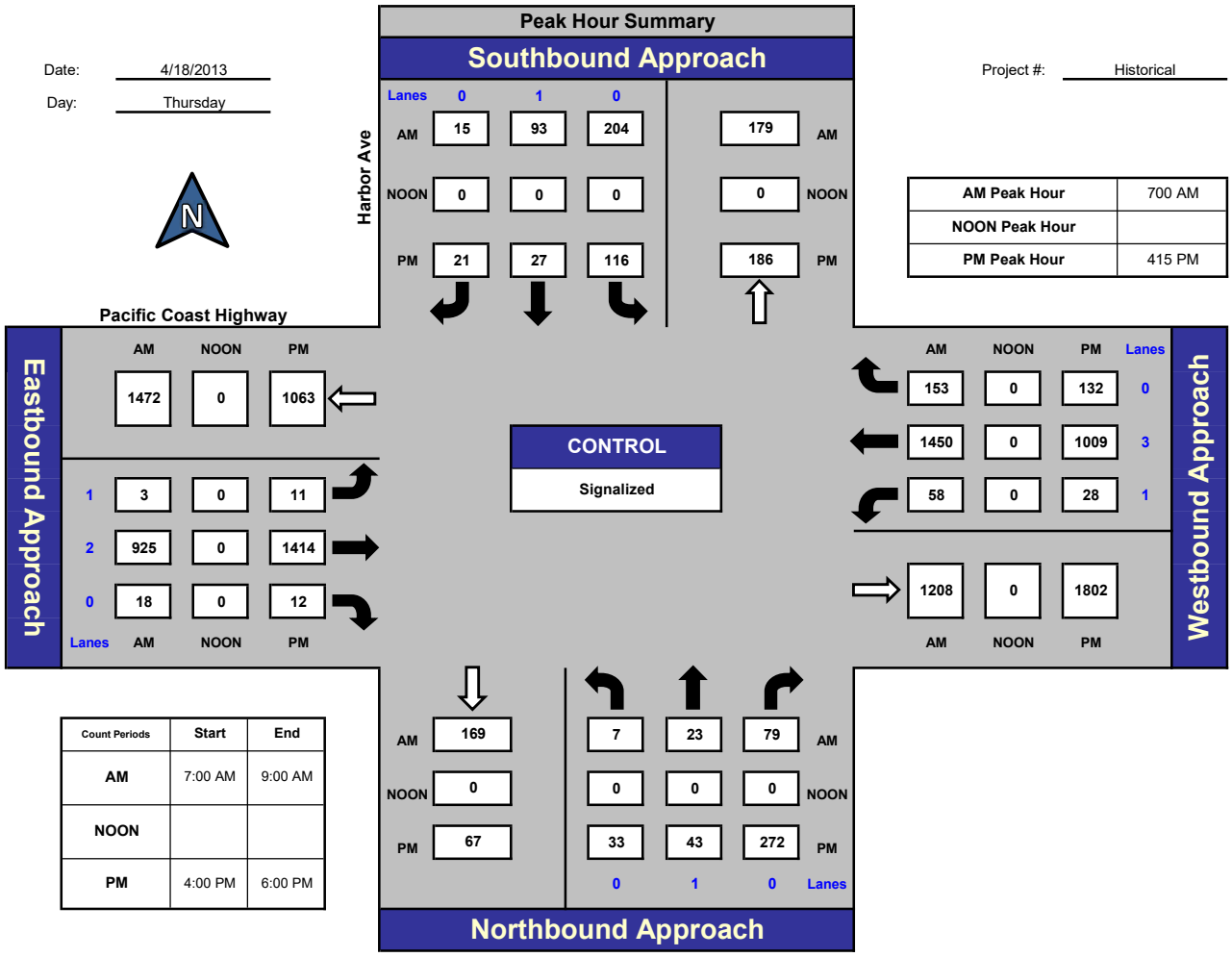
Date: 4/18/2013

Day: Thursday

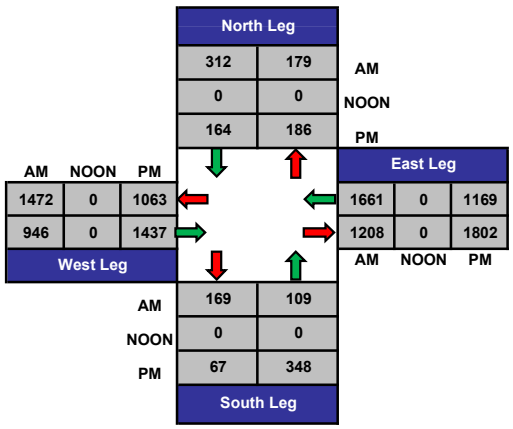
Project #: Historical

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	415 PM

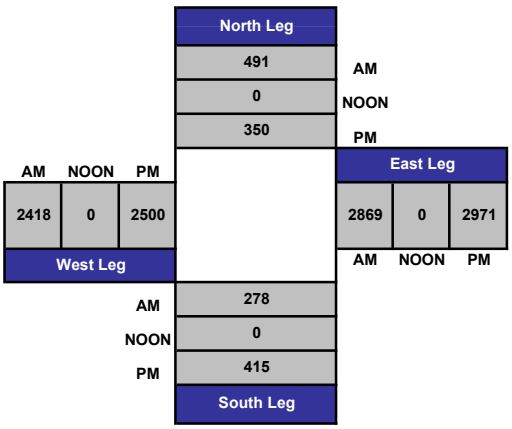
Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM



Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

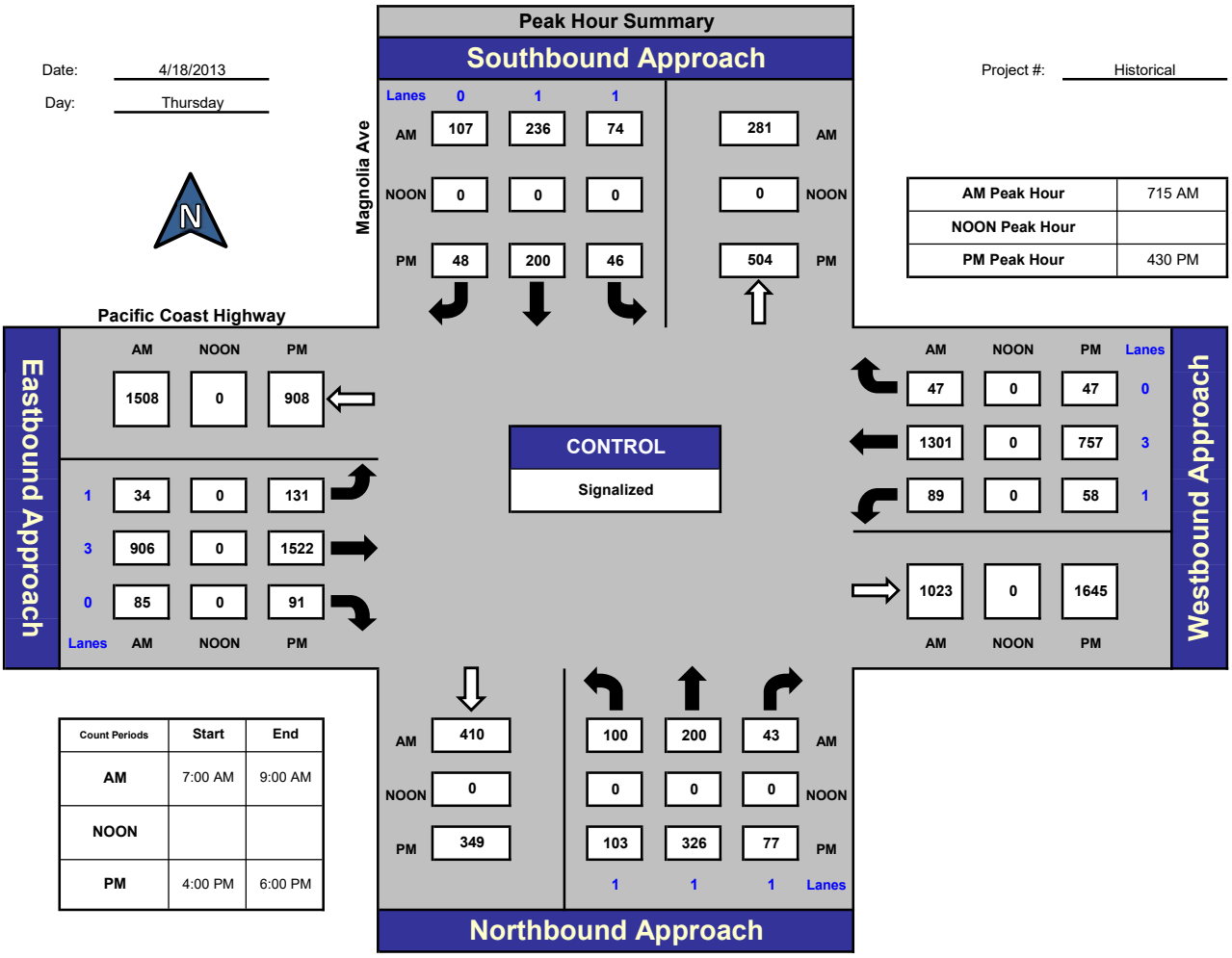
National Data & Surveying Services

Magnolia Ave and Pacific Coast Highway , City of Long Beach

Date: 4/18/2013

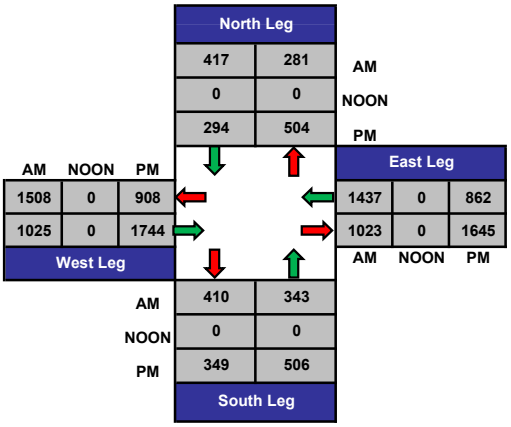
Day: Thursday

Project #: Historical

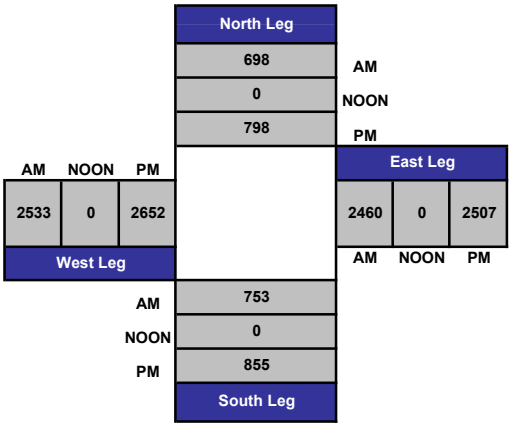


AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Total Ins & Outs



Total Volume Per Leg



National Data & Surveying Services

Intersection Turning Movement Count

Location: I-710 SB Ramps & SR-1/Pacific Coast Hwy
City: Long Beach
Control: No Control

Project ID: Historical
Date: 11/1/2018

Total

NS/EW Streets:	I-710 SB Ramps				I-710 SB Ramps				SR-1/Pacific Coast Hwy				SR-1/Pacific Coast Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	1.5	0.5	0	0	1.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	83	0	0	0	145	0	0	202	45	0	0	234	30	0	739
7:15 AM	0	0	88	0	0	0	120	0	0	209	46	0	0	279	37	0	779
7:30 AM	0	0	80	0	0	0	121	0	0	269	51	0	0	312	30	0	863
7:45 AM	0	0	82	0	0	0	109	0	0	275	48	0	0	271	37	0	822
8:00 AM	0	0	65	0	0	0	91	0	0	281	53	0	0	225	30	0	745
8:15 AM	0	0	88	0	0	0	111	0	0	247	45	0	0	237	38	0	766
8:30 AM	0	0	67	0	0	0	112	0	0	225	27	0	0	232	28	0	691
8:45 AM	0	0	69	0	0	0	125	0	0	233	40	0	0	230	33	0	730
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	622	0	0	0	934	0	0	1941	355	0	0	2020	263	0	6135
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	84.54%	15.46%	0.00%	0.00%	88.48%	11.52%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	315	0	0	0	441	0	0	1034	198	0	0	1087	134	0	3209
PEAK HR FACTOR :	0.000	0.000	0.895	0.000	0.000	0.000	0.911	0.000	0.000	0.920	0.934	0.000	0.000	0.871	0.905	0.000	0.930
	0.895				0.911				0.922				0.893				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	1.5	0.5	0	0	1.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	109	0	0	0	119	0	0	392	28	0	0	176	16	0	840
4:15 PM	0	0	89	0	0	0	124	0	0	365	28	0	0	193	6	0	805
4:30 PM	0	0	89	0	0	0	118	0	0	428	30	0	0	197	12	0	874
4:45 PM	0	0	110	0	0	0	83	0	0	425	25	0	0	159	21	0	823
5:00 PM	0	0	114	0	0	0	114	0	0	450	44	0	0	193	10	0	925
5:15 PM	0	0	96	0	0	0	122	0	0	423	47	0	0	162	19	0	869
5:30 PM	0	0	91	0	0	0	112	0	0	430	64	0	0	203	17	0	917
5:45 PM	0	0	103	0	0	0	97	0	0	359	54	0	0	182	16	0	811
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	801	0	0	0	889	0	0	3272	320	0	0	1465	117	0	6864
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	91.09%	8.91%	0.00%	0.00%	92.60%	7.40%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	411	0	0	0	431	0	0	1728	180	0	0	717	67	0	3534
PEAK HR FACTOR :	0.000	0.000	0.901	0.000	0.000	0.000	0.883	0.000	0.000	0.960	0.703	0.000	0.000	0.883	0.798	0.000	0.955
	0.901				0.883				0.966				0.891				

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

I-710 SB Offramp @ Willow St WB

Day: Wednesday
Date: 3/27/2013

City: Long Beach
Project #: Historicals

DAILY TOTALS	NB	SB	EB	WB	Total
	0	1,947	0	0	1,947

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	0	0	0	0		12:00	0	80	0	0	80
00:15	0	0	0	0		12:15	0	69	0	0	69
00:30	0	0	0	0		12:30	0	70	0	0	70
00:45	0	0	0	0		12:45	0	74 293	0	0	74 293
01:00	0	0	0	0		13:00	0	0	0	0	
01:15	0	0	0	0		13:15	0	0	0	0	
01:30	0	0	0	0		13:30	0	0	0	0	
01:45	0	0	0	0		13:45	0	0	0	0	
02:00	0	0	0	0		14:00	0	0	0	0	
02:15	0	0	0	0		14:15	0	0	0	0	
02:30	0	0	0	0		14:30	0	0	0	0	
02:45	0	0	0	0		14:45	0	0	0	0	
03:00	0	0	0	0		15:00	0	0	0	0	
03:15	0	0	0	0		15:15	0	0	0	0	
03:30	0	0	0	0		15:30	0	0	0	0	
03:45	0	0	0	0		15:45	0	0	0	0	
04:00	0	0	0	0		16:00	0	89	0	0	89
04:15	0	0	0	0		16:15	0	102	0	0	102
04:30	0	0	0	0		16:30	0	93	0	0	93
04:45	0	0	0	0		16:45	0	89 373	0	0	89 373
05:00	0	0	0	0		17:00	0	98	0	0	98
05:15	0	0	0	0		17:15	0	93	0	0	93
05:30	0	0	0	0		17:30	0	82	0	0	82
05:45	0	0	0	0		17:45	0	84 357	0	0	84 357
06:00	0	0	0	0		18:00	0	0	0	0	
06:15	0	0	0	0		18:15	0	0	0	0	
06:30	0	0	0	0		18:30	0	0	0	0	
06:45	0	0	0	0		18:45	0	0	0	0	
07:00	0	93	0	0	93	19:00	0	0	0	0	
07:15	0	126	0	0	126	19:15	0	0	0	0	
07:30	0	108	0	0	108	19:30	0	0	0	0	
07:45	0	94 421	0	0	94 421	19:45	0	0	0	0	
08:00	0	64	0	0	64	20:00	0	0	0	0	
08:15	0	65	0	0	65	20:15	0	0	0	0	
08:30	0	53	0	0	53	20:30	0	0	0	0	
08:45	0	74 256	0	0	74 256	20:45	0	0	0	0	
09:00	0	0	0	0		21:00	0	0	0	0	
09:15	0	0	0	0		21:15	0	0	0	0	
09:30	0	0	0	0		21:30	0	0	0	0	
09:45	0	0	0	0		21:45	0	0	0	0	
10:00	0	0	0	0		22:00	0	0	0	0	
10:15	0	0	0	0		22:15	0	0	0	0	
10:30	0	0	0	0		22:30	0	0	0	0	
10:45	0	0	0	0		22:45	0	0	0	0	
11:00	0	68	0	0	68	23:00	0	0	0	0	
11:15	0	53	0	0	53	23:15	0	0	0	0	
11:30	0	69	0	0	69	23:30	0	0	0	0	
11:45	0	57 247	0	0	57 247	23:45	0	0	0	0	
TOTALS		924			924	TOTALS		1023			1023
SPLIT %		100.0%			47.5%	SPLIT %		100.0%			52.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	1,947	0	0	1,947

AM Peak Hour		07:00			07:00	PM Peak Hour		16:15			16:15
AM Pk Volume		421			421	PM Pk Volume		382			382
Pk Hr Factor		0.835			0.835	Pk Hr Factor		0.923			0.936
7 - 9 Volume	0	677	0	0	677	4 - 6 Volume	0	730	0	0	730
7 - 9 Peak Hour		07:00			07:00	4 - 6 Peak Hour		16:15			16:15
7 - 9 Pk Volume	0	421	0	0	421	4 - 6 Pk Volume	0	382	0	0	382
Pk Hr Factor	0.000	0.835	0.000	0.000	0.835	Pk Hr Factor	0.000	0.936	0.000	0.000	0.936

Prepared by NDS/ATD

Prepared by National Data & Surveying Services

VOLUME

(2bf) W Willow St Btwn I710 & Magnolia Ave

Day: Tuesday
Date: 3/26/2013

City: Long Beach
Project #: Historicale

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	20,776	18,173	38,949

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	42		53		95		12:00	0	0	320		270		590	
00:15	0	0	48		30		78		12:15	0	0	309		261		570	
00:30	0	0	29		31		60		12:30	0	0	315		271		586	
00:45	0	0	30	149	28	142	58	291	12:45	0	0	307	1251	298	1100	605	2351
01:00	0	0	12		22		34		13:00	0	0	325		273		598	
01:15	0	0	12		24		36		13:15	0	0	300		257		557	
01:30	0	0	25		15		40		13:30	0	0	269		290		559	
01:45	0	0	10	59	18	79	28	138	13:45	0	0	294	1188	246	1066	540	2254
02:00	0	0	23		9		32		14:00	0	0	338		264		602	
02:15	0	0	27		19		46		14:15	0	0	331		276		607	
02:30	0	0	14		14		28		14:30	0	0	347		252		599	
02:45	0	0	19	83	16	58	35	141	14:45	0	0	338	1354	289	1081	627	2435
03:00	0	0	17		19		36		15:00	0	0	406		259		665	
03:15	0	0	19		14		33		15:15	0	0	412		270		682	
03:30	0	0	25		23		48		15:30	0	0	438		297		735	
03:45	0	0	26	87	20	76	46	163	15:45	0	0	443	1699	297	1123	740	2822
04:00	0	0	19		23		42		16:00	0	0	441		291		732	
04:15	0	0	32		36		68		16:15	0	0	468		299		767	
04:30	0	0	18		51		69		16:30	0	0	433		296		729	
04:45	0	0	37	106	52	162	89	268	16:45	0	0	475	1817	314	1200	789	3017
05:00	0	0	54		47		101		17:00	0	0	465		370		835	
05:15	0	0	64		92		156		17:15	0	0	474		355		829	
05:30	0	0	62		132		194		17:30	0	0	505		366		871	
05:45	0	0	123	303	143	414	266	717	17:45	0	0	419	1863	284	1375	703	3238
06:00	0	0	122		171		293		18:00	0	0	363		311		674	
06:15	0	0	142		202		344		18:15	0	0	381		301		682	
06:30	0	0	203		228		431		18:30	0	0	364		269		633	
06:45	0	0	228	695	269	870	497	1565	18:45	0	0	322	1430	268	1149	590	2579
07:00	0	0	256		266		522		19:00	0	0	285		268		553	
07:15	0	0	306		335		641		19:15	0	0	263		252		515	
07:30	0	0	361		325		686		19:30	0	0	240		238		478	
07:45	0	0	379	1302	367	1293	746	2595	19:45	0	0	203	991	224	982	427	1973
08:00	0	0	279		283		562		20:00	0	0	233		215		448	
08:15	0	0	267		219		486		20:15	0	0	203		213		416	
08:30	0	0	272		216		488		20:30	0	0	173		210		383	
08:45	0	0	320	1138	255	973	575	2111	20:45	0	0	168	777	180	818	348	1595
09:00	0	0	264		231		495		21:00	0	0	143		169		312	
09:15	0	0	254		215		469		21:15	0	0	132		174		306	
09:30	0	0	241		231		472		21:30	0	0	151		175		326	
09:45	0	0	294	1053	252	929	546	1982	21:45	0	0	110	536	143	661	253	1197
10:00	0	0	279		216		495		22:00	0	0	129		141		270	
10:15	0	0	245		220		465		22:15	0	0	122		103		225	
10:30	0	0	293		229		522		22:30	0	0	97		110		207	
10:45	0	0	275	1092	224	889	499	1981	22:45	0	0	93	441	108	462	201	903
11:00	0	0	264		245		509		23:00	0	0	62		74		136	
11:15	0	0	288		236		524		23:15	0	0	64		78		142	
11:30	0	0	256		250		506		23:30	0	0	64		82		146	
11:45	0	0	314	1122	261	992	575	2114	23:45	0	0	50	240	45	279	95	519
TOTALS				7189		6877		14066	TOTALS				13587		11296		24883
SPLIT %				51.1%		48.9%		36.1%	SPLIT %				54.6%		45.4%		63.9%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	20,776	18,173	38,949

AM Peak Hour			07:15		07:15		07:15		PM Peak Hour			16:45		16:45		16:45	
AM Pk Volume			1325		1310		2635		PM Pk Volume			1761		1405		3324	
Pk Hr Factor			0.874		0.892		0.883		Pk Hr Factor			0.872		0.899		0.954	
7 - 9 Volume	0	0	2440		2266		4706		4 - 6 Volume	0	0	3680		2575		6255	
7 - 9 Peak Hour			07:15		07:15		07:15		4 - 6 Peak Hour			16:45		16:45		16:45	
7 - 9 Pk Volume	0	0	1325		1310		2635		4 - 6 Pk Volume	0	0	1919		1405		3324	
Pk Hr Factor	0.000	0.000	0.874		0.892		0.883		Pk Hr Factor	0.000	0.000	0.950		0.949		0.954	

2020 Counts

National Data & Surveying Services

Intersection Turning Movement Count

Location: Alameda St & E Sepulveda Blvd Lower Connector
City: Long Beach
Control: Signalized

Project ID: 20-05137-001
Date: 4/21/2020

Total

NS/EW Streets:	Alameda St				Alameda St				E Sepulveda Blvd Lower Connector				E Sepulveda Blvd Lower Connector				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	1	2	0	0	0	0	0	0	1.3	0.3	1.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	50	7	0	45	178	0	0	0	0	0	0	7	0	20	0	307
7:15 AM	0	75	9	0	39	157	0	0	0	0	0	0	11	0	23	0	314
7:30 AM	0	82	4	0	27	155	0	0	0	0	0	0	8	0	39	0	315
7:45 AM	0	72	18	0	26	181	0	0	0	0	0	0	11	0	33	0	341
8:00 AM	0	75	10	0	25	132	0	0	0	0	0	0	8	0	44	0	294
8:15 AM	0	74	17	0	22	112	0	0	0	0	0	0	19	0	30	0	274
8:30 AM	0	92	14	0	39	109	0	0	0	0	0	0	8	0	21	0	283
8:45 AM	0	72	10	0	28	115	0	0	0	0	0	0	8	0	32	0	265
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	592	89	0	251	1139	0	0	0	0	0	0	80	0	242	0	2393
APPROACH %'s :	0.00%	86.93%	13.07%	0.00%	18.06%	81.94%	0.00%	0.00%					24.84%	0.00%	75.16%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	279	38	0	137	671	0	0	0	0	0	0	37	0	115	0	1277
PEAK HR FACTOR :	0.000	0.851	0.528	0.000	0.761	0.927	0.000	0.000	0.000	0.000	0.000	0.000	0.841	0.000	0.737	0.000	0.936
		0.881				0.906								0.809			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	1	2	0	0	0	0	0	0	1.3	0.3	1.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	151	20	0	38	122	0	0	0	0	0	0	2	0	48	0	381
4:15 PM	0	170	19	0	27	120	0	0	0	0	0	0	8	0	58	0	402
4:30 PM	0	159	13	0	41	155	0	0	0	0	0	0	9	0	64	0	441
4:45 PM	0	138	8	0	33	159	0	0	0	0	0	0	15	0	51	0	404
5:00 PM	0	161	14	0	29	135	0	0	0	0	0	0	7	0	41	0	387
5:15 PM	0	112	4	0	30	163	0	0	0	0	0	0	11	0	30	0	350
5:30 PM	0	83	5	0	26	147	0	0	0	0	0	0	6	0	50	0	317
5:45 PM	0	67	7	0	19	94	0	0	0	0	0	0	5	0	21	0	213
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1041	90	0	243	1095	0	0	0	0	0	0	63	0	363	0	2895
APPROACH %'s :	0.00%	92.04%	7.96%	0.00%	18.16%	81.84%	0.00%	0.00%					14.79%	0.00%	85.21%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	628	54	0	130	569	0	0	0	0	0	0	39	0	214	0	1634
PEAK HR FACTOR :	0.000	0.924	0.711	0.000	0.793	0.895	0.000	0.000	0.000	0.000	0.000	0.000	0.650	0.000	0.836	0.000	0.926
		0.902				0.892								0.866			

National Data & Surveying Services

Intersection Turning Movement Count

Location: E Sepulveda Blvd Lower Connector & E Sepulveda Blvd
City: Long Beach
Control: Signalized

Project ID: 20-05137-002
Date: 4/21/2020

Total

NS/EW Streets:	E Sepulveda Blvd Lower Connector				E Sepulveda Blvd Lower Connector				E Sepulveda Blvd				E Sepulveda Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1.5	0	0	1.5	0.5	1	0	1	2	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	6	1	0	29	4	19	0	7	53	1	0	2	63	12	0	197
7:15 AM	1	1	1	0	25	3	16	0	12	75	0	0	4	41	27	0	206
7:30 AM	0	3	1	0	23	1	13	0	19	75	0	0	1	75	26	0	237
7:45 AM	1	2	0	0	21	4	19	0	15	55	1	0	0	66	26	0	210
8:00 AM	1	3	0	0	17	1	15	0	19	59	1	1	0	68	32	0	217
8:15 AM	2	4	0	0	19	0	19	0	16	58	1	0	1	50	28	0	198
8:30 AM	0	2	0	0	25	3	19	0	10	53	0	0	0	48	17	0	177
8:45 AM	0	2	1	0	18	6	18	1	10	70	1	0	1	49	27	0	204
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	23	4	0	177	22	138	1	108	498	5	1	9	460	195	0	1646
APPROACH %'s :	15.63%	71.88%	12.50%	0.00%	52.37%	6.51%	40.83%	0.30%	17.65%	81.37%	0.82%	0.16%	1.36%	69.28%	29.37%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	3	9	2	0	86	9	63	0	65	264	2	1	5	250	111	0	870
PEAK HR FACTOR :	0.750	0.750	0.500	0.000	0.860	0.563	0.829	0.000	0.855	0.880	0.500	0.250	0.313	0.833	0.867	0.000	0.918
	0.875				0.898				0.883				0.897				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1.5	0	0	1.5	0.5	1	0	1	2	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	29	1	25	0	17	91	0	0	0	57	37	0	258
4:15 PM	0	0	1	0	19	1	29	0	25	77	1	1	2	71	39	0	266
4:30 PM	0	1	0	0	23	2	26	0	32	107	0	0	1	63	45	0	300
4:45 PM	0	1	0	0	14	3	20	0	18	69	0	1	1	82	48	0	257
5:00 PM	0	2	1	0	12	3	32	0	16	106	1	0	1	62	30	0	266
5:15 PM	0	1	1	0	15	1	19	0	19	95	0	0	0	59	17	0	227
5:30 PM	1	3	1	0	17	0	14	0	37	92	0	0	0	49	18	0	232
5:45 PM	0	2	0	0	12	1	16	0	16	70	0	0	0	47	9	0	173
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	11	4	0	141	12	181	0	180	707	2	2	5	490	243	0	1979
APPROACH %'s :	6.25%	68.75%	25.00%	0.00%	42.22%	3.59%	54.19%	0.00%	20.20%	79.35%	0.22%	0.22%	0.68%	66.40%	32.93%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	4	2	0	68	9	107	0	91	359	2	2	5	278	162	0	1089
PEAK HR FACTOR :	0.000	0.500	0.500	0.000	0.739	0.750	0.836	0.000	0.711	0.839	0.500	0.500	0.625	0.848	0.844	0.000	0.908
	0.500				0.902				0.817				0.849				

National Data & Surveying Services

Intersection Turning Movement Count

Location: San Gabriel Ave & W 20th St/SR-103 NB Ramps
City: Long Beach
Control: 4-Way Stop

Project ID: 20-05137-007
Date: 4/21/2020

Total

NS/EW Streets:	San Gabriel Ave				San Gabriel Ave				W 20th St/SR-103 NB Ramps				W 20th St/SR-103 NB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	8	0	0	2	1	2	0	1	0	7	0	0	3	0	0	28
7:15 AM	13	2	0	0	1	2	5	0	3	0	6	0	0	0	1	0	33
7:30 AM	8	6	0	0	0	3	7	0	1	0	13	0	0	3	2	0	43
7:45 AM	12	11	0	0	1	1	8	0	4	1	9	0	4	1	4	0	56
8:00 AM	7	10	1	0	2	5	1	0	0	0	13	0	1	1	1	0	42
8:15 AM	3	8	2	0	3	2	5	0	2	0	20	0	0	2	1	0	48
8:30 AM	7	15	1	0	3	2	6	0	3	1	25	0	2	2	0	0	67
8:45 AM	11	5	0	0	2	2	1	0	1	0	16	0	2	1	3	0	44
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	65	65	4	0	14	18	35	0	15	2	109	0	9	13	12	0	361
APPROACH %'s :	48.51%	48.51%	2.99%	0.00%	20.90%	26.87%	52.24%	0.00%	11.90%	1.59%	86.51%	0.00%	26.47%	38.24%	35.29%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	29	44	4	0	9	10	20	0	9	2	67	0	7	6	6	0	213
PEAK HR FACTOR :	0.604	0.733	0.500	0.000	0.750	0.500	0.625	0.000	0.563	0.500	0.670	0.000	0.438	0.750	0.375	0.000	0.795
	0.837				0.886				0.672				0.528				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	11	10	0	0	4	5	12	0	2	0	20	0	1	5	4	0	74
4:15 PM	2	11	1	0	5	3	7	0	1	2	35	0	1	2	3	0	73
4:30 PM	7	12	0	0	5	3	8	0	3	1	35	0	0	3	2	0	79
4:45 PM	11	16	2	0	3	1	8	0	6	1	37	0	1	6	2	1	95
5:00 PM	10	13	1	0	4	2	5	0	3	2	15	0	0	6	5	0	66
5:15 PM	2	11	0	0	4	4	6	0	4	0	7	0	1	4	5	0	48
5:30 PM	10	10	0	0	2	2	2	0	2	0	2	0	0	3	5	0	38
5:45 PM	5	13	1	0	4	3	4	0	1	0	4	0	0	1	0	0	36
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	58	96	5	0	31	23	52	0	22	6	155	0	4	30	26	1	509
APPROACH %'s :	36.48%	60.38%	3.14%	0.00%	29.25%	21.70%	49.06%	0.00%	12.02%	3.28%	84.70%	0.00%	6.56%	49.18%	42.62%	1.64%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	31	49	3	0	17	12	35	0	12	4	127	0	3	16	11	1	321
PEAK HR FACTOR :	0.705	0.766	0.375	0.000	0.850	0.600	0.729	0.000	0.500	0.500	0.858	0.000	0.750	0.667	0.688	0.250	0.845
	0.716				0.762				0.813				0.775				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Technology Pl/Judson Ave & E Pacific Coast Hwy
City: Long Beach
Control: Signalized

Project ID: 20-05137-009
Date: 4/21/2020

Total

NS/EW Streets:	Technology Pl/Judson Ave				Technology Pl/Judson Ave				E Pacific Coast Hwy				E Pacific Coast Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0.5	0.5	0	1	0.5	0.5	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	6	0	5	0	5	0	0	0	0	134	7	0	9	187	5	0	358
7:15 AM	10	1	17	0	1	2	3	0	4	145	10	0	5	192	3	0	393
7:30 AM	7	1	10	0	4	0	3	0	2	165	8	0	8	213	5	0	426
7:45 AM	7	0	7	0	5	0	4	0	8	173	10	0	8	192	7	0	421
8:00 AM	9	0	6	0	6	1	2	0	3	175	12	0	12	193	4	0	423
8:15 AM	7	0	5	0	11	0	1	0	8	159	7	0	10	167	6	0	381
8:30 AM	10	1	8	0	9	0	0	0	3	156	8	0	13	197	8	0	413
8:45 AM	10	2	11	0	8	0	1	0	2	178	11	0	7	200	5	0	435
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	66	5	69	0	49	3	14	0	30	1285	73	0	72	1541	43	0	3250
APPROACH %'s :	47.14%	3.57%	49.29%	0.00%	74.24%	4.55%	21.21%	0.00%	2.16%	92.58%	5.26%	0.00%	4.35%	93.06%	2.60%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	33	2	40	0	16	3	12	0	17	658	40	0	33	790	19	0	1663
PEAK HR FACTOR :	0.825	0.500	0.588	0.000	0.667	0.375	0.750	0.000	0.531	0.940	0.833	0.000	0.688	0.927	0.679	0.000	0.976
	0.670				0.861				0.936				0.931				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0.5	0.5	0	1	0.5	0.5	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	16	1	7	0	11	1	3	0	2	225	10	0	4	195	6	0	481
4:15 PM	11	1	9	0	13	0	2	0	6	236	11	0	1	185	7	0	482
4:30 PM	10	0	10	0	13	2	2	0	4	269	16	0	5	175	10	0	516
4:45 PM	19	0	9	0	13	1	4	0	2	267	9	0	0	191	6	0	521
5:00 PM	11	1	6	0	20	1	15	0	1	231	6	0	2	183	6	0	483
5:15 PM	5	0	9	0	15	0	7	0	3	264	13	0	1	205	5	0	527
5:30 PM	7	1	10	0	8	1	6	0	1	204	2	0	2	155	7	0	404
5:45 PM	12	0	13	0	10	0	6	0	0	171	5	0	6	154	3	0	380
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	91	4	73	0	103	6	45	0	19	1867	72	0	21	1443	50	0	3794
APPROACH %'s :	54.17%	2.38%	43.45%	0.00%	66.88%	3.90%	29.22%	0.00%	0.97%	95.35%	3.68%	0.00%	1.39%	95.31%	3.30%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	45	1	34	0	61	4	28	0	10	1031	44	0	8	754	27	0	2047
PEAK HR FACTOR :	0.592	0.250	0.850	0.000	0.763	0.500	0.467	0.000	0.625	0.958	0.688	0.000	0.400	0.920	0.675	0.000	0.971
	0.714				0.646				0.939				0.935				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Santa Fe Ave & E Pacific Coast Hwy
City: Long Beach
Control: Signalized

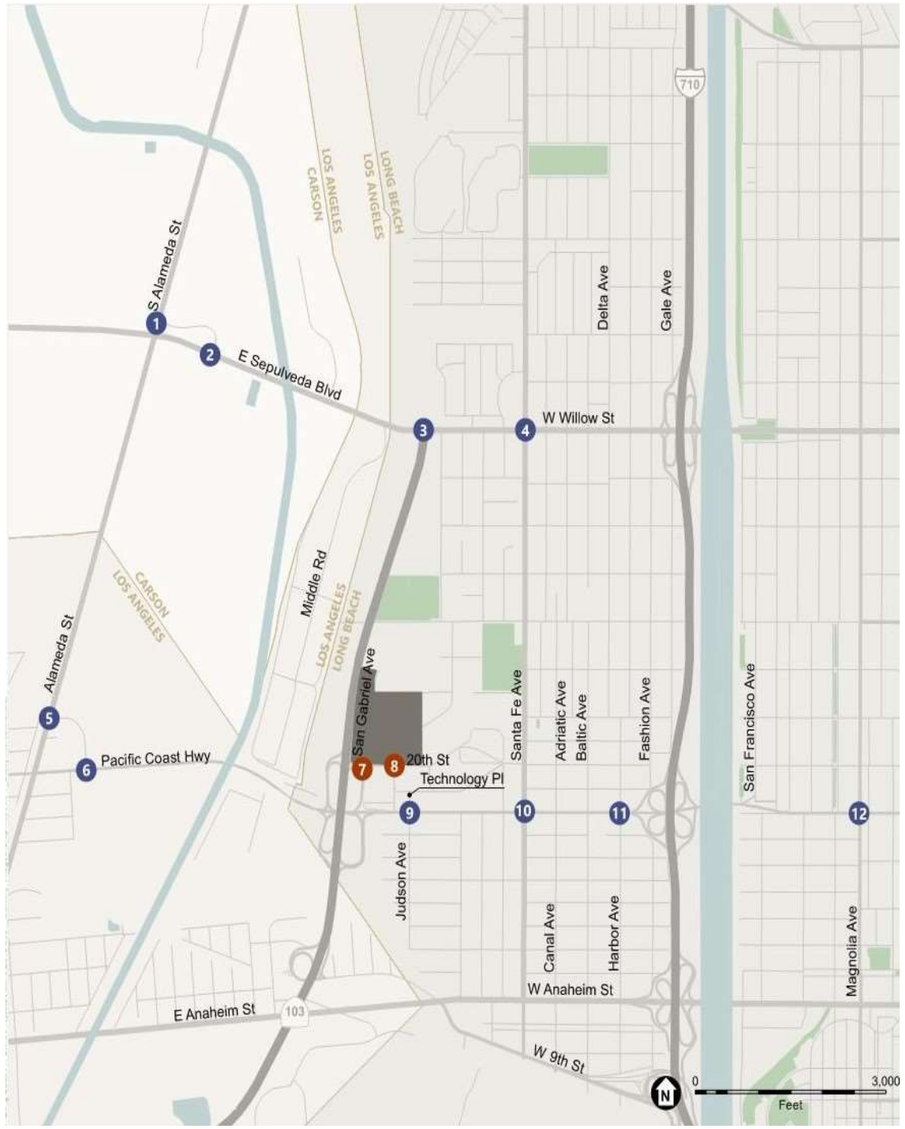
Project ID: 20-05137-010
Date: 4/21/2020

Total

NS/EW Streets:	Santa Fe Ave				Santa Fe Ave				E Pacific Coast Hwy				E Pacific Coast Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	29	70	2	0	11	31	25	0	5	106	14	0	26	21	5	0	345
7:15 AM	24	62	8	0	10	28	15	0	11	117	17	0	19	131	9	0	451
7:30 AM	16	40	7	0	13	42	10	0	11	146	13	0	16	170	10	0	494
7:45 AM	28	22	5	0	23	31	10	0	11	147	18	0	13	183	14	0	505
8:00 AM	23	17	8	0	19	23	18	0	8	121	14	0	11	137	7	0	406
8:15 AM	19	25	13	0	15	25	20	0	8	143	19	0	6	168	12	0	473
8:30 AM	34	24	8	0	17	31	9	0	8	129	6	0	6	151	18	0	441
8:45 AM	21	23	12	0	12	25	16	0	6	169	15	0	7	172	9	0	487
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	194	283	63	0	120	236	123	0	68	1078	116	0	104	1133	84	0	3602
APPROACH %'s :	35.93%	52.41%	11.67%	0.00%	25.05%	49.27%	25.68%	0.00%	5.39%	85.42%	9.19%	0.00%	7.87%	85.77%	6.36%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	86	104	33	0	70	121	58	0	38	557	64	0	46	658	43	0	1878
PEAK HR FACTOR :	0.768	0.650	0.635	0.000	0.761	0.720	0.725	0.000	0.864	0.947	0.842	0.000	0.719	0.899	0.768	0.000	0.930
	0.885				0.958				0.936				0.889				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	23	37	20	0	26	42	16	0	21	204	11	0	8	167	19	0	594
4:15 PM	32	45	18	0	22	44	18	0	17	205	11	0	11	150	17	0	590
4:30 PM	38	47	24	0	19	36	22	0	33	281	21	0	13	151	12	0	697
4:45 PM	34	42	13	0	21	40	20	0	16	253	13	0	15	150	17	0	634
5:00 PM	22	34	23	0	23	35	23	0	25	243	16	0	15	125	11	0	595
5:15 PM	18	37	10	0	21	32	10	0	26	234	17	0	7	158	11	0	581
5:30 PM	21	36	11	0	21	32	25	0	15	203	18	0	13	111	10	0	516
5:45 PM	26	43	15	0	13	27	15	0	15	155	11	0	13	129	13	0	475
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	214	321	134	0	166	288	149	0	168	1778	118	0	95	1141	110	0	4682
APPROACH %'s :	31.99%	47.98%	20.03%	0.00%	27.53%	47.76%	24.71%	0.00%	8.14%	86.14%	5.72%	0.00%	7.06%	84.77%	8.17%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	126	168	78	0	85	155	83	0	91	982	61	0	54	576	57	0	2516
PEAK HR FACTOR :	0.829	0.894	0.813	0.000	0.924	0.881	0.902	0.000	0.689	0.874	0.726	0.000	0.900	0.954	0.838	0.000	0.902
	0.853				0.961				0.846				0.944				

APPENDIX C:
PEAK HOUR TRAFFIC VOLUMES AND LANE CONFIGURATIONS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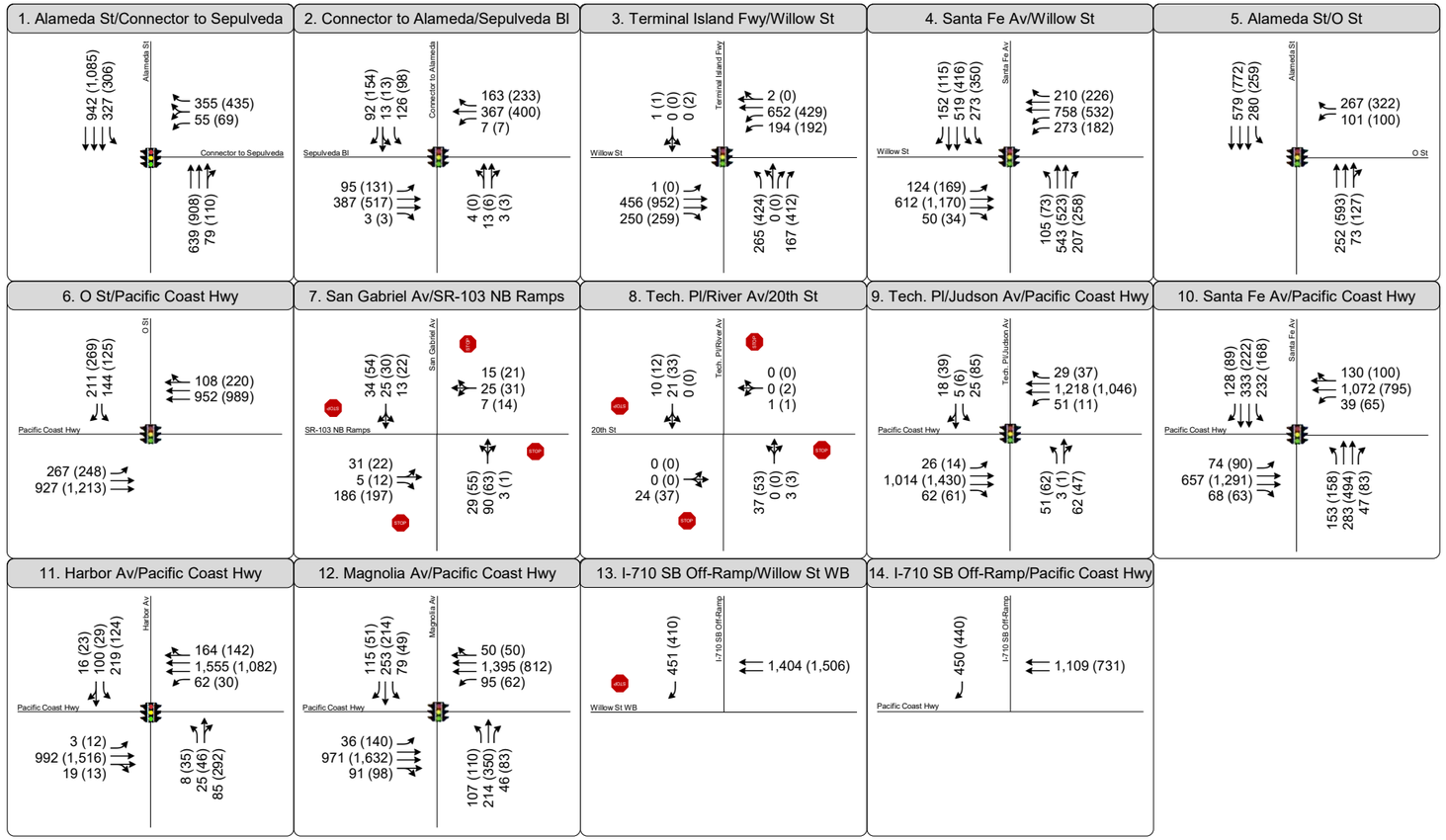
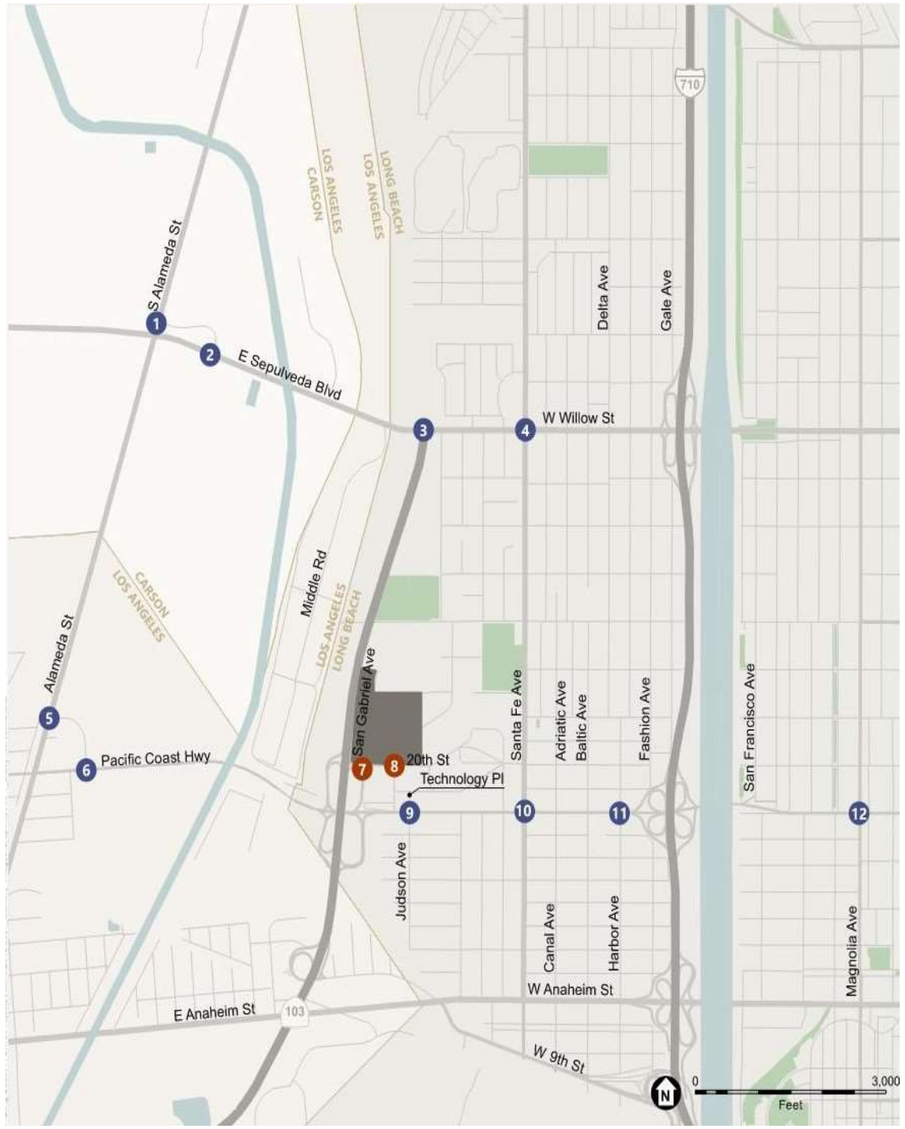
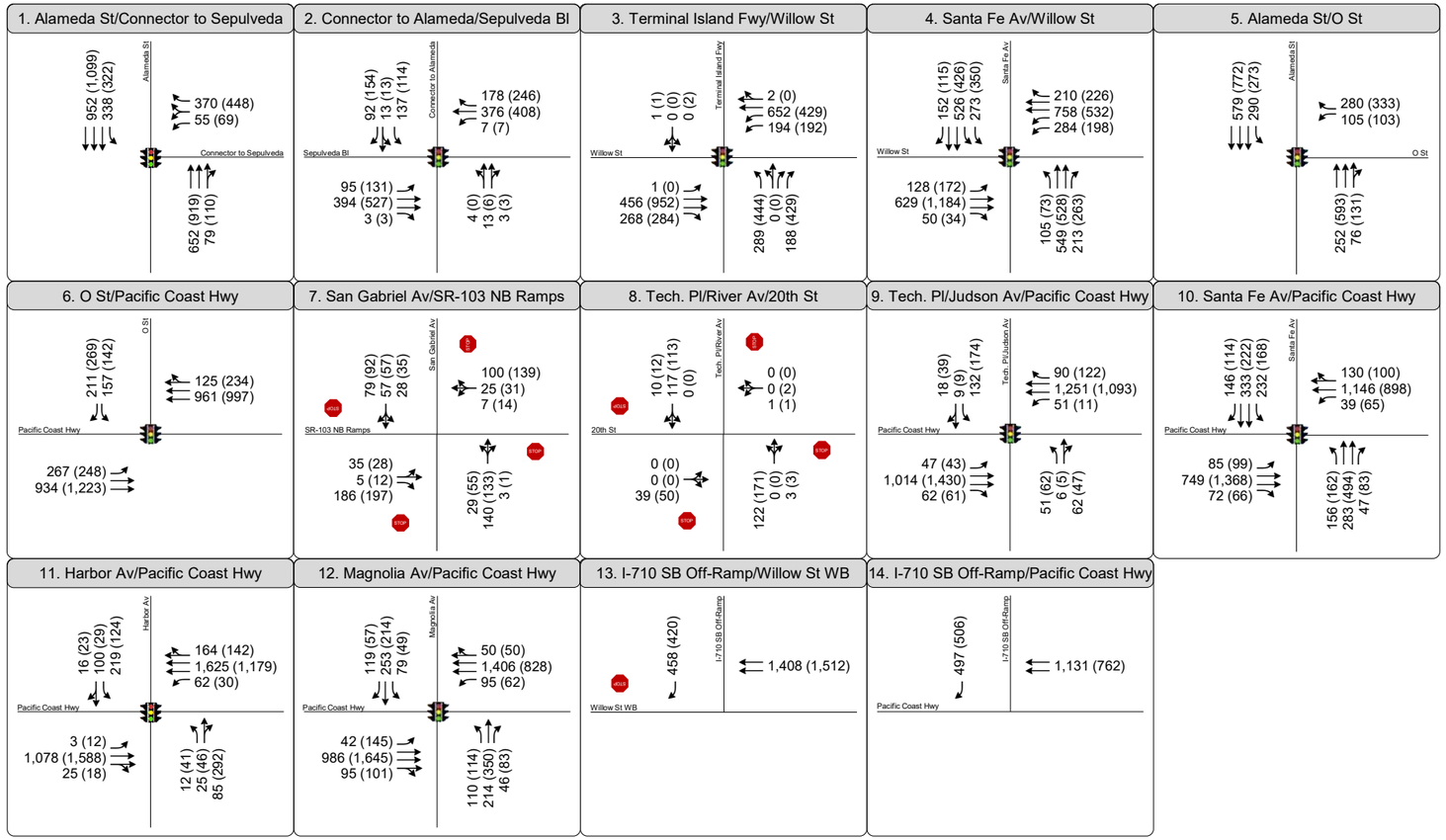
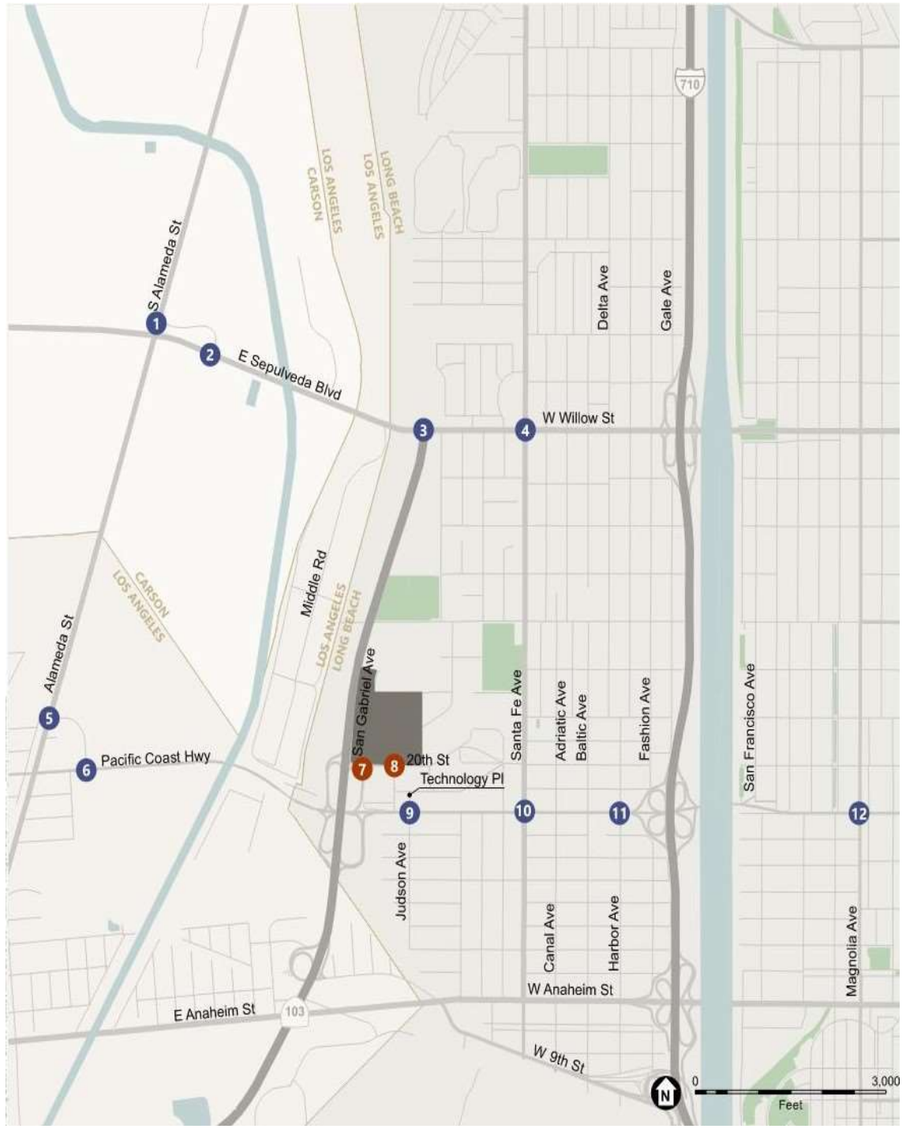
E Sepulveda Blvd
W Willow St
Middle Rd
Alameda St
Pacific Coast Hwy
San Gabriel Ave
20th St
Technology Pl
Santa Fe Ave
Adriatic Ave
Baltic Ave
Fashion Ave
Delta Ave
Gale Ave
San Francisco Ave
Judson Ave
Canal Ave
Harbor Ave
Magnolia Ave
W Anaheim St
E Anaheim St
W 9th St
CARSON
LOS ANGELES
LONG BEACH
710
103
0
3,000
Feet

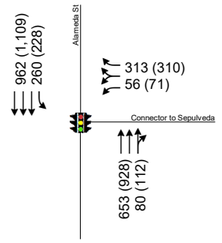

1. Alameda St/Connector to Sepulveda
942 (1,085)
327 (306)
Alameda St
355 (435)
55 (69)
Connector to Sepulveda
639 (908)
79 (110)
2. Connector to Alameda/Sepulveda Bl
92 (154)
13 (13)
126 (98)
Connector to Alameda
163 (233)
367 (400)
7 (7)
Sepulveda Bl
95 (131)
387 (517)
3 (3)
4 (0)
13 (6)
3 (3)
3. Terminal Island Fwy/Willow St
1 (1)
0 (0)
0 (2)
Terminal Island Fwy
2 (0)
652 (429)
194 (192)
Willow St
1 (0)
456 (952)
250 (259)
265 (424)
0 (0)
167 (412)
4. Santa Fe Av/Willow St
152 (115)
519 (416)
273 (350)
Santa Fe Av
210 (226)
758 (532)
273 (182)
Willow St
124 (169)
612 (1,170)
50 (34)
105 (73)
543 (523)
207 (258)
5. Alameda St/O St
579 (772)
280 (259)
Alameda St
267 (322)
101 (100)
O St
252 (593)
73 (127)
6. O St/Pacific Coast Hwy
211 (269)
144 (125)
O St
108 (220)
952 (989)
Pacific Coast Hwy
267 (248)
927 (1,213)
7. San Gabriel Av/SR-103 NB Ramps
34 (54)
25 (30)
13 (22)
San Gabriel Av
15 (21)
25 (31)
7 (14)
SR-103 NB Ramps
31 (22)
5 (12)
186 (197)
29 (55)
90 (63)
3 (1)
8. Tech. Pl/River Av/20th St
10 (12)
21 (33)
0 (0)
Tech. Pl/River Av
0 (0)
0 (2)
1 (1)
20th St
0 (0)
0 (0)
24 (37)
37 (53)
0 (0)
3 (3)
9. Tech. Pl/Judson Av/Pacific Coast Hwy
18 (39)
5 (6)
25 (85)
Tech. Pl/Judson Av
29 (37)
1,218 (1,046)
51 (11)
Pacific Coast Hwy
26 (14)
1,014 (1,430)
62 (61)
51 (62)
3 (1)
62 (47)
10. Santa Fe Av/Pacific Coast Hwy
128 (89)
333 (222)
232 (168)
Santa Fe Av
130 (100)
1,072 (795)
39 (65)
Pacific Coast Hwy
74 (90)
657 (1,291)
68 (63)
153 (158)
283 (494)
47 (83)
11. Harbor Av/Pacific Coast Hwy
16 (23)
100 (29)
219 (124)
Harbor Av
164 (142)
1,555 (1,082)
62 (30)
Pacific Coast Hwy
3 (12)
992 (1,516)
19 (13)
8 (35)
25 (46)
85 (292)
12. Magnolia Av/Pacific Coast Hwy
115 (51)
253 (214)
79 (49)
Magnolia Av
50 (50)
1,395 (812)
95 (62)
Pacific Coast Hwy
36 (140)
971 (1,632)
91 (98)
107 (110)
214 (350)
46 (83)
13. I-710 SB Off-Ramp/Willow St WB
451 (410)
I-710 SB Off-Ramp
1,404 (1,506)
Willow St WB
14. I-710 SB Off-Ramp/Pacific Coast Hwy
450 (440)
I-710 SB Off-Ramp
1,109 (731)
Pacific Coast Hwy


S Alameda St
E Sepulveda Blvd
W Willow St
Middle Rd
Alameda St
Pacific Coast Hwy
San Gabriel Ave
20th St
Technology Pl
Santa Fe Ave
Adriatic Ave
Baltic Ave
Fashion Ave
Delta Ave
Gale Ave
San Francisco Ave
Judson Ave
Canal Ave
Harbor Ave
Magnolia Ave
W Anaheim St
E Anaheim St
W 9th St
CARSON
LOS ANGELES
LONG BEACH
710
103
0
3,000
Feet

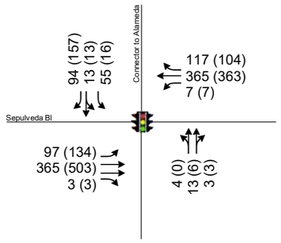

1. Alameda St/Connector to Sepulveda
952 (1,099)
338 (322)
Alameda St
370 (448)
55 (69)
Connector to Sepulveda
652 (919)
79 (110)
2. Connector to Alameda/Sepulveda Bl
92 (154)
13 (13)
137 (114)
Connector to Alameda
178 (246)
376 (408)
7 (7)
Sepulveda Bl
95 (131)
394 (527)
3 (3)
4 (0)
13 (6)
3 (3)
3. Terminal Island Fwy/Willow St
1 (1)
0 (0)
0 (2)
Terminal Island Fwy
2 (0)
652 (429)
194 (192)
Willow St
1 (0)
456 (952)
268 (284)
289 (444)
0 (0)
188 (429)
4. Santa Fe Av/Willow St
152 (115)
526 (426)
273 (350)
Santa Fe Av
210 (226)
758 (532)
284 (198)
Willow St
128 (172)
629 (1,184)
50 (34)
105 (73)
549 (528)
213 (263)
5. Alameda St/O St
579 (772)
290 (273)
Alameda St
280 (333)
105 (103)
O St
252 (593)
76 (131)
6. O St/Pacific Coast Hwy
211 (269)
157 (142)
O St
125 (234)
961 (997)
Pacific Coast Hwy
267 (248)
934 (1,223)
7. San Gabriel Av/SR-103 NB Ramps
79 (92)
57 (57)
28 (35)
San Gabriel Av
100 (139)
25 (31)
7 (14)
SR-103 NB Ramps
35 (28)
5 (12)
186 (197)
29 (55)
140 (133)
3 (1)
8. Tech. Pl/River Av/20th St
10 (12)
117 (113)
0 (0)
Tech. Pl/River Av
0 (0)
0 (2)
1 (1)
20th St
0 (0)
0 (0)
39 (50)
122 (171)
0 (0)
3 (3)
9. Tech. Pl/Judson Av/Pacific Coast Hwy
18 (39)
9 (9)
132 (174)
Tech. Pl/Judson Av
90 (122)
1,251 (1,093)
51 (11)
Pacific Coast Hwy
47 (43)
1,014 (1,430)
62 (61)
51 (62)
6 (5)
62 (47)
10. Santa Fe Av/Pacific Coast Hwy
146 (114)
333 (222)
232 (168)
Santa Fe Av
130 (100)
1,146 (898)
39 (65)
Pacific Coast Hwy
85 (99)
749 (1,368)
72 (66)
156 (162)
283 (494)
47 (83)
11. Harbor Av/Pacific Coast Hwy
16 (23)
100 (29)
219 (124)
Harbor Av
164 (142)
1,625 (1,179)
62 (30)
Pacific Coast Hwy
3 (12)
1,078 (1,588)
25 (18)
12 (41)
25 (46)
85 (292)
12. Magnolia Av/Pacific Coast Hwy
119 (57)
253 (214)
79 (49)
Magnolia Av
50 (50)
1,406 (828)
95 (62)
Pacific Coast Hwy
42 (145)
986 (1,645)
95 (101)
110 (114)
214 (350)
46 (83)
13. I-710 SB Off-Ramp/Willow St WB
458 (420)
I-710 SB Off-Ramp
1,408 (1,512)
Willow St WB
14. I-710 SB Off-Ramp/Pacific Coast Hwy
497 (506)
I-710 SB Off-Ramp
1,131 (762)
Pacific Coast Hwy



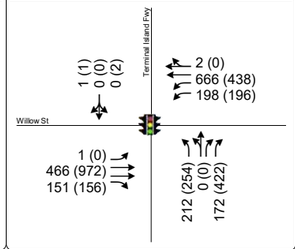
1. Alameda St/Connector to Sepulveda



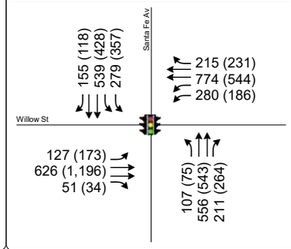
2. Connector to Alameda/Sepulveda Bl



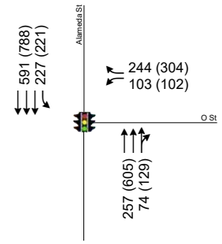
3. Terminal Island Fwy/Willow St



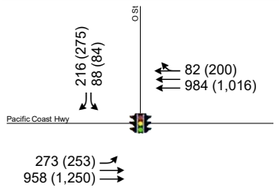
4. Santa Fe Av/Willow St



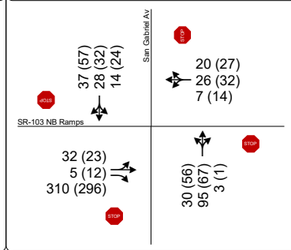
5. Alameda St/O St



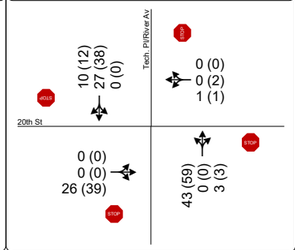
6. O St/Pacific Coast Hwy



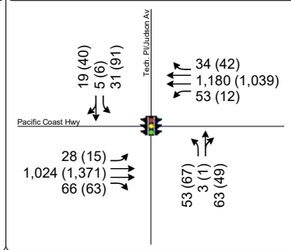
7. San Gabriel Av/SR-103 NB Ramps



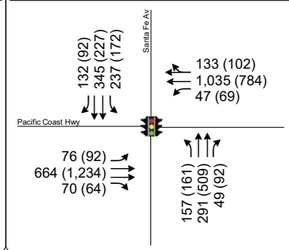
8. Tech. Pl/River Av/20th St



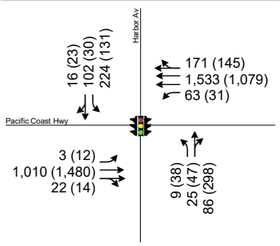
9. Tech. Pl/Judson Av/Pacific Coast Hwy



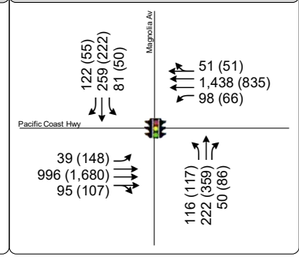
10. Santa Fe Av/Pacific Coast Hwy



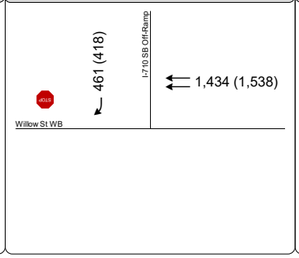
11. Harbor Av/Pacific Coast Hwy



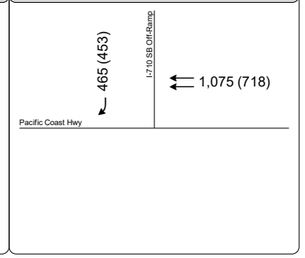
12. Magnolia Av/Pacific Coast Hwy

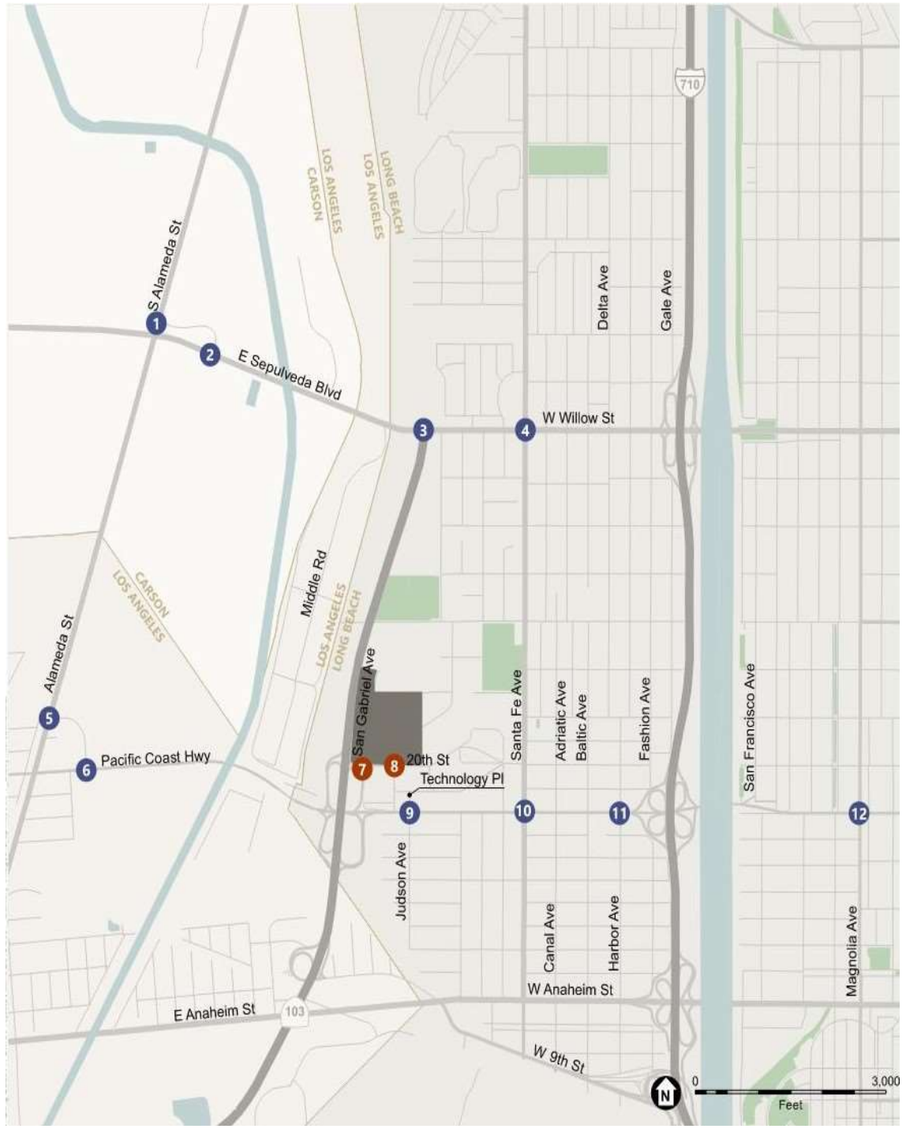


13. I-710 SB Off-Ramp/Willow St WB



14. I-710 SB Off-Ramp/Pacific Coast Hwy

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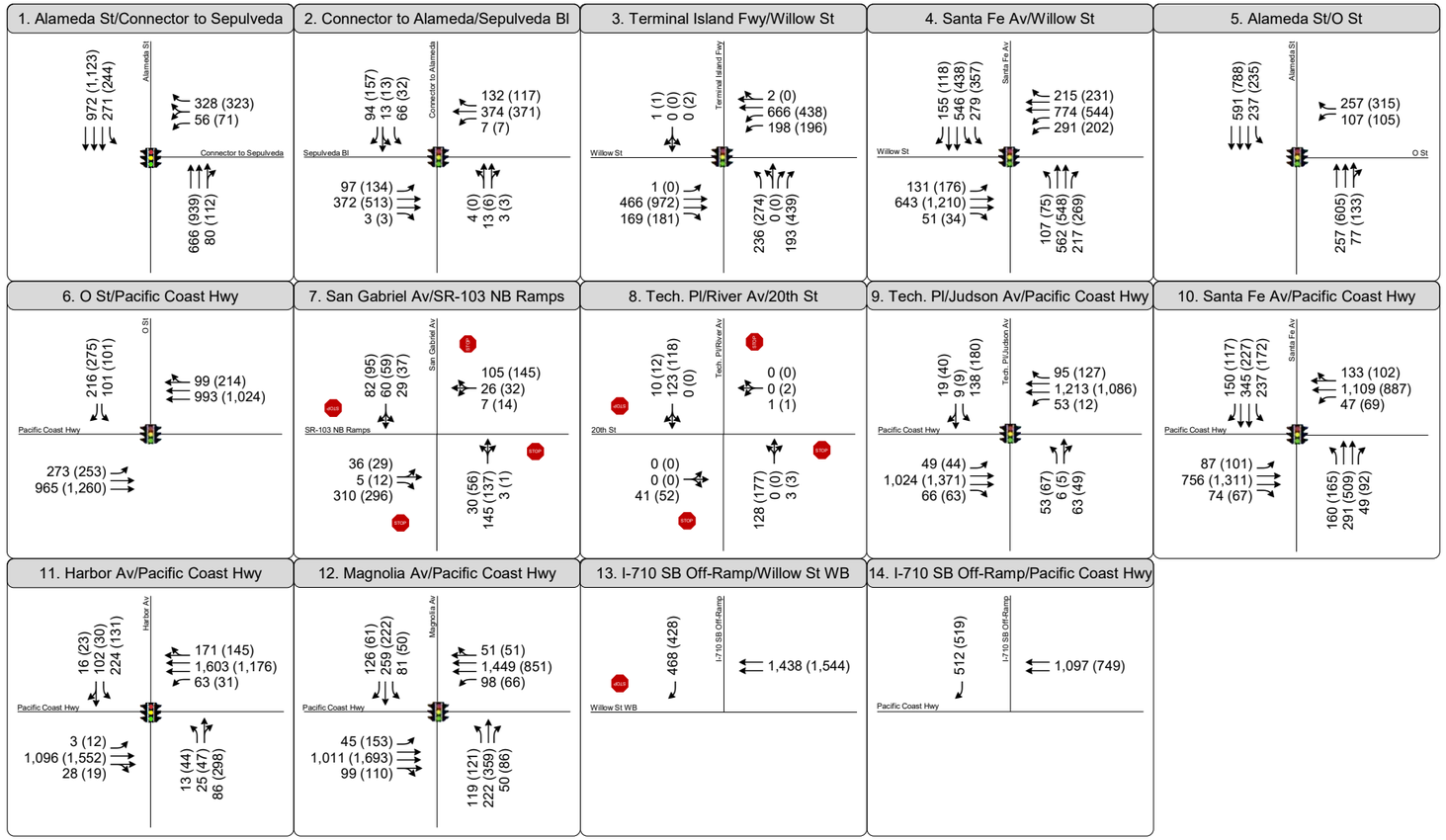
W Willow St
Middle Rd
Alameda St
Pacific Coast Hwy
San Gabriel Ave
20th St
Technology Pl
Santa Fe Ave
Adriatic Ave
Baltic Ave
Fashion Ave
Delta Ave
Gale Ave
San Francisco Ave
Judson Ave
Canal Ave
Harbor Ave
Magnolia Ave
W Anaheim St
E Anaheim St
W 9th St
CARSON
LOS ANGELES
LONG BEACH
710
103
0
3,000
Feet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972 (1,123)
271 (244)
Alameda St
328 (323)
56 (71)
Connector to Sepulveda
666 (939)
80 (112)
2. Connector to Alameda/Sepulveda Bl
94 (157)
13 (13)
66 (32)
Connector to Alameda
132 (117)
374 (371)
7 (7)
Sepulveda Bl
97 (134)
372 (513)
3 (3)
4 (0)
13 (6)
3 (3)
3. Terminal Island Fwy/Willow St
1 (1)
0 (0)
0 (2)
Terminal Island Fwy
2 (0)
666 (438)
198 (196)
Willow St
1 (0)
466 (972)
169 (181)
236 (274)
0 (0)
193 (439)
4. Santa Fe Av/Willow St
155 (118)
546 (438)
279 (357)
Santa Fe Av
215 (231)
774 (544)
291 (202)
Willow St
131 (176)
643 (1,210)
51 (34)
107 (75)
562 (548)
217 (269)
5. Alameda St/O St
591 (788)
237 (235)
Alameda St
257 (315)
107 (105)
O St
257 (605)
77 (133)
6. O St/Pacific Coast Hwy
216 (275)
101 (101)
O St
99 (214)
993 (1,024)
Pacific Coast Hwy
273 (253)
965 (1,260)
7. San Gabriel Av/SR-103 NB Ramps
82 (95)
60 (59)
29 (37)
San Gabriel Av
105 (145)
26 (32)
7 (14)
SR-103 NB Ramps
36 (29)
5 (12)
310 (296)
30 (56)
145 (137)
3 (1)
8. Tech. Pl/River Av/20th St
10 (12)
123 (118)
0 (0)
Tech. Pl/River Av
0 (0)
0 (2)
1 (1)
20th St
0 (0)
0 (0)
41 (52)
128 (177)
0 (0)
3 (3)
9. Tech. Pl/Judson Av/Pacific Coast Hwy
19 (40)
9 (9)
138 (180)
Tech. Pl/Judson Av
95 (127)
1,213 (1,086)
53 (12)
Pacific Coast Hwy
49 (44)
1,024 (1,371)
66 (63)
53 (67)
6 (5)
63 (49)
10. Santa Fe Av/Pacific Coast Hwy
150 (117)
345 (227)
237 (172)
Santa Fe Av
133 (102)
1,109 (887)
47 (69)
Pacific Coast Hwy
87 (101)
756 (1,311)
74 (67)
160 (165)
291 (509)
49 (92)
11. Harbor Av/Pacific Coast Hwy
16 (23)
102 (30)
224 (131)
Harbor Av
171 (145)
1,603 (1,176)
63 (31)
Pacific Coast Hwy
3 (12)
1,096 (1,552)
28 (19)
13 (44)
25 (47)
86 (298)
12. Magnolia Av/Pacific Coast Hwy
126 (61)
259 (222)
81 (50)
Magnolia Av
51 (51)
1,449 (851)
98 (66)
Pacific Coast Hwy
45 (153)
1,011 (1,693)
99 (110)
119 (121)
222 (359)
50 (86)
13. I-710 SB Off-Ramp/Willow St WB
468 (428)
I-710 SB Off-Ramp
1,438 (1,544)
Willow St WB
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I-710 SB Off-Ramp
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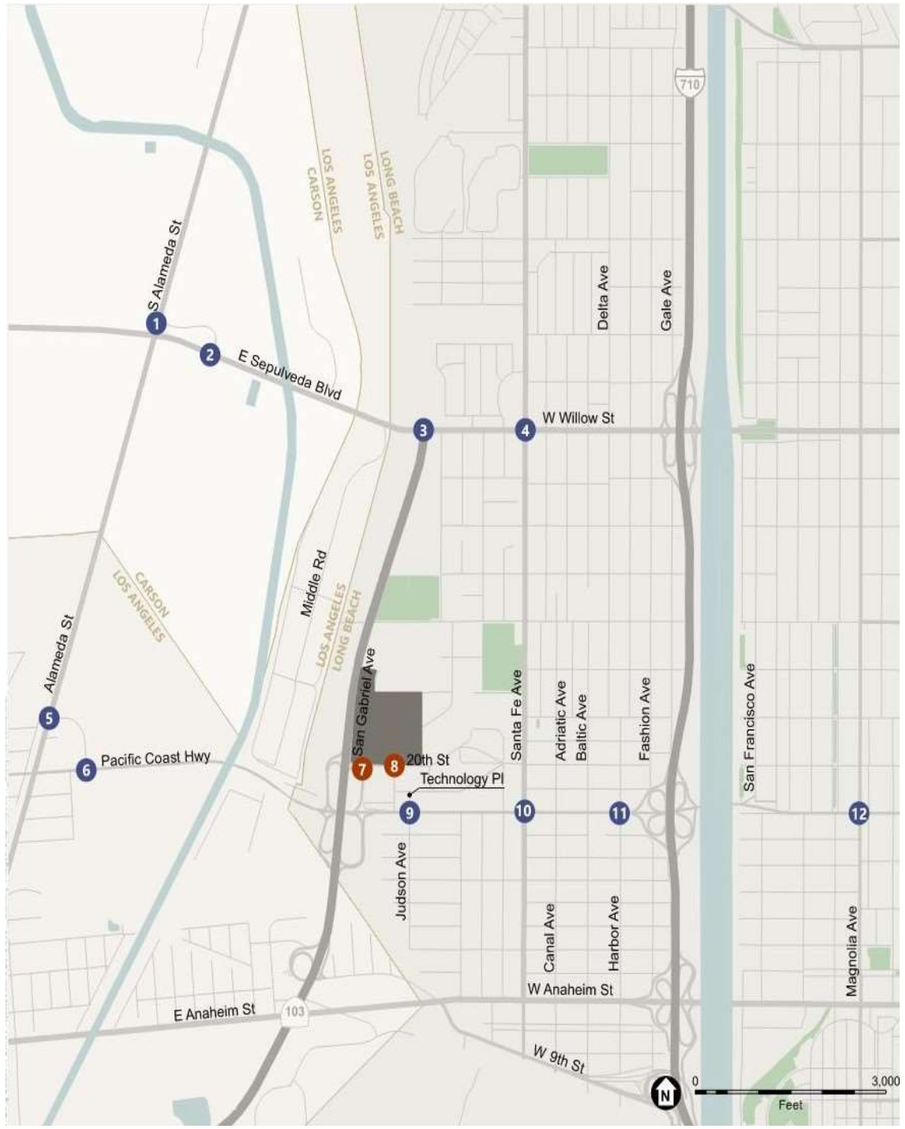
Pacific Coast Hwy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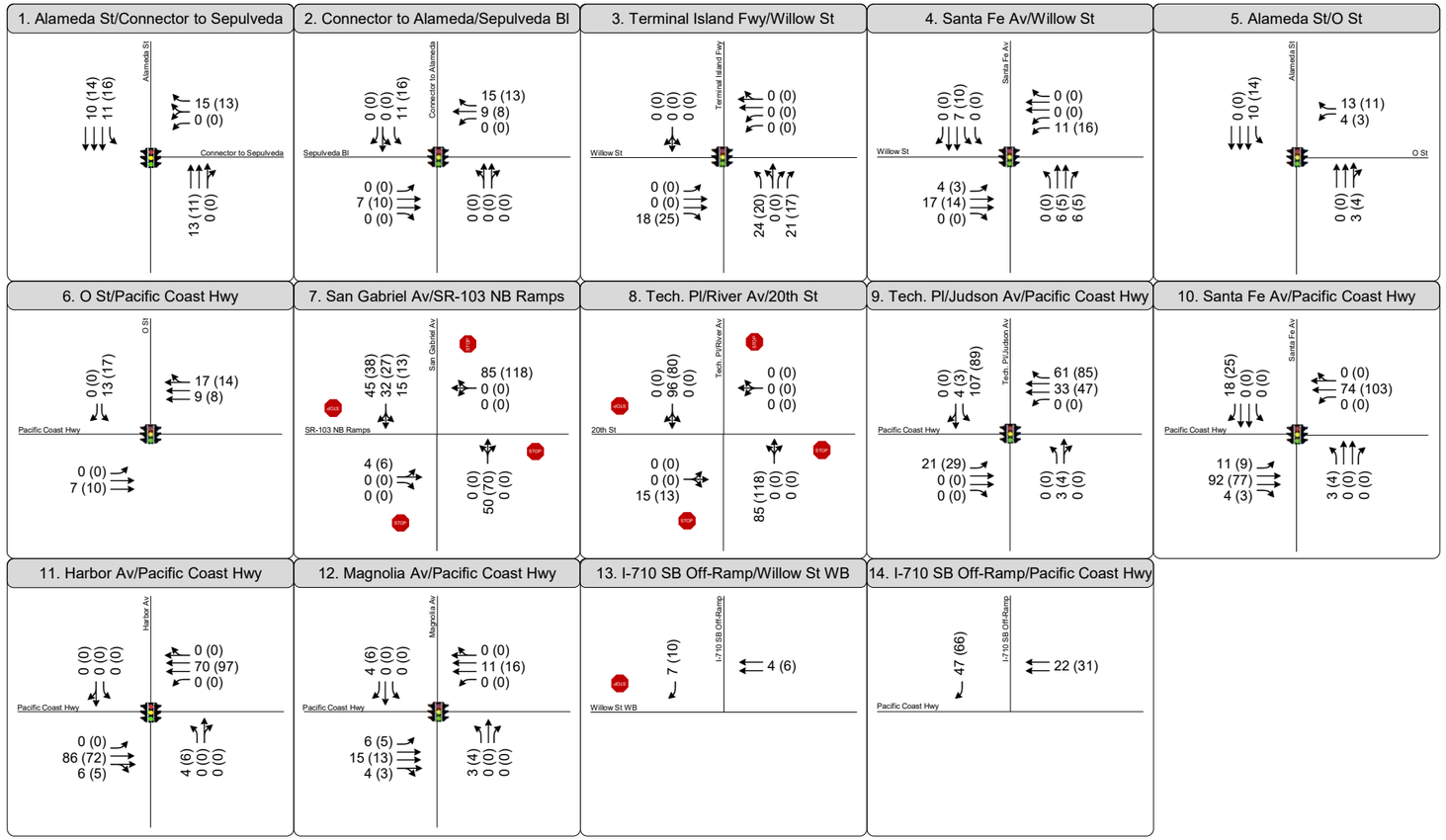
W Willow St
Middle Rd
Alameda St
Pacific Coast Hwy
San Gabriel Ave
20th St
Technology Pl
Santa Fe Ave
Adriatic Ave
Baltic Ave
Fashion Ave
Delta Ave
Gale Ave
San Francisco Ave
Judson Ave
Canal Ave
Harbor Ave
Magnolia Ave
W Anaheim St
E Anaheim St
W 9th St
LOS ANGELES
CARSON
LONG BEACH
710
103
0
3,000
Feet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Connector to Sepulveda
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0 (0)
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0 (0)
11 (16)
Connector to Alameda
15 (13)
9 (8)
0 (0)
Sepulveda Bl
0 (0)
7 (10)
0 (0)
0 (0)
0 (0)
0 (0)
3. Terminal Island Fwy/Willow St
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0 (0)
0 (0)
Terminal Island Fwy
0 (0)
0 (0)
0 (0)
Willow St
0 (0)
0 (0)
18 (25)
24 (20)
0 (0)
21 (17)
4. Santa Fe Av/Willow St
0 (0)
7 (10)
0 (0)
Santa Fe Av
0 (0)
0 (0)
11 (16)
Willow St
4 (3)
17 (14)
0 (0)
0 (0)
6 (5)
6 (5)
5. Alameda St/O St
0 (0)
10 (14)
Alameda St
13 (11)
4 (3)
O St
0 (0)
3 (4)
6. O St/Pacific Coast Hwy
O St
0 (0)
13 (17)
17 (14)
9 (8)
Pacific Coast Hwy
0 (0)
7 (10)
7. San Gabriel Av/SR-103 NB Ramps
45 (38)
32 (27)
15 (13)
San Gabriel Av
85 (118)
0 (0)
0 (0)
SR-103 NB Ramps
4 (6)
0 (0)
0 (0)
0 (0)
50 (70)
0 (0)
8. Tech. Pl/River Av/20th St
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96 (80)
0 (0)
Tech. Pl/River Av
0 (0)
0 (0)
0 (0)
20th St
0 (0)
0 (0)
15 (13)
85 (118)
0 (0)
0 (0)
9. Tech. Pl/Judson Av/Pacific Coast Hwy
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4 (3)
107 (89)
Tech. Pl/Judson Av
61 (85)
33 (47)
0 (0)
Pacific Coast Hwy
21 (29)
0 (0)
0 (0)
0 (0)
3 (4)
0 (0)
10. Santa Fe Av/Pacific Coast Hwy
18 (25)
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0 (0)
Santa Fe Av
0 (0)
74 (103)
0 (0)
Pacific Coast Hwy
11 (9)
92 (77)
4 (3)
3 (4)
0 (0)
0 (0)
11. Harbor Av/Pacific Coast Hwy
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0 (0)
0 (0)
Harbor Av
0 (0)
70 (97)
0 (0)
Pacific Coast Hwy
0 (0)
86 (72)
6 (5)
4 (6)
0 (0)
0 (0)
12. Magnolia Av/Pacific Coast Hwy
4 (6)
0 (0)
0 (0)
Magnolia Av
0 (0)
11 (16)
0 (0)
Pacific Coast Hwy
6 (5)
15 (13)
4 (3)
3 (4)
0 (0)
0 (0)
13. I-710 SB Off-Ramp/Willow St WB
7 (10)
I-710 SB Off-Ramp
4 (6)
Willow St WB
14. I-710 SB Off-Ramp/Pacific Coast Hwy
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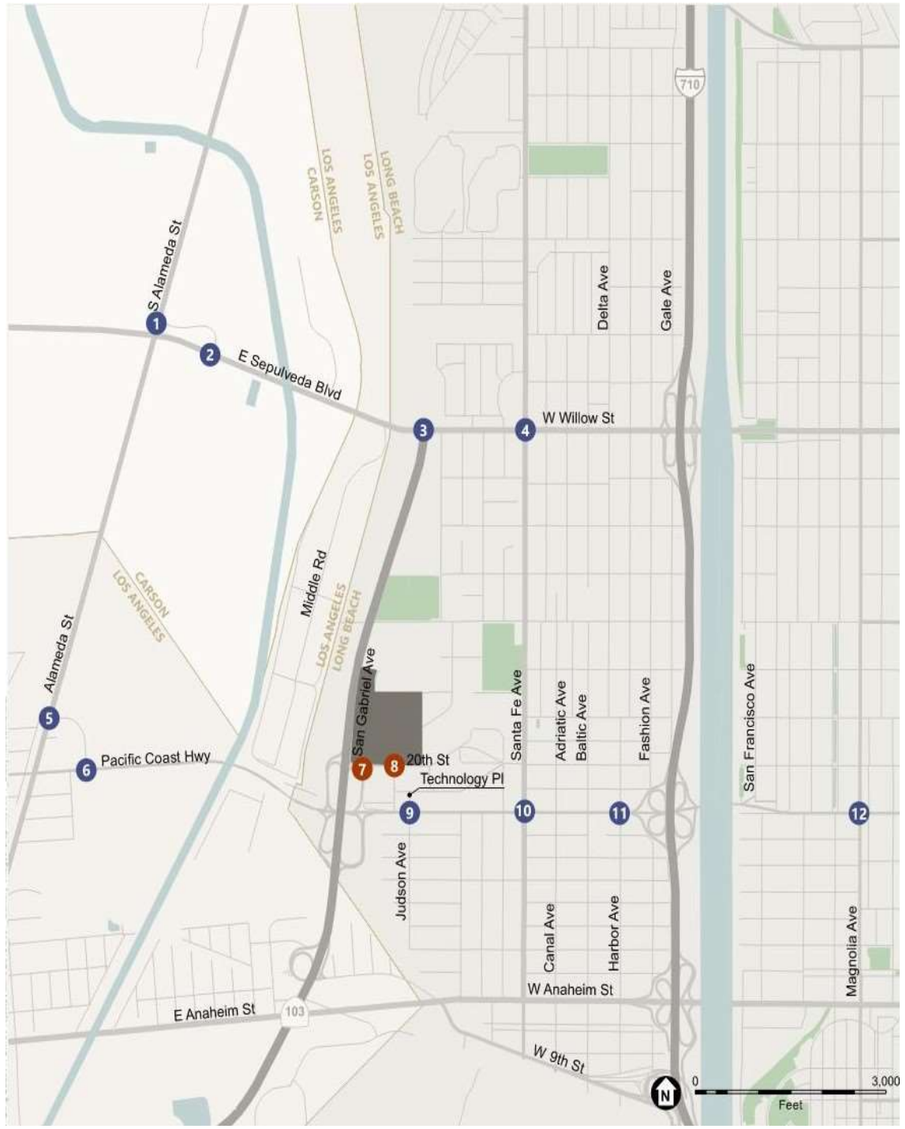
I-710 SB Off-Ramp
22 (31)
Pacific Coast Hwy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W Willow St
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Alameda St
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20th St
Technology Pl
Santa Fe Ave
Adriatic Ave
Baltic Ave
Fashion Ave
Delta Ave
Gale Ave
San Francisco Ave
Judson Ave
Canal Ave
Harbor Ave
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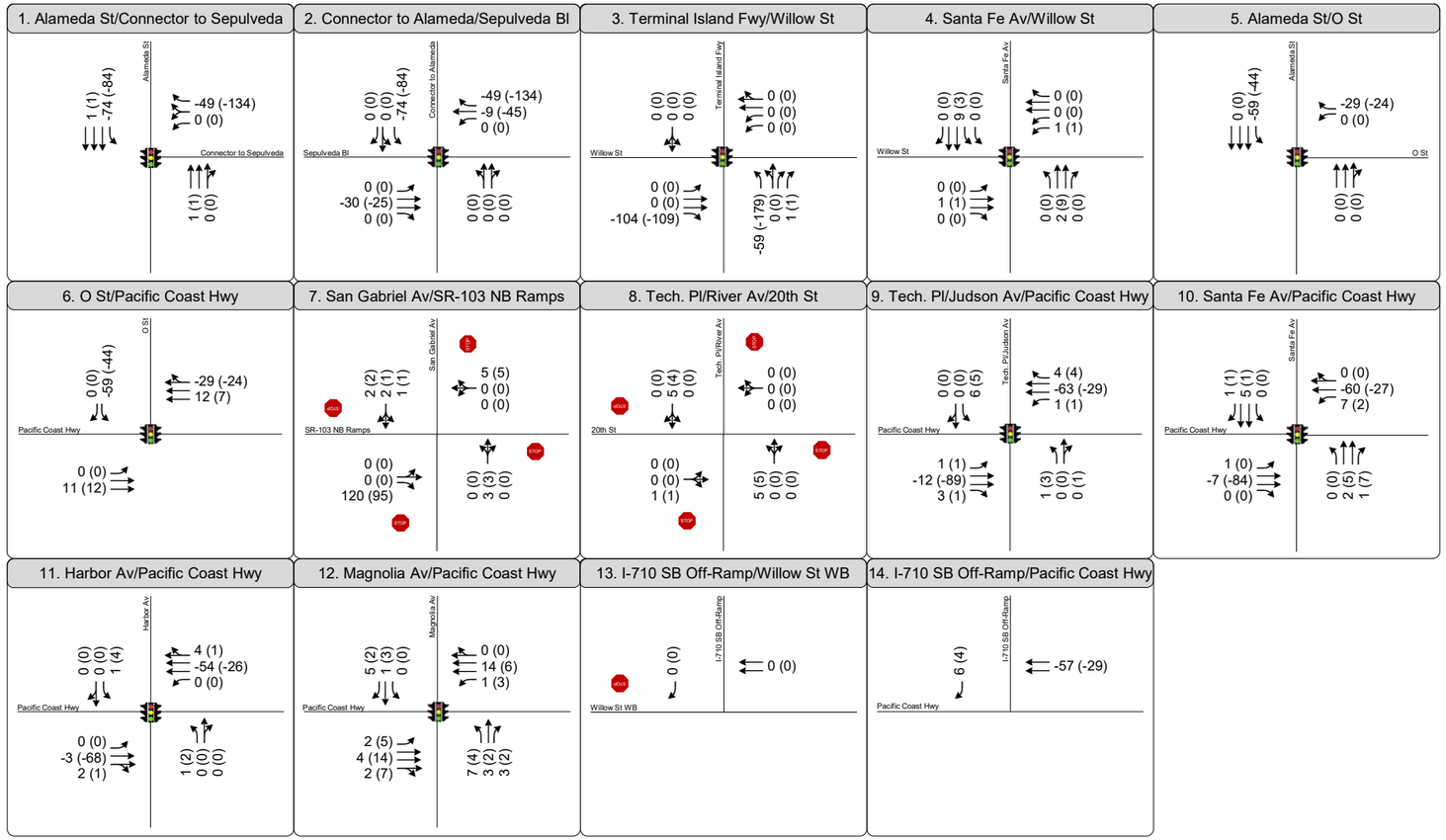
E Anaheim St
W 9th St
710
103
LOS ANGELES
CARSON
LONG BEACH
0
3,000
Feet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Alameda St
Connector to Sepulveda
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-49 (-134) 0 (0)
1 (1) 0 (0)
2. Connector to Alameda/Sepulveda Bl
Connector to Alameda
Sepulveda Bl
0 (0) 0 (0) -74 (-84)
-49 (-134) -9 (-45) 0 (0)
0 (0) -30 (-25) 0 (0)
0 (0) 0 (0) 0 (0)
3. Terminal Island Fwy/Willow St
Terminal Island Fwy
Willow St
0 (0) 0 (0) 0 (0)
0 (0) 0 (0) 0 (0)
0 (0) 0 (0) -104 (-109)
-59 (-179) 0 (0) 1 (1)
4. Santa Fe Av/Willow St
Santa Fe Av
Willow St
0 (0) 9 (3) 0 (0)
0 (0) 0 (0) 1 (1)
0 (0) 1 (1) 0 (0)
0 (0) 2 (9) 0 (0)
5. Alameda St/O St
Alameda St
O St
0 (0) -59 (-44)
-29 (-24) 0 (0)
0 (0) 0 (0)
6. O St/Pacific Coast Hwy
O St
Pacific Coast Hwy
0 (0) -59 (-44)
-29 (-24) 12 (7)
0 (0) 11 (12)
7. San Gabriel Av/SR-103 NB Ramps
San Gabriel Av
SR-103 NB Ramps
2 (2) 2 (1) 1 (1)
5 (5) 0 (0) 0 (0)
0 (0) 0 (0) 120 (95)
0 (0) 3 (3) 0 (0)
8. Tech. Pl/River Av/20th St
Tech. Pl/River Av
20th St
0 (0) 5 (4) 0 (0)
0 (0) 0 (0) 0 (0)
0 (0) 0 (0) 1 (1)
5 (5) 0 (0) 0 (0)
9. Tech. Pl/Judson Av/Pacific Coast Hwy
Tech. Pl/Judson Av
Pacific Coast Hwy
0 (0) 0 (0) 6 (5)
4 (4) -63 (-29) 1 (1)
1 (1) -12 (-89) 3 (1)
1 (3) 0 (0) 0 (1)
10. Santa Fe Av/Pacific Coast Hwy
Santa Fe Av
Pacific Coast Hwy
1 (1) 5 (1) 0 (0)
0 (0) -60 (-27) 7 (2)
1 (0) -7 (-84) 0 (0)
0 (0) 2 (5) 1 (7)
11. Harbor Av/Pacific Coast Hwy
Harbor Av
Pacific Coast Hwy
0 (0) 0 (0) 1 (4)
4 (1) -54 (-26) 0 (0)
0 (0) -3 (-68) 2 (1)
1 (2) 0 (0) 0 (0)
12. Magnolia Av/Pacific Coast Hwy
Magnolia Av
Pacific Coast Hwy
5 (2) 1 (3) 0 (0)
0 (0) 14 (6) 1 (3)
2 (5) 4 (14) 2 (7)
7 (4) 3 (2) 3 (2)
13. I-710 SB Off-Ramp/Willow St WB
I-710 SB Off-Ramp
Willow St WB
0 (0)
0 (0)
14. I-710 SB Off-Ramp/Pacific Coast Hwy
I-710 SB Off-Ramp
Pacific Coast Hwy
6 (4)
-57 (-29)

APPENDIX D:
LOS ANALYSIS SHEETS

Baseline

Project Title: Century Villages at Cabrillo SP
Intersection: 1 - Alameda St & Connector to Sepulveda
Description: Baseline (Adjusted)

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:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.354 *
	TH	3.00	942	4,800	0.196	N-S(2):	0.196
	LT	1.00	327	1,600	0.205 *	E-W(1):	0.034 *
Westbound	RT	2.00	355	3,200	0.009	E-W(2):	0.009
	TH	0.00	0	0	0.000		
	LT	1.00	55	1,600	0.034 *	V/C:	0.388
Northbound	RT	0.00	79	0	0.000	Lost Time:	0.100
	TH	3.00	639	4,800	0.149 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.488
	TH	0.00	0	0	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):	0.403 *
	TH	3.00	1,085	4,800	0.226	N-S(2):	0.226
	LT	1.00	306	1,600	0.191 *	E-W(1):	0.043 *
Westbound	RT	2.00	435	3,200	0.040	E-W(2):	0.040
	TH	0.00	0	0	0.000		
	LT	1.00	69	1,600	0.043 *	V/C:	0.446
Northbound	RT	0.00	110	0	0.000	Lost Time:	0.100
	TH	3.00	908	4,800	0.212 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.546
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	A

* - Denotes critical movement

Project Title: Century Villages at Cabrillo SP
Intersection: 2 - Connector to Alameda & Sepulveda Bl
Description: Baseline (Adjusted)

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:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	92	1,600	0.028	N-S(1):	0.054 *
	TH	0.19	13	303	0.044	N-S(2):	0.047
	LT	1.81	126	2,607	0.048 *	E-W(1):	0.126
Westbound	RT	1.00	163	1,600	0.078	E-W(2):	0.289 *
	TH	1.00	367	1,600	0.229 *		
	LT	1.00	7	1,600	0.005	V/C:	0.343
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	2.00	13	1,600	0.006 *	ITS:	0.000
	LT	0.00	4	1,600	0.003		
Eastbound	RT	1.00	3	1,600	0.000	ICU:	0.443
	TH	2.00	387	3,200	0.121		
	LT	1.00	95	1,600	0.060 *	LOS:	A

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	154	1,600	0.055 *	N-S(1):	0.041
	TH	0.23	13	374	0.035	N-S(2):	0.055 *
	LT	1.77	98	2,543	0.038	E-W(1):	0.165
Westbound	RT	1.00	233	1,600	0.126	E-W(2):	0.332 *
	TH	1.00	400	1,600	0.250 *		
	LT	1.00	7	1,600	0.004	V/C:	0.387
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	2.00	6	3,200	0.003	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	1.00	3	1,600	0.002	ICU:	0.487
	TH	2.00	517	3,200	0.161		
	LT	1.00	131	1,600	0.082 *	LOS:	A

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **3 - Terminal Island Fwy & Willow St**
Description: **Baseline (Adjusted)**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000	N-S(1):	0.019
	TH	1.00	0	1,600	0.001 *	N-S(2):	0.093 *
	LT	0.00	0	0	0.000	E-W(1):	0.209 *
Westbound	RT	0.00	2	0	0.000	E-W(2):	0.205
	TH	2.00	652	3,200	0.204		
	LT	2.00	194	2,880	0.067 *	V/C:	0.302
Northbound	RT	2.00	167	3,200	0.019	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	2.00	265	2,880	0.092 *		
Eastbound	RT	1.00	250	1,600	0.110	ICU:	0.402
	TH	2.00	456	3,200	0.142 *		
	LT	1.00	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	1	0	0.000	N-S(1):	0.096
	TH	1.00	0	1,600	0.002 *	N-S(2):	0.149 *
	LT	0.00	2	1,600	0.001	E-W(1):	0.364 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.134
	TH	2.00	429	3,200	0.134		
	LT	2.00	192	2,880	0.067 *	V/C:	0.513
Northbound	RT	2.00	412	3,200	0.095	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	2.00	424	2,880	0.147 *		
Eastbound	RT	1.00	259	1,600	0.162	ICU:	0.613
	TH	2.00	952	3,200	0.297 *		
	LT	1.00	0	1,600	0.000	LOS:	B

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **4 - Santa Fe Av & Willow St**
Description: **Baseline (Adjusted)**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	152	1,600	0.056	N-S(1):	0.265 *
	TH	2.00	519	3,200	0.162	N-S(2):	0.228
	LT	2.00	273	2,880	0.095 *	E-W(1):	0.286
Westbound	RT	1.00	210	1,600	0.084	E-W(2):	0.315 *
	TH	2.00	758	3,200	0.237 *		
	LT	2.00	273	2,880	0.095	V/C:	0.580
Northbound	RT	1.00	207	1,600	0.082	Lost Time:	0.100
	TH	2.00	543	3,200	0.170 *	ITS:	0.000
	LT	1.00	105	1,600	0.066		
Eastbound	RT	1.00	50	1,600	0.000	ICU:	0.680
	TH	2.00	612	3,200	0.191		
	LT	1.00	124	1,600	0.078 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	115	1,600	0.019	N-S(1):	0.285 *
	TH	2.00	416	3,200	0.130	N-S(2):	0.176
	LT	2.00	350	2,880	0.121 *	E-W(1):	0.429 *
Westbound	RT	1.00	226	1,600	0.081	E-W(2):	0.272
	TH	2.00	532	3,200	0.166		
	LT	2.00	182	2,880	0.063 *	V/C:	0.714
Northbound	RT	1.00	258	1,600	0.130	Lost Time:	0.100
	TH	2.00	523	3,200	0.164 *	ITS:	0.000
	LT	1.00	73	1,600	0.046		
Eastbound	RT	1.00	34	1,600	0.000	ICU:	0.814
	TH	2.00	1,170	3,200	0.366 *		
	LT	1.00	169	1,600	0.106	LOS:	D

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **5 - Alameda St & O St**
Description: **Baseline (Adjusted)**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.243 *
	TH	3.00	579	4,800	0.121	N-S(2):	0.121
	LT	1.00	280	1,600	0.175 *	E-W(1):	0.063
Westbound	RT	1.00	267	1,600	0.079 *	E-W(2):	0.079 *
	TH	0.00	0	0	0.000		
	LT	1.00	101	1,600	0.063	V/C:	0.322
Northbound	RT	0.00	73	0	0.000	Lost Time:	0.100
	TH	3.00	252	4,800	0.068 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.422
	TH	0.00	0	0	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):	0.312 *
	TH	3.00	772	4,800	0.161	N-S(2):	0.161
	LT	1.00	259	1,600	0.162 *	E-W(1):	0.062
Westbound	RT	1.00	322	1,600	0.120 *	E-W(2):	0.120 *
	TH	0.00	0	0	0.000		
	LT	1.00	100	1,600	0.062	V/C:	0.432
Northbound	RT	0.00	127	0	0.000	Lost Time:	0.100
	TH	3.00	593	4,800	0.150 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.532
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: Century Villages at Cabrillo SP
Intersection: 6 - O St & Pacific Coast Hwy
Description: Baseline (Adjusted)

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:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	211	1,600	0.049	N-S(1):	0.090 *
	TH	0.00	0	0	0.000	N-S(2):	0.049
	LT	1.00	144	1,600	0.090 *	E-W(1):	0.290
Westbound	RT	0.00	108	0	0.000	E-W(2):	0.388 *
	TH	3.00	952	4,800	0.221 *		
	LT	0.00	0	0	0.000	V/C:	0.478
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.578
	TH	2.00	927	3,200	0.290		
	LT	1.00	267	1,600	0.167 *	LOS:	A

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	269	1,600	0.091 *	N-S(1):	0.078
	TH	0.00	0	0	0.000	N-S(2):	0.091 *
	LT	1.00	125	1,600	0.078	E-W(1):	0.379
Westbound	RT	0.00	220	0	0.000	E-W(2):	0.407 *
	TH	3.00	989	4,800	0.252 *		
	LT	0.00	0	0	0.000	V/C:	0.498
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.598
	TH	2.00	1,213	3,200	0.379		
	LT	1.00	248	1,600	0.155 *	LOS:	A

* - Denotes critical movement

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	5	185	7	25	15	29	89	3	13	25	34
Future Vol, veh/h	31	5	185	7	25	15	29	89	3	13	25	34
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	33	5	195	7	26	16	31	94	3	14	26	36
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9	8.2	9.1	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	14%	15%	18%
Vol Thru, %	74%	2%	53%	35%
Vol Right, %	2%	84%	32%	47%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	121	221	47	72
LT Vol	29	31	7	13
Through Vol	89	5	25	25
RT Vol	3	185	15	34
Lane Flow Rate	127	233	49	76
Geometry Grp	1	1	1	1
Degree of Util (X)	0.176	0.278	0.066	0.1
Departure Headway (Hd)	4.97	4.3	4.81	4.76
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	721	835	744	752
Service Time	3.003	2.324	2.844	2.797
HCM Lane V/C Ratio	0.176	0.279	0.066	0.101
HCM Control Delay	9.1	9	8.2	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	1.1	0.2	0.3

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	24	1	0	0	37	0	3	0	21	10
Future Vol, veh/h	0	0	24	1	0	0	37	0	3	0	21	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	25	1	0	0	39	0	3	0	22	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.9	7.6	7.7	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	93%	0%	100%	0%
Vol Thru, %	0%	0%	0%	68%
Vol Right, %	7%	100%	0%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	24	1	31
LT Vol	37	0	1	0
Through Vol	0	0	0	21
RT Vol	3	24	0	10
Lane Flow Rate	42	25	1	33
Geometry Grp	1	1	1	1
Degree of Util (X)	0.052	0.026	0.001	0.037
Departure Headway (Hd)	4.416	3.735	4.554	4.089
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	813	953	782	876
Service Time	2.43	1.78	2.603	2.109
HCM Lane V/C Ratio	0.052	0.026	0.001	0.038
HCM Control Delay	7.7	6.9	7.6	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0	0.1

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	12	196	14	31	21	54	62	1	22	30	53
Future Vol, veh/h	22	12	196	14	31	21	54	62	1	22	30	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	23	13	206	15	33	22	57	65	1	23	32	56
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	8.5	9.3	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	46%	10%	21%	21%
Vol Thru, %	53%	5%	47%	29%
Vol Right, %	1%	85%	32%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	117	230	66	105
LT Vol	54	22	14	22
Through Vol	62	12	31	30
RT Vol	1	196	21	53
Lane Flow Rate	123	242	69	111
Geometry Grp	1	1	1	1
Degree of Util (X)	0.176	0.295	0.095	0.148
Departure Headway (Hd)	5.148	4.391	4.925	4.824
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	695	818	725	741
Service Time	3.194	2.425	2.971	2.872
HCM Lane V/C Ratio	0.177	0.296	0.095	0.15
HCM Control Delay	9.3	9.3	8.5	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	1.2	0.3	0.5

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	37	1	2	0	52	0	3	0	33	12
Future Vol, veh/h	0	0	37	1	2	0	52	0	3	0	33	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	39	1	2	0	55	0	3	0	35	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7	7.6	7.8	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	95%	0%	33%	0%
Vol Thru, %	0%	0%	67%	73%
Vol Right, %	5%	100%	0%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	37	3	45
LT Vol	52	0	1	0
Through Vol	0	0	2	33
RT Vol	3	37	0	12
Lane Flow Rate	58	39	3	47
Geometry Grp	1	1	1	1
Degree of Util (X)	0.072	0.041	0.004	0.055
Departure Headway (Hd)	4.473	3.789	4.485	4.164
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	801	934	790	859
Service Time	2.498	1.855	2.556	2.196
HCM Lane V/C Ratio	0.072	0.042	0.004	0.055
HCM Control Delay	7.8	7	7.6	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0	0.2

Project Title: **Century Villages at Cabrillo SP**
Intersection: **9 - Tech. Pl/Judson Av & Pacific Coast Hwy**
Description: **Baseline (Adjusted)**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.80	18	1,280	0.006	N-S(1):	0.055 *
	TH	0.20	5	320	0.014	N-S(2):	0.046
	LT	1.00	25	1,600	0.015 *	E-W(1):	0.349
Westbound	RT	1.00	29	1,600	0.011	E-W(2):	0.397 *
	TH	2.00	1,218	3,200	0.381 *		
	LT	1.00	51	1,600	0.032	V/C:	0.452
Northbound	RT	0.95	62	1,524	0.025	Lost Time:	0.100
	TH	0.05	3	76	0.040 *	ITS:	0.000
	LT	1.00	51	1,600	0.032		
Eastbound	RT	1.00	62	1,600	0.023	ICU:	0.552
	TH	2.00	1,014	3,200	0.317		
	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	0.88	39	1,400	0.023	N-S(1):	0.083 *
	TH	0.13	6	200	0.028	N-S(2):	0.067
	LT	1.00	85	1,600	0.053 *	E-W(1):	0.454 *
Westbound	RT	1.00	37	1,600	0.000	E-W(2):	0.336
	TH	2.00	1,046	3,200	0.327		
	LT	1.00	11	1,600	0.007 *	V/C:	0.537
Northbound	RT	0.97	47	1,554	0.027	Lost Time:	0.100
	TH	0.03	1	46	0.030 *	ITS:	0.000
	LT	1.00	62	1,600	0.039		
Eastbound	RT	1.00	61	1,600	0.019	ICU:	0.637
	TH	2.00	1,430	3,200	0.447 *		
	LT	1.00	14	1,600	0.009	LOS:	B

* - Denotes critical movement

Project Title: Century Villages at Cabrillo SP
Intersection: 10 - Santa Fe Av & Pacific Coast Hwy
Description: Baseline (Adjusted)

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:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	128	1,600	0.080	N-S(1):	0.233 *
	TH	2.00	333	3,200	0.104	N-S(2):	0.200
	LT	1.00	232	1,600	0.145 *	E-W(1):	0.229
Westbound	RT	0.00	130	0	0.000	E-W(2):	0.422 *
	TH	2.00	1,072	3,200	0.376 *		
	LT	1.00	39	1,600	0.024	V/C:	0.655
Northbound	RT	1.00	47	1,600	0.017	Lost Time:	0.100
	TH	2.00	283	3,200	0.088 *	ITS:	0.000
	LT	1.00	153	1,600	0.096		
Eastbound	RT	1.00	68	1,600	0.000	ICU:	0.755
	TH	2.00	657	3,200	0.205		
	LT	1.00	74	1,600	0.046 *	LOS:	C

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	89	1,600	0.028	N-S(1):	0.259 *
	TH	2.00	222	3,200	0.069	N-S(2):	0.168
	LT	1.00	168	1,600	0.105 *	E-W(1):	0.444 *
Westbound	RT	0.00	100	0	0.000	E-W(2):	0.336
	TH	2.00	795	3,200	0.280		
	LT	1.00	65	1,600	0.041 *	V/C:	0.703
Northbound	RT	1.00	83	1,600	0.032	Lost Time:	0.100
	TH	2.00	494	3,200	0.154 *	ITS:	0.000
	LT	1.00	158	1,600	0.099		
Eastbound	RT	1.00	63	1,600	0.000	ICU:	0.803
	TH	2.00	1,291	3,200	0.403 *		
	LT	1.00	90	1,600	0.056	LOS:	D

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **11 - Harbor Av & Pacific Coast Hwy**
Description: **Baseline (Adjusted)**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.20	16	320	0.049	N-S(1):	0.205 *
	TH	0.80	100	1,280	0.078	N-S(2):	0.083
	LT	1.00	219	1,600	0.137 *	E-W(1):	0.355
Westbound	RT	0.00	164	0	0.000	E-W(2):	0.360 *
	TH	3.00	1,555	4,800	0.358 *		
	LT	1.00	62	1,600	0.039	V/C:	0.565
Northbound	RT	0.77	85	1,239	0.049	Lost Time:	0.100
	TH	0.23	25	361	0.068 *	ITS:	0.000
	LT	1.00	8	1,600	0.005		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.665
	TH	2.00	992	3,200	0.316		
	LT	1.00	3	1,600	0.002 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.44	23	700	0.028	N-S(1):	0.289 *
	TH	0.56	29	900	0.032	N-S(2):	0.054
	LT	1.00	124	1,600	0.078 *	E-W(1):	0.497 *
Westbound	RT	0.00	142	0	0.000	E-W(2):	0.262
	TH	3.00	1,082	4,800	0.255		
	LT	1.00	30	1,600	0.019 *	V/C:	0.786
Northbound	RT	0.86	292	1,382	0.202	Lost Time:	0.100
	TH	0.14	46	218	0.211 *	ITS:	0.000
	LT	1.00	35	1,600	0.022		
Eastbound	RT	0.00	13	0	0.000	ICU:	0.886
	TH	2.00	1,516	3,200	0.478 *		
	LT	1.00	12	1,600	0.007	LOS:	D

* - Denotes critical movement

Project Title: Century Villages at Cabrillo SP
Intersection: 12 - Magnolia Av & Pacific Coast Hwy
Description: Baseline (Adjusted)

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:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	115	1,600	0.060	N-S(1):	0.184
	TH	1.00	253	1,600	0.158 *	N-S(2):	0.225 *
	LT	1.00	79	1,600	0.050	E-W(1):	0.281
Westbound	RT	0.00	50	0	0.000	E-W(2):	0.324 *
	TH	3.00	1,395	4,800	0.301 *		
	LT	1.00	95	1,600	0.060	V/C:	0.549
Northbound	RT	1.00	46	1,600	0.000	Lost Time:	0.100
	TH	1.00	214	1,600	0.134	ITS:	0.000
	LT	1.00	107	1,600	0.067 *		
Eastbound	RT	0.00	91	0	0.000	ICU:	0.649
	TH	3.00	971	4,800	0.221		
	LT	1.00	36	1,600	0.023 *	LOS:	B

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	51	1,600	0.000	N-S(1):	0.249 *
	TH	1.00	214	1,600	0.134	N-S(2):	0.203
	LT	1.00	49	1,600	0.031 *	E-W(1):	0.399 *
Westbound	RT	0.00	50	0	0.000	E-W(2):	0.268
	TH	3.00	812	4,800	0.180		
	LT	1.00	62	1,600	0.039 *	V/C:	0.648
Northbound	RT	1.00	83	1,600	0.032	Lost Time:	0.100
	TH	1.00	350	1,600	0.218 *	ITS:	0.000
	LT	1.00	110	1,600	0.069		
Eastbound	RT	0.00	98	0	0.000	ICU:	0.748
	TH	3.00	1,632	4,800	0.360 *		
	LT	1.00	140	1,600	0.088	LOS:	C

* - Denotes critical movement

Baseline + Project

Project Title: **Century Villages at Cabrillo SP**
Intersection: **1 - Alameda St & Connector to Sepulveda**
Description: **Baseline + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.364 *
	TH	3.00	952	4,800	0.198	N-S(2):	0.198
	LT	1.00	338	1,600	0.212 *	E-W(1):	0.034 *
Westbound	RT	2.00	370	3,200	0.010	E-W(2):	0.010
	TH	0.00	0	0	0.000		
	LT	1.00	55	1,600	0.034 *	V/C:	0.398
Northbound	RT	0.00	79	0	0.000	Lost Time:	0.100
	TH	3.00	652	4,800	0.152 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.498
	TH	0.00	0	0	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):	0.415 *
	TH	3.00	1,099	4,800	0.229	N-S(2):	0.229
	LT	1.00	322	1,600	0.201 *	E-W(1):	0.043 *
Westbound	RT	2.00	448	3,200	0.039	E-W(2):	0.039
	TH	0.00	0	0	0.000		
	LT	1.00	69	1,600	0.043 *	V/C:	0.458
Northbound	RT	0.00	110	0	0.000	Lost Time:	0.100
	TH	3.00	919	4,800	0.214 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.558
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	A

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **2 - Connector to Alameda & Sepulveda Bl**
Description: **Baseline + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	92	1,600	0.028	N-S(1):	0.058 *
	TH	0.18	13	281	0.047	N-S(2):	0.050
	LT	1.82	137	2,627	0.052 *	E-W(1):	0.128
Westbound	RT	1.00	178	1,600	0.085	E-W(2):	0.295 *
	TH	1.00	376	1,600	0.235 *		
	LT	1.00	7	1,600	0.005	V/C:	0.353
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	2.00	13	1,600	0.006 *	ITS:	0.000
	LT	0.00	4	1,600	0.003		
Eastbound	RT	1.00	3	1,600	0.000	ICU:	0.453
	TH	2.00	394	3,200	0.123		
	LT	1.00	95	1,600	0.060 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	154	1,600	0.055 *	N-S(1):	0.047
	TH	0.20	13	327	0.040	N-S(2):	0.055 *
	LT	1.80	114	2,586	0.044	E-W(1):	0.169
Westbound	RT	1.00	246	1,600	0.132	E-W(2):	0.337 *
	TH	1.00	408	1,600	0.255 *		
	LT	1.00	7	1,600	0.004	V/C:	0.392
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	2.00	6	3,200	0.003	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	1.00	3	1,600	0.002	ICU:	0.492
	TH	2.00	527	3,200	0.165		
	LT	1.00	131	1,600	0.082 *	LOS:	A

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **3 - Terminal Island Fwy & Willow St**
Description: **Baseline + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000	N-S(1):	0.025
	TH	1.00	0	1,600	0.001 *	N-S(2):	0.101 *
	LT	0.00	0	0	0.000	E-W(1):	0.209 *
Westbound	RT	0.00	2	0	0.000	E-W(2):	0.205
	TH	2.00	652	3,200	0.204		
	LT	2.00	194	2,880	0.067 *	V/C:	0.310
Northbound	RT	2.00	188	3,200	0.025	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	2.00	289	2,880	0.100 *		
Eastbound	RT	1.00	268	1,600	0.117	ICU:	0.410
	TH	2.00	456	3,200	0.142 *		
	LT	1.00	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	1	0	0.000	N-S(1):	0.102
	TH	1.00	0	1,600	0.002 *	N-S(2):	0.156 *
	LT	0.00	2	1,600	0.001	E-W(1):	0.364 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.134
	TH	2.00	429	3,200	0.134		
	LT	2.00	192	2,880	0.067 *	V/C:	0.520
Northbound	RT	2.00	429	3,200	0.101	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	2.00	444	2,880	0.154 *		
Eastbound	RT	1.00	284	1,600	0.178	ICU:	0.620
	TH	2.00	952	3,200	0.297 *		
	LT	1.00	0	1,600	0.000	LOS:	B

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **4 - Santa Fe Av & Willow St**
Description: **Baseline + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	152	1,600	0.055	N-S(1):	0.266 *
	TH	2.00	526	3,200	0.164	N-S(2):	0.230
	LT	2.00	273	2,880	0.095 *	E-W(1):	0.296
Westbound	RT	1.00	210	1,600	0.084	E-W(2):	0.317 *
	TH	2.00	758	3,200	0.237 *		
	LT	2.00	284	2,880	0.099	V/C:	0.583
Northbound	RT	1.00	213	1,600	0.084	Lost Time:	0.100
	TH	2.00	549	3,200	0.171 *	ITS:	0.000
	LT	1.00	105	1,600	0.066		
Eastbound	RT	1.00	50	1,600	0.000	ICU:	0.683
	TH	2.00	629	3,200	0.197		
	LT	1.00	128	1,600	0.080 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	115	1,600	0.018	N-S(1):	0.286 *
	TH	2.00	426	3,200	0.133	N-S(2):	0.179
	LT	2.00	350	2,880	0.121 *	E-W(1):	0.439 *
Westbound	RT	1.00	226	1,600	0.081	E-W(2):	0.274
	TH	2.00	532	3,200	0.166		
	LT	2.00	198	2,880	0.069 *	V/C:	0.725
Northbound	RT	1.00	263	1,600	0.130	Lost Time:	0.100
	TH	2.00	528	3,200	0.165 *	ITS:	0.000
	LT	1.00	73	1,600	0.046		
Eastbound	RT	1.00	34	1,600	0.000	ICU:	0.825
	TH	2.00	1,184	3,200	0.370 *		
	LT	1.00	172	1,600	0.108	LOS:	D

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **5 - Alameda St & O St**
Description: **Baseline + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.249 *
	TH	3.00	579	4,800	0.121	N-S(2):	0.121
	LT	1.00	290	1,600	0.181 *	E-W(1):	0.065
Westbound	RT	1.00	280	1,600	0.084 *	E-W(2):	0.084 *
	TH	0.00	0	0	0.000		
	LT	1.00	105	1,600	0.065	V/C:	0.333
Northbound	RT	0.00	76	0	0.000	Lost Time:	0.100
	TH	3.00	252	4,800	0.068 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.433
	TH	0.00	0	0	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):	0.322 *
	TH	3.00	772	4,800	0.161	N-S(2):	0.161
	LT	1.00	273	1,600	0.171 *	E-W(1):	0.064
Westbound	RT	1.00	333	1,600	0.122 *	E-W(2):	0.122 *
	TH	0.00	0	0	0.000		
	LT	1.00	103	1,600	0.064	V/C:	0.444
Northbound	RT	0.00	131	0	0.000	Lost Time:	0.100
	TH	3.00	593	4,800	0.151 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.544
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **6 - O St & Pacific Coast Hwy**
Description: **Baseline + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	211	1,600	0.049	N-S(1):	0.098 *
	TH	0.00	0	0	0.000	N-S(2):	0.049
	LT	1.00	157	1,600	0.098 *	E-W(1):	0.292
Westbound	RT	0.00	125	0	0.000	E-W(2):	0.393 *
	TH	3.00	961	4,800	0.226 *		
	LT	0.00	0	0	0.000	V/C:	0.491
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.591
	TH	2.00	934	3,200	0.292		
	LT	1.00	267	1,600	0.167 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	269	1,600	0.091 *	N-S(1):	0.089
	TH	0.00	0	0	0.000	N-S(2):	0.091 *
	LT	1.00	142	1,600	0.089	E-W(1):	0.382
Westbound	RT	0.00	234	0	0.000	E-W(2):	0.411 *
	TH	3.00	997	4,800	0.256 *		
	LT	0.00	0	0	0.000	V/C:	0.502
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.602
	TH	2.00	1,223	3,200	0.382		
	LT	1.00	248	1,600	0.155 *	LOS:	B

* - Denotes critical movement

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	5	185	7	25	100	29	139	3	28	57	79
Future Vol, veh/h	35	5	185	7	25	100	29	139	3	28	57	79
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	37	5	195	7	26	105	31	146	3	29	60	83
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.2	9.3	10.5	9.9
HCM LOS	B	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	16%	5%	17%
Vol Thru, %	81%	2%	19%	35%
Vol Right, %	2%	82%	76%	48%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	171	225	132	164
LT Vol	29	35	7	28
Through Vol	139	5	25	57
RT Vol	3	185	100	79
Lane Flow Rate	180	237	139	173
Geometry Grp	1	1	1	1
Degree of Util (X)	0.268	0.318	0.192	0.245
Departure Headway (Hd)	5.366	4.835	4.982	5.11
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	662	737	711	694
Service Time	3.464	2.917	3.076	3.208
HCM Lane V/C Ratio	0.272	0.322	0.195	0.249
HCM Control Delay	10.5	10.2	9.3	9.9
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	1.1	1.4	0.7	1

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	39	1	0	0	122	0	3	0	117	10
Future Vol, veh/h	0	0	39	1	0	0	122	0	3	0	117	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	41	1	0	0	128	0	3	0	123	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.4	8.1	8.5	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	98%	0%	100%	0%
Vol Thru, %	0%	0%	0%	92%
Vol Right, %	2%	100%	0%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	39	1	127
LT Vol	122	0	1	0
Through Vol	0	0	0	117
RT Vol	3	39	0	10
Lane Flow Rate	132	41	1	134
Geometry Grp	1	1	1	1
Degree of Util (X)	0.167	0.048	0.001	0.161
Departure Headway (Hd)	4.561	4.23	5.079	4.331
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	782	852	709	821
Service Time	2.621	2.23	3.081	2.398
HCM Lane V/C Ratio	0.169	0.048	0.001	0.163
HCM Control Delay	8.5	7.4	8.1	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.2	0	0.6

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	12	196	14	31	139	54	132	1	35	57	91
Future Vol, veh/h	28	12	196	14	31	139	54	132	1	35	57	91
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	29	13	206	15	33	146	57	139	1	37	60	96
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11	10.4	11.5	10.8
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	12%	8%	19%
Vol Thru, %	71%	5%	17%	31%
Vol Right, %	1%	83%	76%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	187	236	184	183
LT Vol	54	28	14	35
Through Vol	132	12	31	57
RT Vol	1	196	139	91
Lane Flow Rate	197	248	194	193
Geometry Grp	1	1	1	1
Degree of Util (X)	0.315	0.356	0.284	0.293
Departure Headway (Hd)	5.763	5.155	5.274	5.471
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	624	698	680	657
Service Time	3.805	3.194	3.316	3.512
HCM Lane V/C Ratio	0.316	0.355	0.285	0.294
HCM Control Delay	11.5	11	10.4	10.8
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.3	1.6	1.2	1.2

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	50	1	2	0	170	0	3	0	113	12
Future Vol, veh/h	0	0	50	1	2	0	170	0	3	0	113	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	53	1	2	0	179	0	3	0	119	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.6	8.1	9.1	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	98%	0%	33%	0%
Vol Thru, %	0%	0%	67%	90%
Vol Right, %	2%	100%	0%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	173	50	3	125
LT Vol	170	0	1	0
Through Vol	0	0	2	113
RT Vol	3	50	0	12
Lane Flow Rate	182	53	3	132
Geometry Grp	1	1	1	1
Degree of Util (X)	0.232	0.064	0.004	0.16
Departure Headway (Hd)	4.591	4.351	5.081	4.385
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	774	828	708	805
Service Time	2.664	2.351	3.085	2.482
HCM Lane V/C Ratio	0.235	0.064	0.004	0.164
HCM Control Delay	9.1	7.6	8.1	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.2	0	0.6

Project Title: Century Villages at Cabrillo SP
Intersection: 9 - Technology Pl/Judson Av & Pacific Coast Hwy
Description: Baseline + Project

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.68	18	1,091	0.002	N-S(1):	0.124 *
	TH	0.32	9	509	0.017	N-S(2):	0.049
	LT	1.00	132	1,600	0.082 *	E-W(1):	0.349
Westbound	RT	1.00	90	1,600	0.015	E-W(2):	0.421 *
	TH	2.00	1,251	3,200	0.391 *		
	LT	1.00	51	1,600	0.032	V/C:	0.545
Northbound	RT	0.91	62	1,456	0.026	Lost Time:	0.100
	TH	0.09	6	144	0.042 *	ITS:	0.000
	LT	1.00	51	1,600	0.032		
Eastbound	RT	1.00	62	1,600	0.023	ICU:	0.645
	TH	2.00	1,014	3,200	0.317		
	LT	1.00	47	1,600	0.030 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.82	39	1,311	0.016	N-S(1):	0.142 *
	TH	0.18	9	289	0.030	N-S(2):	0.069
	LT	1.00	174	1,600	0.109 *	E-W(1):	0.454 *
Westbound	RT	1.00	122	1,600	0.022	E-W(2):	0.369
	TH	2.00	1,093	3,200	0.342		
	LT	1.00	11	1,600	0.007 *	V/C:	0.596
Northbound	RT	0.90	47	1,436	0.029	Lost Time:	0.100
	TH	0.10	5	164	0.033 *	ITS:	0.000
	LT	1.00	62	1,600	0.039		
Eastbound	RT	1.00	61	1,600	0.019	ICU:	0.696
	TH	2.00	1,430	3,200	0.447 *		
	LT	1.00	43	1,600	0.027	LOS:	B

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **10 - Santa Fe Av & Pacific Coast Hwy**
Description: **Baseline + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	146	1,600	0.091	N-S(1):	0.233 *
	TH	2.00	333	3,200	0.104	N-S(2):	0.202
	LT	1.00	232	1,600	0.145 *	E-W(1):	0.258
Westbound	RT	0.00	130	0	0.000	E-W(2):	0.452 *
	TH	2.00	1,146	3,200	0.399 *		
	LT	1.00	39	1,600	0.024	V/C:	0.685
Northbound	RT	1.00	47	1,600	0.017	Lost Time:	0.100
	TH	2.00	283	3,200	0.088 *	ITS:	0.000
	LT	1.00	156	1,600	0.098		
Eastbound	RT	1.00	72	1,600	0.000	ICU:	0.785
	TH	2.00	749	3,200	0.234		
	LT	1.00	85	1,600	0.053 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	114	1,600	0.040	N-S(1):	0.259 *
	TH	2.00	222	3,200	0.069	N-S(2):	0.170
	LT	1.00	168	1,600	0.105 *	E-W(1):	0.468 *
Westbound	RT	0.00	100	0	0.000	E-W(2):	0.374
	TH	2.00	898	3,200	0.312		
	LT	1.00	65	1,600	0.041 *	V/C:	0.727
Northbound	RT	1.00	83	1,600	0.032	Lost Time:	0.100
	TH	2.00	494	3,200	0.154 *	ITS:	0.000
	LT	1.00	162	1,600	0.101		
Eastbound	RT	1.00	66	1,600	0.000	ICU:	0.827
	TH	2.00	1,368	3,200	0.427 *		
	LT	1.00	99	1,600	0.062	LOS:	D

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **11 - Harbor Av & Pacific Coast Hwy**
Description: **Baseline + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.20	16	320	0.049	N-S(1):	0.205 *
	TH	0.80	100	1,280	0.078	N-S(2):	0.085
	LT	1.00	219	1,600	0.137 *	E-W(1):	0.384 *
Westbound	RT	0.00	164	0	0.000	E-W(2):	0.375
	TH	3.00	1,625	4,800	0.373		
	LT	1.00	62	1,600	0.039 *	V/C:	0.589
Northbound	RT	0.77	85	1,239	0.049	Lost Time:	0.100
	TH	0.23	25	361	0.068 *	ITS:	0.000
	LT	1.00	12	1,600	0.007		
Eastbound	RT	0.00	25	0	0.000	ICU:	0.689
	TH	2.00	1,078	3,200	0.345 *		
	LT	1.00	3	1,600	0.002	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.44	23	700	0.028	N-S(1):	0.289 *
	TH	0.56	29	900	0.032	N-S(2):	0.058
	LT	1.00	124	1,600	0.078 *	E-W(1):	0.521 *
Westbound	RT	0.00	142	0	0.000	E-W(2):	0.282
	TH	3.00	1,179	4,800	0.275		
	LT	1.00	30	1,600	0.019 *	V/C:	0.810
Northbound	RT	0.86	292	1,382	0.202	Lost Time:	0.100
	TH	0.14	46	218	0.211 *	ITS:	0.000
	LT	1.00	41	1,600	0.026		
Eastbound	RT	0.00	18	0	0.000	ICU:	0.910
	TH	2.00	1,588	3,200	0.502 *		
	LT	1.00	12	1,600	0.007	LOS:	E

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **12 - Magnolia Av & Pacific Coast Hwy**
Description: **Baseline + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	119	1,600	0.061	N-S(1):	0.184
	TH	1.00	253	1,600	0.158 *	N-S(2):	0.227 *
	LT	1.00	79	1,600	0.050	E-W(1):	0.285
Westbound	RT	0.00	50	0	0.000	E-W(2):	0.330 *
	TH	3.00	1,406	4,800	0.303 *		
	LT	1.00	95	1,600	0.060	V/C:	0.557
Northbound	RT	1.00	46	1,600	0.000	Lost Time:	0.100
	TH	1.00	214	1,600	0.134	ITS:	0.000
	LT	1.00	110	1,600	0.069 *		
Eastbound	RT	0.00	95	0	0.000	ICU:	0.657
	TH	3.00	986	4,800	0.225		
	LT	1.00	42	1,600	0.027 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	57	1,600	0.000	N-S(1):	0.249 *
	TH	1.00	214	1,600	0.134	N-S(2):	0.206
	LT	1.00	49	1,600	0.031 *	E-W(1):	0.403 *
Westbound	RT	0.00	50	0	0.000	E-W(2):	0.274
	TH	3.00	828	4,800	0.183		
	LT	1.00	62	1,600	0.039 *	V/C:	0.652
Northbound	RT	1.00	83	1,600	0.032	Lost Time:	0.100
	TH	1.00	350	1,600	0.218 *	ITS:	0.000
	LT	1.00	114	1,600	0.072		
Eastbound	RT	0.00	101	0	0.000	ICU:	0.752
	TH	3.00	1,645	4,800	0.364 *		
	LT	1.00	145	1,600	0.091	LOS:	C

* - Denotes critical movement

Future Base (2033)

Project Title: **Century Villages at Cabrillo SP**
Intersection: **1 - Alameda St & Connector to Sepulveda**
Description: **Future Base (2033)**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.316 *
	TH	3.00	962	4,800	0.200	N-S(2):	0.200
	LT	1.00	260	1,600	0.163 *	E-W(1):	0.035 *
Westbound	RT	2.00	313	3,200	0.017	E-W(2):	0.017
	TH	0.00	0	0	0.000		
	LT	1.00	56	1,600	0.035 *	V/C:	0.351
Northbound	RT	0.00	80	0	0.000	Lost Time:	0.100
	TH	3.00	653	4,800	0.153 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.451
	TH	0.00	0	0	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):	0.360 *
	TH	3.00	1,109	4,800	0.231	N-S(2):	0.231
	LT	1.00	228	1,600	0.143 *	E-W(1):	0.044 *
Westbound	RT	2.00	310	3,200	0.026	E-W(2):	0.026
	TH	0.00	0	0	0.000		
	LT	1.00	71	1,600	0.044 *	V/C:	0.404
Northbound	RT	0.00	112	0	0.000	Lost Time:	0.100
	TH	3.00	928	4,800	0.217 *	ITS:	0.000
	LT	0.00	0	0	0.000		
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: **Century Villages at Cabrillo SP**
Intersection: **2 - Connector to Alameda & Sepulveda Bl**
Description: **Future Base (2033)**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	94	1,600	0.028 *	N-S(1):	0.030
	TH	0.38	13	612	0.021	N-S(2):	0.031 *
	LT	1.62	55	2,329	0.024	E-W(1):	0.118
Westbound	RT	1.00	117	1,600	0.061	E-W(2):	0.289 *
	TH	1.00	365	1,600	0.228 *		
	LT	1.00	7	1,600	0.004	V/C:	0.320
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	2.00	13	1,600	0.006	ITS:	0.000
	LT	0.00	4	1,600	0.003 *		
Eastbound	RT	1.00	3	1,600	0.001	ICU:	0.420
	TH	2.00	365	3,200	0.114		
	LT	1.00	97	1,600	0.061 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	157	1,600	0.056 *	N-S(1):	0.013
	TH	0.90	13	1,434	0.009	N-S(2):	0.056 *
	LT	1.10	16	1,589	0.010	E-W(1):	0.161
Westbound	RT	1.00	104	1,600	0.060	E-W(2):	0.311 *
	TH	1.00	363	1,600	0.227 *		
	LT	1.00	7	1,600	0.004	V/C:	0.367
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	2.00	6	3,200	0.003	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	1.00	3	1,600	0.002	ICU:	0.467
	TH	2.00	503	3,200	0.157		
	LT	1.00	134	1,600	0.084 *	LOS:	A

* - Denotes critical movement

Project Title: Century Villages at Cabrillo SP
Intersection: 3 - Terminal Island Fwy & Willow St
Description: Future Base (2033)

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:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000	N-S(1):	0.019
	TH	1.00	0	1,600	0.001 *	N-S(2):	0.075 *
	LT	0.00	0	0	0.000	E-W(1):	0.215 *
Westbound	RT	0.00	2	0	0.000	E-W(2):	0.210
	TH	2.00	666	3,200	0.209		
	LT	2.00	198	2,880	0.069 *	V/C:	0.290
Northbound	RT	2.00	172	3,200	0.019	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	2.00	212	2,880	0.074 *		
Eastbound	RT	1.00	151	1,600	0.058	ICU:	0.390
	TH	2.00	466	3,200	0.146 *		
	LT	1.00	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	1	0	0.000	N-S(1):	0.099 *
	TH	1.00	0	1,600	0.002	N-S(2):	0.090
	LT	0.00	2	1,600	0.001 *	E-W(1):	0.372 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.137
	TH	2.00	438	3,200	0.137		
	LT	2.00	196	2,880	0.068 *	V/C:	0.471
Northbound	RT	2.00	422	3,200	0.098 *	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	2.00	254	2,880	0.088		
Eastbound	RT	1.00	156	1,600	0.098	ICU:	0.571
	TH	2.00	972	3,200	0.304 *		
	LT	1.00	0	1,600	0.000	LOS:	A

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **4 - Santa Fe Av & Willow St**
Description: **Future Base (2033)**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	155	1,600	0.057	N-S(1):	0.271 *
	TH	2.00	539	3,200	0.168	N-S(2):	0.235
	LT	2.00	279	2,880	0.097 *	E-W(1):	0.293
Westbound	RT	1.00	215	1,600	0.086	E-W(2):	0.321 *
	TH	2.00	774	3,200	0.242 *		
	LT	2.00	280	2,880	0.097	V/C:	0.592
Northbound	RT	1.00	211	1,600	0.083	Lost Time:	0.100
	TH	2.00	556	3,200	0.174 *	ITS:	0.000
	LT	1.00	107	1,600	0.067		
Eastbound	RT	1.00	51	1,600	0.000	ICU:	0.692
	TH	2.00	626	3,200	0.196		
	LT	1.00	127	1,600	0.079 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	118	1,600	0.020	N-S(1):	0.294 *
	TH	2.00	428	3,200	0.134	N-S(2):	0.181
	LT	2.00	357	2,880	0.124 *	E-W(1):	0.439 *
Westbound	RT	1.00	231	1,600	0.082	E-W(2):	0.278
	TH	2.00	544	3,200	0.170		
	LT	2.00	186	2,880	0.065 *	V/C:	0.733
Northbound	RT	1.00	264	1,600	0.133	Lost Time:	0.100
	TH	2.00	543	3,200	0.170 *	ITS:	0.000
	LT	1.00	75	1,600	0.047		
Eastbound	RT	1.00	34	1,600	0.000	ICU:	0.833
	TH	2.00	1,196	3,200	0.374 *		
	LT	1.00	173	1,600	0.108	LOS:	D

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **5 - Alameda St & O St**
Description: **Future Base (2033)**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.211 *
	TH	3.00	591	4,800	0.123	N-S(2):	0.123
	LT	1.00	227	1,600	0.142 *	E-W(1):	0.064
Westbound	RT	1.00	244	1,600	0.082 *	E-W(2):	0.082 *
	TH	0.00	0	0	0.000		
	LT	1.00	103	1,600	0.064	V/C:	0.293
Northbound	RT	0.00	74	0	0.000	Lost Time:	0.100
	TH	3.00	257	4,800	0.069 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.393
	TH	0.00	0	0	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):	0.291 *
	TH	3.00	788	4,800	0.164	N-S(2):	0.164
	LT	1.00	221	1,600	0.138 *	E-W(1):	0.064
Westbound	RT	1.00	304	1,600	0.121 *	E-W(2):	0.121 *
	TH	0.00	0	0	0.000		
	LT	1.00	102	1,600	0.064	V/C:	0.412
Northbound	RT	0.00	129	0	0.000	Lost Time:	0.100
	TH	3.00	605	4,800	0.153 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.512
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: Century Villages at Cabrillo SP
Intersection: 6 - O St & Pacific Coast Hwy
Description: Future Base (2033)

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:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	216	1,600	0.050	N-S(1):	0.055 *
	TH	0.00	0	0	0.000	N-S(2):	0.050
	LT	1.00	88	1,600	0.055 *	E-W(1):	0.299
Westbound	RT	0.00	82	0	0.000	E-W(2):	0.393 *
	TH	3.00	984	4,800	0.222 *		
	LT	0.00	0	0	0.000	V/C:	0.448
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.548
	TH	2.00	958	3,200	0.299		
	LT	1.00	273	1,600	0.171 *	LOS:	A

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	275	1,600	0.093 *	N-S(1):	0.053
	TH	0.00	0	0	0.000	N-S(2):	0.093 *
	LT	1.00	84	1,600	0.053	E-W(1):	0.391
Westbound	RT	0.00	200	0	0.000	E-W(2):	0.411 *
	TH	3.00	1,016	4,800	0.253 *		
	LT	0.00	0	0	0.000	V/C:	0.504
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.604
	TH	2.00	1,250	3,200	0.391		
	LT	1.00	253	1,600	0.158 *	LOS:	B

* - Denotes critical movement

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	5	310	7	26	20	30	95	3	14	28	37
Future Vol, veh/h	32	5	310	7	26	20	30	95	3	14	28	37
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	34	5	326	7	27	21	32	100	3	15	29	39
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	8.5	9.7	8.9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	9%	13%	18%
Vol Thru, %	74%	1%	49%	35%
Vol Right, %	2%	89%	38%	47%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	347	53	79
LT Vol	30	32	7	14
Through Vol	95	5	26	28
RT Vol	3	310	20	37
Lane Flow Rate	135	365	56	83
Geometry Grp	1	1	1	1
Degree of Util (X)	0.198	0.44	0.077	0.118
Departure Headway (Hd)	5.301	4.332	4.991	5.104
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	674	829	714	698
Service Time	3.361	2.367	3.047	3.167
HCM Lane V/C Ratio	0.2	0.44	0.078	0.119
HCM Control Delay	9.7	10.8	8.5	8.9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.7	2.3	0.2	0.4

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	26	1	0	0	43	0	3	0	27	10
Future Vol, veh/h	0	0	26	1	0	0	43	0	3	0	27	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	27	1	0	0	45	0	3	0	28	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.9	7.6	7.7	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	93%	0%	100%	0%
Vol Thru, %	0%	0%	0%	73%
Vol Right, %	7%	100%	0%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	46	26	1	37
LT Vol	43	0	1	0
Through Vol	0	0	0	27
RT Vol	3	26	0	10
Lane Flow Rate	48	27	1	39
Geometry Grp	1	1	1	1
Degree of Util (X)	0.06	0.029	0.001	0.045
Departure Headway (Hd)	4.433	3.758	4.579	4.129
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	810	945	776	867
Service Time	2.451	1.81	2.637	2.153
HCM Lane V/C Ratio	0.059	0.029	0.001	0.045
HCM Control Delay	7.7	6.9	7.6	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0	0.1

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	12	296	14	32	27	56	67	1	24	32	57
Future Vol, veh/h	23	12	296	14	32	27	56	67	1	24	32	57
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	24	13	312	15	34	28	59	71	1	25	34	60
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	8.8	9.9	9.2
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	45%	7%	19%	21%
Vol Thru, %	54%	4%	44%	28%
Vol Right, %	1%	89%	37%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	331	73	113
LT Vol	56	23	14	24
Through Vol	67	12	32	32
RT Vol	1	296	27	57
Lane Flow Rate	131	348	77	119
Geometry Grp	1	1	1	1
Degree of Util (X)	0.197	0.43	0.109	0.169
Departure Headway (Hd)	5.43	4.438	5.086	5.111
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	655	808	699	696
Service Time	3.508	2.488	3.159	3.19
HCM Lane V/C Ratio	0.2	0.431	0.11	0.171
HCM Control Delay	9.9	10.8	8.8	9.2
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.7	2.2	0.4	0.6

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	39	1	2	0	59	0	3	0	38	12
Future Vol, veh/h	0	0	39	1	2	0	59	0	3	0	38	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	41	1	2	0	62	0	3	0	40	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	7.6	7.9	7.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	95%	0%	33%	0%
Vol Thru, %	0%	0%	67%	76%
Vol Right, %	5%	100%	0%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	39	3	50
LT Vol	59	0	1	0
Through Vol	0	0	2	38
RT Vol	3	39	0	12
Lane Flow Rate	65	41	3	53
Geometry Grp	1	1	1	1
Degree of Util (X)	0.081	0.043	0.004	0.061
Departure Headway (Hd)	4.484	3.812	4.509	4.188
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	799	927	785	853
Service Time	2.512	1.884	2.587	2.223
HCM Lane V/C Ratio	0.081	0.044	0.004	0.062
HCM Control Delay	7.9	7.1	7.6	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0	0.2

Project Title: Century Villages at Cabrillo SP
Intersection: 9 - Tech. Pl/Judson Av & Pacific Coast Hwy
Description: Future Base (2033)

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:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.79	19	1,267	0.006	N-S(1):	0.060 *
	TH	0.21	5	333	0.015	N-S(2):	0.048
	LT	1.00	31	1,600	0.019 *	E-W(1):	0.353
Westbound	RT	1.00	34	1,600	0.012	E-W(2):	0.387 *
	TH	2.00	1,180	3,200	0.369 *		
	LT	1.00	53	1,600	0.033	V/C:	0.447
Northbound	RT	0.95	63	1,527	0.025	Lost Time:	0.100
	TH	0.05	3	73	0.041 *	ITS:	0.000
	LT	1.00	53	1,600	0.033		
Eastbound	RT	1.00	66	1,600	0.025	ICU:	0.547
	TH	2.00	1,024	3,200	0.320		
	LT	1.00	28	1,600	0.018 *	LOS:	A

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.87	40	1,391	0.024	N-S(1):	0.088 *
	TH	0.13	6	209	0.029	N-S(2):	0.071
	LT	1.00	91	1,600	0.057 *	E-W(1):	0.436 *
Westbound	RT	1.00	42	1,600	0.000	E-W(2):	0.334
	TH	2.00	1,039	3,200	0.325		
	LT	1.00	12	1,600	0.008 *	V/C:	0.524
Northbound	RT	0.98	49	1,568	0.028	Lost Time:	0.100
	TH	0.02	1	32	0.031 *	ITS:	0.000
	LT	1.00	67	1,600	0.042		
Eastbound	RT	1.00	63	1,600	0.018	ICU:	0.624
	TH	2.00	1,371	3,200	0.428 *		
	LT	1.00	15	1,600	0.009	LOS:	B

* - Denotes critical movement

Project Title: Century Villages at Cabrillo SP
Intersection: 10 - Santa Fe Av & Pacific Coast Hwy
Description: Future Base (2033)

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:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	132	1,600	0.083	N-S(1):	0.239 *
	TH	2.00	345	3,200	0.108	N-S(2):	0.206
	LT	1.00	237	1,600	0.148 *	E-W(1):	0.237
Westbound	RT	0.00	133	0	0.000	E-W(2):	0.413 *
	TH	2.00	1,035	3,200	0.365 *		
	LT	1.00	47	1,600	0.029	V/C:	0.652
Northbound	RT	1.00	49	1,600	0.016	Lost Time:	0.100
	TH	2.00	291	3,200	0.091 *	ITS:	0.000
	LT	1.00	157	1,600	0.098		
Eastbound	RT	1.00	70	1,600	0.000	ICU:	0.752
	TH	2.00	664	3,200	0.208		
	LT	1.00	76	1,600	0.048 *	LOS:	C

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	92	1,600	0.029	N-S(1):	0.267 *
	TH	2.00	227	3,200	0.071	N-S(2):	0.172
	LT	1.00	172	1,600	0.108 *	E-W(1):	0.429 *
Westbound	RT	0.00	102	0	0.000	E-W(2):	0.335
	TH	2.00	784	3,200	0.277		
	LT	1.00	69	1,600	0.043 *	V/C:	0.696
Northbound	RT	1.00	92	1,600	0.036	Lost Time:	0.100
	TH	2.00	509	3,200	0.159 *	ITS:	0.000
	LT	1.00	161	1,600	0.101		
Eastbound	RT	1.00	64	1,600	0.000	ICU:	0.796
	TH	2.00	1,234	3,200	0.386 *		
	LT	1.00	92	1,600	0.058	LOS:	C

* - Denotes critical movement

Project Title: Century Villages at Cabrillo SP
Intersection: 11 - Harbor Av & Pacific Coast Hwy
Description: Future Base (2033)

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:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.20	16	320	0.049	N-S(1):	0.209 *
	TH	0.80	102	1,280	0.080	N-S(2):	0.086
	LT	1.00	224	1,600	0.140 *	E-W(1):	0.362 *
Westbound	RT	0.00	171	0	0.000	E-W(2):	0.357
	TH	3.00	1,533	4,800	0.355		
	LT	1.00	63	1,600	0.039 *	V/C:	0.571
Northbound	RT	0.77	86	1,240	0.050	Lost Time:	0.100
	TH	0.23	25	360	0.069 *	ITS:	0.000
	LT	1.00	9	1,600	0.006		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.671
	TH	2.00	1,010	3,200	0.323 *		
	LT	1.00	3	1,600	0.002	LOS:	B

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.43	23	694	0.029	N-S(1):	0.298 *
	TH	0.57	30	906	0.033	N-S(2):	0.057
	LT	1.00	131	1,600	0.082 *	E-W(1):	0.486 *
Westbound	RT	0.00	145	0	0.000	E-W(2):	0.263
	TH	3.00	1,079	4,800	0.255		
	LT	1.00	31	1,600	0.019 *	V/C:	0.784
Northbound	RT	0.86	298	1,382	0.206	Lost Time:	0.100
	TH	0.14	47	218	0.216 *	ITS:	0.000
	LT	1.00	38	1,600	0.024		
Eastbound	RT	0.00	14	0	0.000	ICU:	0.884
	TH	2.00	1,480	3,200	0.467 *		
	LT	1.00	12	1,600	0.008	LOS:	D

* - Denotes critical movement

Project Title: Century Villages at Cabrillo SP
Intersection: 12 - Magnolia Av & Pacific Coast Hwy
Description: Future Base (2033)

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:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	122	1,600	0.064	N-S(1):	0.190
	TH	1.00	259	1,600	0.162 *	N-S(2):	0.235 *
	LT	1.00	81	1,600	0.051	E-W(1):	0.288
Westbound	RT	0.00	51	0	0.000	E-W(2):	0.334 *
	TH	3.00	1,438	4,800	0.310 *		
	LT	1.00	98	1,600	0.061	V/C:	0.569
Northbound	RT	1.00	50	1,600	0.001	Lost Time:	0.100
	TH	1.00	222	1,600	0.139	ITS:	0.000
	LT	1.00	116	1,600	0.073 *		
Eastbound	RT	0.00	95	0	0.000	ICU:	0.669
	TH	3.00	996	4,800	0.227		
	LT	1.00	39	1,600	0.024 *	LOS:	B

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	55	1,600	0.000	N-S(1):	0.255 *
	TH	1.00	222	1,600	0.139	N-S(2):	0.212
	LT	1.00	50	1,600	0.031 *	E-W(1):	0.413 *
Westbound	RT	0.00	51	0	0.000	E-W(2):	0.278
	TH	3.00	835	4,800	0.185		
	LT	1.00	66	1,600	0.041 *	V/C:	0.668
Northbound	RT	1.00	86	1,600	0.033	Lost Time:	0.100
	TH	1.00	359	1,600	0.224 *	ITS:	0.000
	LT	1.00	117	1,600	0.073		
Eastbound	RT	0.00	107	0	0.000	ICU:	0.768
	TH	3.00	1,680	4,800	0.372 *		
	LT	1.00	148	1,600	0.093	LOS:	C

* - Denotes critical movement

Future + Project

Project Title: **Century Villages at Cabrillo SP**
Intersection: **1 - Alameda St & Connector to Sepulveda**
Description: **Future + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.324 *
	TH	3.00	972	4,800	0.203	N-S(2):	0.203
	LT	1.00	271	1,600	0.169 *	E-W(1):	0.035 *
Westbound	RT	2.00	328	3,200	0.018	E-W(2):	0.018
	TH	0.00	0	0	0.000		
	LT	1.00	56	1,600	0.035 *	V/C:	0.359
Northbound	RT	0.00	80	0	0.000	Lost Time:	0.100
	TH	3.00	666	4,800	0.155 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.459
	TH	0.00	0	0	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):	0.372 *
	TH	3.00	1,123	4,800	0.234	N-S(2):	0.234
	LT	1.00	244	1,600	0.153 *	E-W(1):	0.044 *
Westbound	RT	2.00	323	3,200	0.025	E-W(2):	0.025
	TH	0.00	0	0	0.000		
	LT	1.00	71	1,600	0.044 *	V/C:	0.416
Northbound	RT	0.00	112	0	0.000	Lost Time:	0.100
	TH	3.00	939	4,800	0.219 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.516
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	A

* - Denotes critical movement

Project Title: Century Villages at Cabrillo SP
Intersection: 2 - Connector to Alameda & Sepulveda Bl
Description: Future + Project

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	94	1,600	0.028	N-S(1):	0.033 *
	TH	0.33	13	527	0.025	N-S(2):	0.031
	LT	1.67	66	2,406	0.027 *	E-W(1):	0.120
Westbound	RT	1.00	132	1,600	0.069	E-W(2):	0.295 *
	TH	1.00	374	1,600	0.234 *		
	LT	1.00	7	1,600	0.004	V/C:	0.328
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	2.00	13	1,600	0.006 *	ITS:	0.000
	LT	0.00	4	1,600	0.003		
Eastbound	RT	1.00	3	1,600	0.001	ICU:	0.428
	TH	2.00	372	3,200	0.116		
	LT	1.00	97	1,600	0.061 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	157	1,600	0.056 *	N-S(1):	0.019
	TH	0.58	13	924	0.014	N-S(2):	0.056 *
	LT	1.42	32	2,048	0.016	E-W(1):	0.164
Westbound	RT	1.00	117	1,600	0.065	E-W(2):	0.316 *
	TH	1.00	371	1,600	0.232 *		
	LT	1.00	7	1,600	0.004	V/C:	0.372
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	2.00	6	3,200	0.003	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	1.00	3	1,600	0.002	ICU:	0.472
	TH	2.00	513	3,200	0.160		
	LT	1.00	134	1,600	0.084 *	LOS:	A

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **3 - Terminal Island Fwy & Willow St**
Description: **Future + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000	N-S(1):	0.026
	TH	1.00	0	1,600	0.001 *	N-S(2):	0.083 *
	LT	0.00	0	0	0.000	E-W(1):	0.215 *
Westbound	RT	0.00	2	0	0.000	E-W(2):	0.210
	TH	2.00	666	3,200	0.209		
	LT	2.00	198	2,880	0.069 *	V/C:	0.298
Northbound	RT	2.00	193	3,200	0.026	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	2.00	236	2,880	0.082 *		
Eastbound	RT	1.00	169	1,600	0.065	ICU:	0.398
	TH	2.00	466	3,200	0.146 *		
	LT	1.00	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	1	0	0.000	N-S(1):	0.104 *
	TH	1.00	0	1,600	0.002	N-S(2):	0.097
	LT	0.00	2	1,600	0.001 *	E-W(1):	0.372 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.137
	TH	2.00	438	3,200	0.137		
	LT	2.00	196	2,880	0.068 *	V/C:	0.476
Northbound	RT	2.00	439	3,200	0.103 *	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	2.00	274	2,880	0.095		
Eastbound	RT	1.00	181	1,600	0.113	ICU:	0.576
	TH	2.00	972	3,200	0.304 *		
	LT	1.00	0	1,600	0.000	LOS:	A

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **4 - Santa Fe Av & Willow St**
Description: **Future + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	155	1,600	0.056	N-S(1):	0.273 *
	TH	2.00	546	3,200	0.171	N-S(2):	0.238
	LT	2.00	279	2,880	0.097 *	E-W(1):	0.302
Westbound	RT	1.00	215	1,600	0.086	E-W(2):	0.324 *
	TH	2.00	774	3,200	0.242 *		
	LT	2.00	291	2,880	0.101	V/C:	0.597
Northbound	RT	1.00	217	1,600	0.085	Lost Time:	0.100
	TH	2.00	562	3,200	0.176 *	ITS:	0.000
	LT	1.00	107	1,600	0.067		
Eastbound	RT	1.00	51	1,600	0.000	ICU:	0.697
	TH	2.00	643	3,200	0.201		
	LT	1.00	131	1,600	0.082 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	118	1,600	0.019	N-S(1):	0.295 *
	TH	2.00	438	3,200	0.137	N-S(2):	0.184
	LT	2.00	357	2,880	0.124 *	E-W(1):	0.448 *
Westbound	RT	1.00	231	1,600	0.082	E-W(2):	0.280
	TH	2.00	544	3,200	0.170		
	LT	2.00	202	2,880	0.070 *	V/C:	0.743
Northbound	RT	1.00	269	1,600	0.133	Lost Time:	0.100
	TH	2.00	548	3,200	0.171 *	ITS:	0.000
	LT	1.00	75	1,600	0.047		
Eastbound	RT	1.00	34	1,600	0.000	ICU:	0.843
	TH	2.00	1,210	3,200	0.378 *		
	LT	1.00	176	1,600	0.110	LOS:	D

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **5 - Alameda St & O St**
Description: **Future + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.218 *
	TH	3.00	591	4,800	0.123	N-S(2):	0.123
	LT	1.00	237	1,600	0.148 *	E-W(1):	0.067
Westbound	RT	1.00	257	1,600	0.087 *	E-W(2):	0.087 *
	TH	0.00	0	0	0.000		
	LT	1.00	107	1,600	0.067	V/C:	0.305
Northbound	RT	0.00	77	0	0.000	Lost Time:	0.100
	TH	3.00	257	4,800	0.070 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.405
	TH	0.00	0	0	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):	0.301 *
	TH	3.00	788	4,800	0.164	N-S(2):	0.164
	LT	1.00	235	1,600	0.147 *	E-W(1):	0.066
Westbound	RT	1.00	315	1,600	0.123 *	E-W(2):	0.123 *
	TH	0.00	0	0	0.000		
	LT	1.00	105	1,600	0.066	V/C:	0.424
Northbound	RT	0.00	133	0	0.000	Lost Time:	0.100
	TH	3.00	605	4,800	0.154 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.524
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **6 - O St & Pacific Coast Hwy**
Description: **Future + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	216	1,600	0.050	N-S(1):	0.063 *
	TH	0.00	0	0	0.000	N-S(2):	0.050
	LT	1.00	101	1,600	0.063 *	E-W(1):	0.302
Westbound	RT	0.00	99	0	0.000	E-W(2):	0.399 *
	TH	3.00	993	4,800	0.228 *		
	LT	0.00	0	0	0.000	V/C:	0.462
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.562
	TH	2.00	965	3,200	0.302		
	LT	1.00	273	1,600	0.171 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	275	1,600	0.093 *	N-S(1):	0.063
	TH	0.00	0	0	0.000	N-S(2):	0.093 *
	LT	1.00	101	1,600	0.063	E-W(1):	0.394
Westbound	RT	0.00	214	0	0.000	E-W(2):	0.416 *
	TH	3.00	1,024	4,800	0.258 *		
	LT	0.00	0	0	0.000	V/C:	0.509
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.609
	TH	2.00	1,260	3,200	0.394		
	LT	1.00	253	1,600	0.158 *	LOS:	B

* - Denotes critical movement

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	5	310	7	26	105	30	145	3	29	60	82
Future Vol, veh/h	36	5	310	7	26	105	30	145	3	29	60	82
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	38	5	326	7	27	111	32	153	3	31	63	86
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.3	10	11.6	10.9
HCM LOS	B	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	10%	5%	17%
Vol Thru, %	81%	1%	19%	35%
Vol Right, %	2%	88%	76%	48%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	178	351	138	171
LT Vol	30	36	7	29
Through Vol	145	5	26	60
RT Vol	3	310	105	82
Lane Flow Rate	187	369	145	180
Geometry Grp	1	1	1	1
Degree of Util (X)	0.307	0.514	0.218	0.283
Departure Headway (Hd)	5.902	5.007	5.407	5.652
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	607	720	662	635
Service Time	3.949	3.046	3.457	3.697
HCM Lane V/C Ratio	0.308	0.512	0.219	0.283
HCM Control Delay	11.6	13.3	10	10.9
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	1.3	3	0.8	1.2

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	41	1	0	0	128	0	3	0	123	10
Future Vol, veh/h	0	0	41	1	0	0	128	0	3	0	123	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	43	1	0	0	135	0	3	0	129	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	8.1	8.6	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	98%	0%	100%	0%
Vol Thru, %	0%	0%	0%	92%
Vol Right, %	2%	100%	0%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	131	41	1	133
LT Vol	128	0	1	0
Through Vol	0	0	0	123
RT Vol	3	41	0	10
Lane Flow Rate	138	43	1	140
Geometry Grp	1	1	1	1
Degree of Util (X)	0.175	0.051	0.001	0.169
Departure Headway (Hd)	4.57	4.259	5.113	4.342
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	779	846	704	818
Service Time	2.635	2.259	3.115	2.413
HCM Lane V/C Ratio	0.177	0.051	0.001	0.171
HCM Control Delay	8.6	7.5	8.1	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.2	0	0.6

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	12	296	14	32	145	56	137	1	37	59	95
Future Vol, veh/h	29	12	296	14	32	145	56	137	1	37	59	95
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	31	13	312	15	34	153	59	144	1	39	62	100
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.9	11.2	12.5	11.8
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	9%	7%	19%
Vol Thru, %	71%	4%	17%	31%
Vol Right, %	1%	88%	76%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	194	337	191	191
LT Vol	56	29	14	37
Through Vol	137	12	32	59
RT Vol	1	296	145	95
Lane Flow Rate	204	355	201	201
Geometry Grp	1	1	1	1
Degree of Util (X)	0.349	0.519	0.312	0.328
Departure Headway (Hd)	6.158	5.267	5.583	5.866
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	582	681	639	609
Service Time	4.227	3.327	3.653	3.936
HCM Lane V/C Ratio	0.351	0.521	0.315	0.33
HCM Control Delay	12.5	13.9	11.2	11.8
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.6	3	1.3	1.4

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	52	1	2	0	177	0	3	0	118	12
Future Vol, veh/h	0	0	52	1	2	0	177	0	3	0	118	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	55	1	2	0	186	0	3	0	124	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	8.1	9.2	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	98%	0%	33%	0%
Vol Thru, %	0%	0%	67%	91%
Vol Right, %	2%	100%	0%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	180	52	3	130
LT Vol	177	0	1	0
Through Vol	0	0	2	118
RT Vol	3	52	0	12
Lane Flow Rate	189	55	3	137
Geometry Grp	1	1	1	1
Degree of Util (X)	0.242	0.067	0.004	0.171
Departure Headway (Hd)	4.6	4.382	5.115	4.499
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	771	821	702	802
Service Time	2.681	2.389	3.127	2.499
HCM Lane V/C Ratio	0.245	0.067	0.004	0.171
HCM Control Delay	9.2	7.7	8.1	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.2	0	0.6

Project Title: Century Villages at Cabrillo SP
Intersection: 9 - Tech. Pl/Judson Av & Pacific Coast Hwy
Description: Future + Project

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.68	19	1,086	0.002	N-S(1):	0.129 *
	TH	0.32	9	514	0.018	N-S(2):	0.051
	LT	1.00	138	1,600	0.086 *	E-W(1):	0.353
Westbound	RT	1.00	95	1,600	0.016	E-W(2):	0.410 *
	TH	2.00	1,213	3,200	0.379 *		
	LT	1.00	53	1,600	0.033	V/C:	0.539
Northbound	RT	0.91	63	1,461	0.027	Lost Time:	0.100
	TH	0.09	6	139	0.043 *	ITS:	0.000
	LT	1.00	53	1,600	0.033		
Eastbound	RT	1.00	66	1,600	0.025	ICU:	0.639
	TH	2.00	1,024	3,200	0.320		
	LT	1.00	49	1,600	0.031 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.82	40	1,306	0.017	N-S(1):	0.147 *
	TH	0.18	9	294	0.031	N-S(2):	0.073
	LT	1.00	180	1,600	0.113 *	E-W(1):	0.436 *
Westbound	RT	1.00	127	1,600	0.023	E-W(2):	0.367
	TH	2.00	1,086	3,200	0.339		
	LT	1.00	12	1,600	0.008 *	V/C:	0.583
Northbound	RT	0.91	49	1,452	0.030	Lost Time:	0.100
	TH	0.09	5	148	0.034 *	ITS:	0.000
	LT	1.00	67	1,600	0.042		
Eastbound	RT	1.00	63	1,600	0.018	ICU:	0.683
	TH	2.00	1,371	3,200	0.428 *		
	LT	1.00	44	1,600	0.028	LOS:	B

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **10 - Santa Fe Av & Pacific Coast Hwy**
Description: **Future + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	150	1,600	0.094	N-S(1):	0.239 *
	TH	2.00	345	3,200	0.108	N-S(2):	0.208
	LT	1.00	237	1,600	0.148 *	E-W(1):	0.265
Westbound	RT	0.00	133	0	0.000	E-W(2):	0.442 *
	TH	2.00	1,109	3,200	0.388 *		
	LT	1.00	47	1,600	0.029	V/C:	0.681
Northbound	RT	1.00	49	1,600	0.016	Lost Time:	0.100
	TH	2.00	291	3,200	0.091 *	ITS:	0.000
	LT	1.00	160	1,600	0.100		
Eastbound	RT	1.00	74	1,600	0.000	ICU:	0.781
	TH	2.00	756	3,200	0.236		
	LT	1.00	87	1,600	0.054 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	117	1,600	0.042	N-S(1):	0.267 *
	TH	2.00	227	3,200	0.071	N-S(2):	0.174
	LT	1.00	172	1,600	0.108 *	E-W(1):	0.453 *
Westbound	RT	0.00	102	0	0.000	E-W(2):	0.372
	TH	2.00	887	3,200	0.309		
	LT	1.00	69	1,600	0.043 *	V/C:	0.720
Northbound	RT	1.00	92	1,600	0.036	Lost Time:	0.100
	TH	2.00	509	3,200	0.159 *	ITS:	0.000
	LT	1.00	165	1,600	0.103		
Eastbound	RT	1.00	67	1,600	0.000	ICU:	0.820
	TH	2.00	1,311	3,200	0.410 *		
	LT	1.00	101	1,600	0.063	LOS:	D

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **11 - Harbor Av & Pacific Coast Hwy**
Description: **Future + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	16	320	0.049		N-S(1):	0.209 *
	TH	0.80	102	1,280	0.080		N-S(2):	0.088
	LT	1.00	224	1,600	0.140	*	E-W(1):	0.390 *
Westbound	RT	0.00	171	0	0.000		E-W(2):	0.372
	TH	3.00	1,603	4,800	0.370			
	LT	1.00	63	1,600	0.039	*	V/C:	0.599
Northbound	RT	0.77	86	1,240	0.050		Lost Time:	0.100
	TH	0.23	25	360	0.069	*	ITS:	0.000
	LT	1.00	13	1,600	0.008			
Eastbound	RT	0.00	28	0	0.000		ICU:	0.699
	TH	2.00	1,096	3,200	0.351	*		
	LT	1.00	3	1,600	0.002		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.43	23	694	0.029		N-S(1):	0.298 *
	TH	0.57	30	906	0.033		N-S(2):	0.061
	LT	1.00	131	1,600	0.082	*	E-W(1):	0.510 *
Westbound	RT	0.00	145	0	0.000		E-W(2):	0.283
	TH	3.00	1,176	4,800	0.275			
	LT	1.00	31	1,600	0.019	*	V/C:	0.808
Northbound	RT	0.86	298	1,382	0.206		Lost Time:	0.100
	TH	0.14	47	218	0.216	*	ITS:	0.000
	LT	1.00	44	1,600	0.028			
Eastbound	RT	0.00	19	0	0.000		ICU:	0.908
	TH	2.00	1,552	3,200	0.491	*		
	LT	1.00	12	1,600	0.008		LOS:	E

* - Denotes critical movement

Project Title: **Century Villages at Cabrillo SP**
Intersection: **12 - Magnolia Av & Pacific Coast Hwy**
Description: **Future + Project**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	126	1,600	0.065	N-S(1):	0.190
	TH	1.00	259	1,600	0.162 *	N-S(2):	0.236 *
	LT	1.00	81	1,600	0.051	E-W(1):	0.292
Westbound	RT	0.00	51	0	0.000	E-W(2):	0.341 *
	TH	3.00	1,449	4,800	0.313 *		
	LT	1.00	98	1,600	0.061	V/C:	0.577
Northbound	RT	1.00	50	1,600	0.001	Lost Time:	0.100
	TH	1.00	222	1,600	0.139	ITS:	0.000
	LT	1.00	119	1,600	0.074 *		
Eastbound	RT	0.00	99	0	0.000	ICU:	0.677
	TH	3.00	1,011	4,800	0.231		
	LT	1.00	45	1,600	0.028 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	61	1,600	0.000	N-S(1):	0.255 *
	TH	1.00	222	1,600	0.139	N-S(2):	0.215
	LT	1.00	50	1,600	0.031 *	E-W(1):	0.417 *
Westbound	RT	0.00	51	0	0.000	E-W(2):	0.284
	TH	3.00	851	4,800	0.188		
	LT	1.00	66	1,600	0.041 *	V/C:	0.672
Northbound	RT	1.00	86	1,600	0.033	Lost Time:	0.100
	TH	1.00	359	1,600	0.224 *	ITS:	0.000
	LT	1.00	121	1,600	0.076		
Eastbound	RT	0.00	110	0	0.000	ICU:	0.772
	TH	3.00	1,693	4,800	0.376 *		
	LT	1.00	153	1,600	0.096	LOS:	C

* - Denotes critical movement

Future + Project with Corrective Action

Project Title: **Century Villages at Cabrillo**
Intersection: **11 - Harbor Av & Pacific Coast Hwy**
Description: **Future + Project (Corrective Action)**

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:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.20	16	320	0.049	N-S(1):	0.174 *
	TH	0.80	102	1,280	0.080	N-S(2):	0.088
	LT	1.00	224	1,600	0.140 *	E-W(1):	0.390 *
Westbound	RT	0.00	171	0	0.000	E-W(2):	0.372
	TH	3.00	1,603	4,800	0.370		
	LT	1.00	63	1,600	0.039 *	V/C:	0.564
Northbound	RT	1.00	86	1,600	0.034 *	Lost Time:	0.100
	TH	1.00	25	1,600	0.016	ITS:	0.000
	LT	1.00	13	1,600	0.008		
Eastbound	RT	0.00	28	0	0.000	ICU:	0.664
	TH	2.00	1,096	3,200	0.351 *		
	LT	1.00	3	1,600	0.002	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.43	23	694	0.029	N-S(1):	0.259 *
	TH	0.57	30	906	0.033	N-S(2):	0.061
	LT	1.00	131	1,600	0.082 *	E-W(1):	0.510 *
Westbound	RT	0.00	145	0	0.000	E-W(2):	0.283
	TH	3.00	1,176	4,800	0.275		
	LT	1.00	31	1,600	0.019 *	V/C:	0.769
Northbound	RT	1.00	298	1,600	0.177 *	Lost Time:	0.100
	TH	1.00	47	1,600	0.029	ITS:	0.000
	LT	1.00	44	1,600	0.028		
Eastbound	RT	0.00	19	0	0.000	ICU:	0.869
	TH	2.00	1,552	3,200	0.491 *		
	LT	1.00	12	1,600	0.008	LOS:	D

* - Denotes critical movement

APPENDIX E:
SIGNAL WARRANT ANALYSIS SHEETS

FEHR PEERS

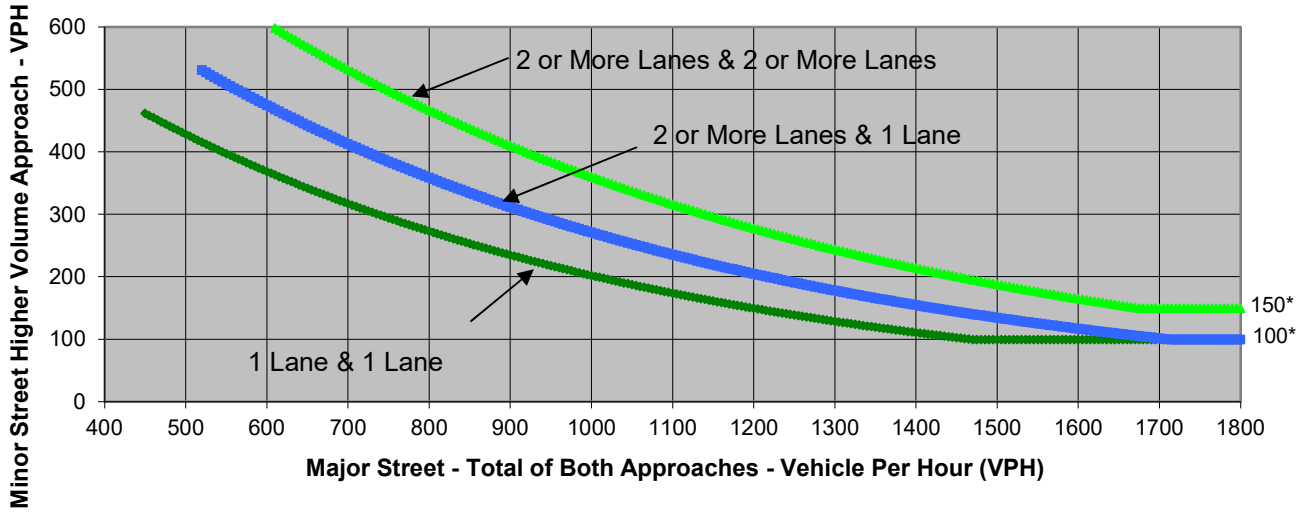
Major Street	SR-103 NB Ramps/20th Street	Project	Century Villages at Cabrillo
Minor Street	San Gabriel Avenue	Scenario	Baseline Conditions
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	29	13	31	7
Through	90	25	5	25
Right	3	34	186	15
Total	122	73	222	47

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	SR-103 NB Ramps/20th Street	San Gabriel Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**270**	**122**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	SR-103 NB Ramps/20th Street
Minor Street	San Gabriel Avenue

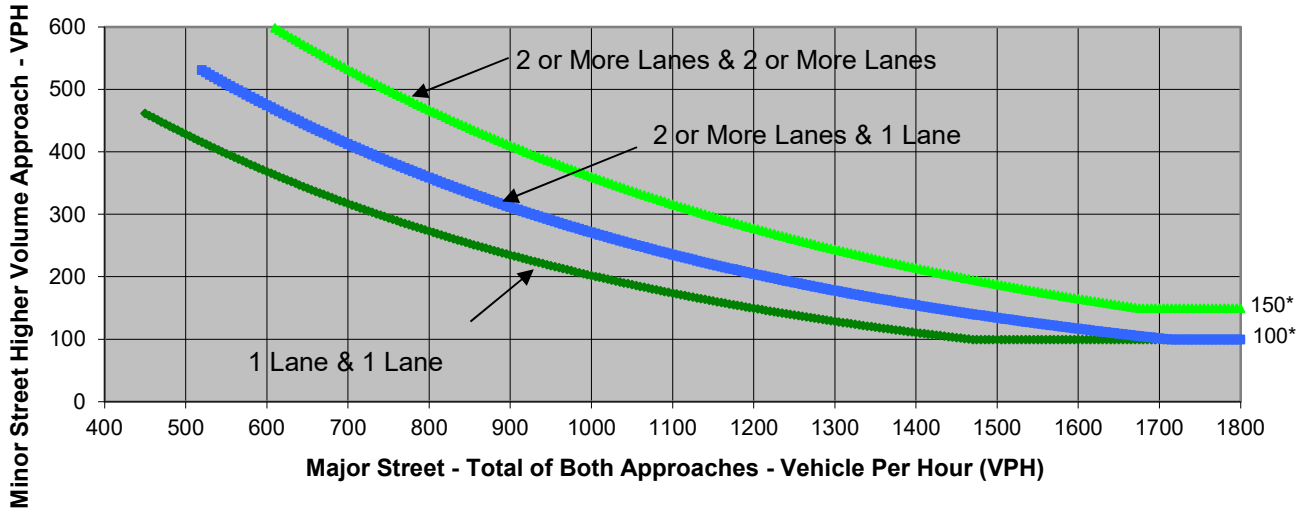
Project	Century Villages at Cabrillo
Scenario	Baseline Conditions
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	55	22	22	14
Through	63	30	12	31
Right	1	54	197	21
Total	118	106	231	67

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	SR-103 NB Ramps/20th Street	San Gabriel Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**298**	**118**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	SR-103 NB Ramps/20th Street
Minor Street	San Gabriel Avenue

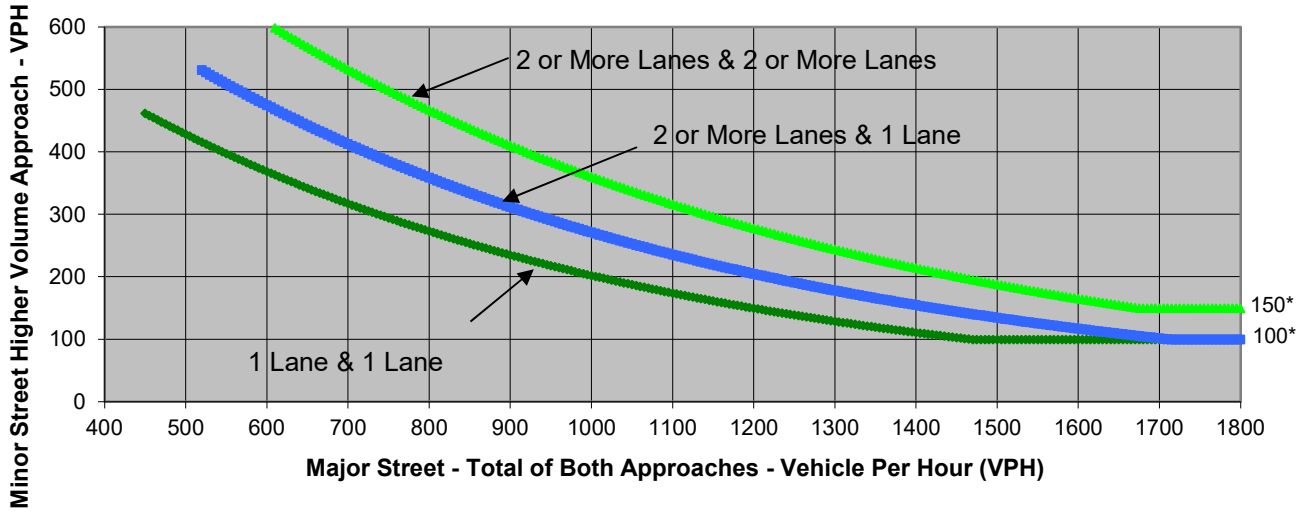
Project	Century Villages at Cabrillo
Scenario	Baseline + Project Conditions
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	29	28	35	7
Through	140	57	5	25
Right	3	79	186	100
Total	172	165	226	132

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	SR-103 NB Ramps/20th Street	San Gabriel Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**359**	**172**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	SR-103 NB Ramps/20th Street
Minor Street	San Gabriel Avenue

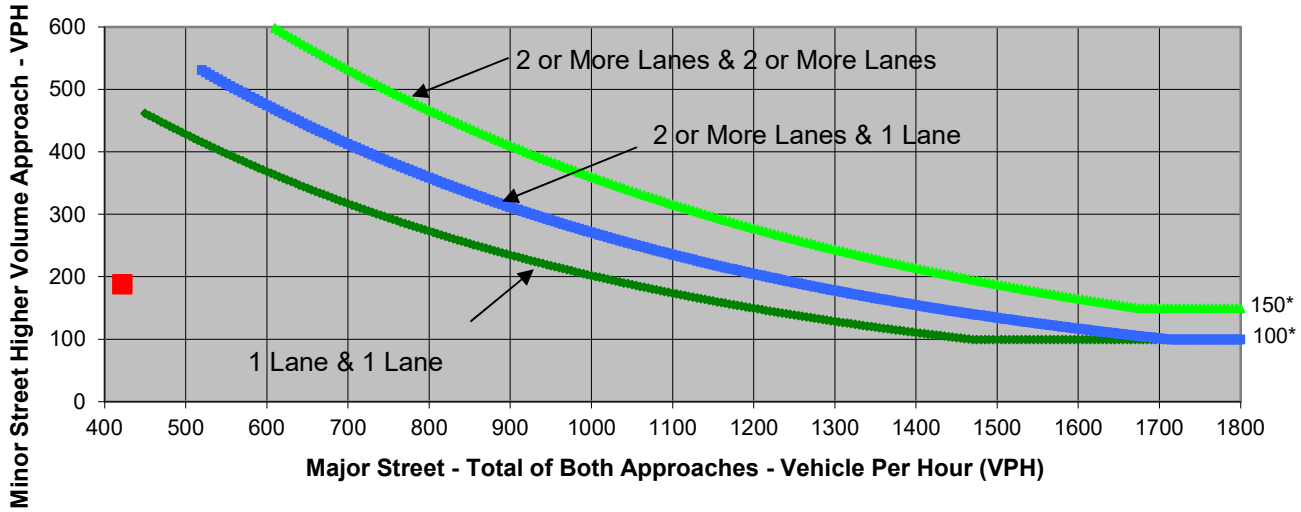
Project	Century Villages at Cabrillo
Scenario	Baseline + Project Conditions
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	55	35	28	14
Through	133	57	12	31
Right	1	92	197	139
Total	188	184	237	185

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	SR-103 NB Ramps/20th Street	San Gabriel Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**422**	**188**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

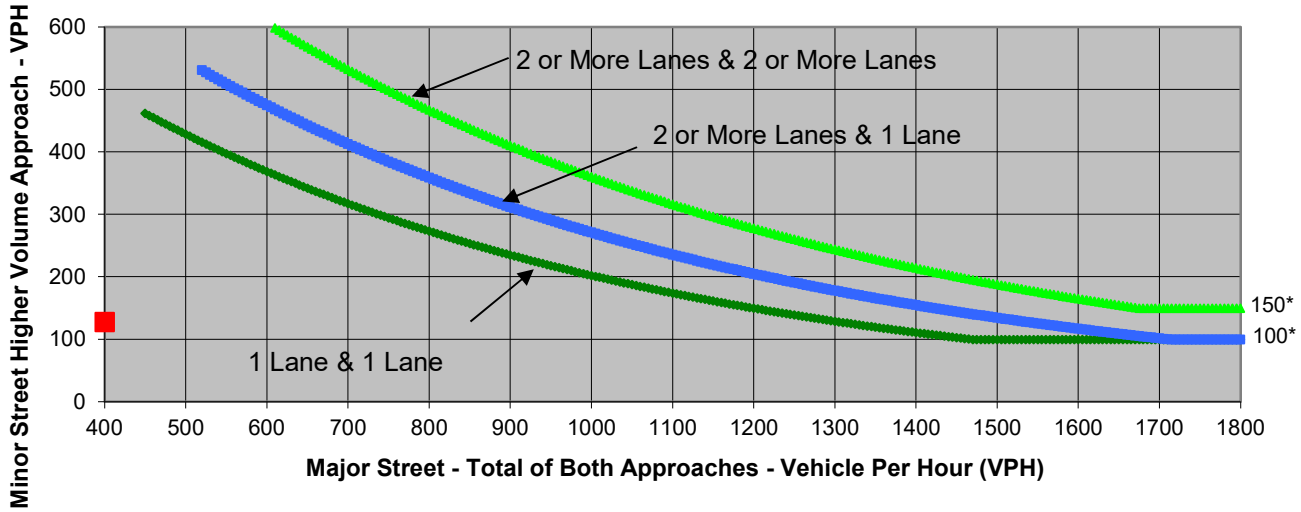
Major Street	SR-103 NB Ramps/20th Street	Project	Century Villages at Cabrillo
Minor Street	San Gabriel Avenue	Scenario	Future (2033) Base Conditions
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	30	14	32	7
Through	95	28	5	26
Right	3	37	310	20
Total	128	79	347	53

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	SR-103 NB Ramps/20th Street	San Gabriel Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**400**	**128**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	SR-103 NB Ramps/20th Street
Minor Street	San Gabriel Avenue

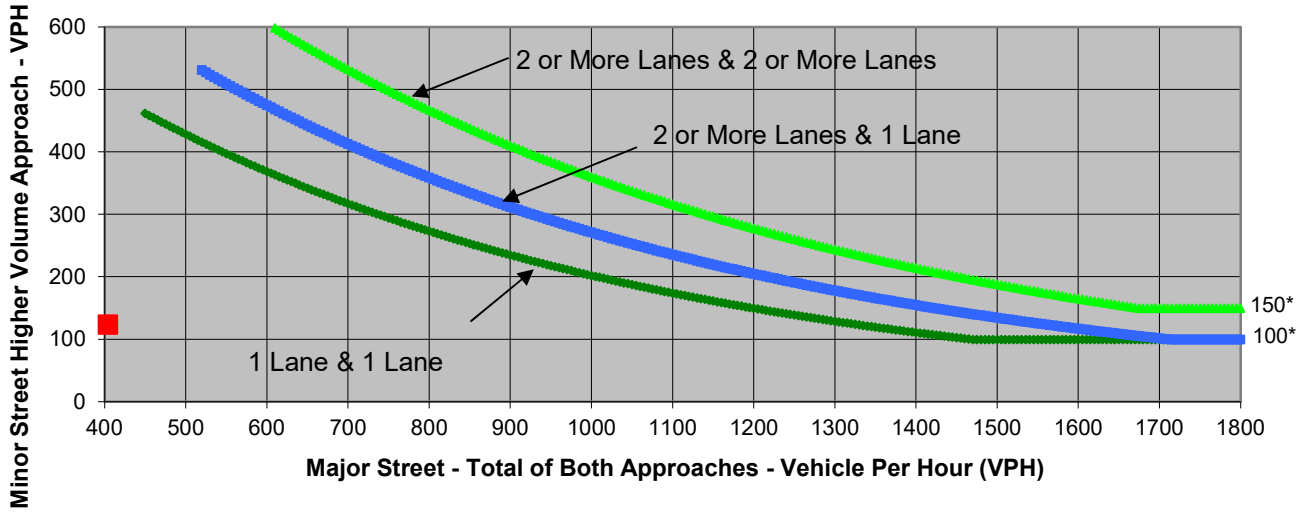
Project	Century Villages at Cabrillo
Scenario	Future (2033) Base Conditions
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	56	24	23	14
Through	67	32	12	32
Right	1	57	296	27
Total	124	113	331	73

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	SR-103 NB Ramps/20th Street	San Gabriel Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**404**	**124**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	SR-103 NB Ramps/20th Street
Minor Street	San Gabriel Avenue

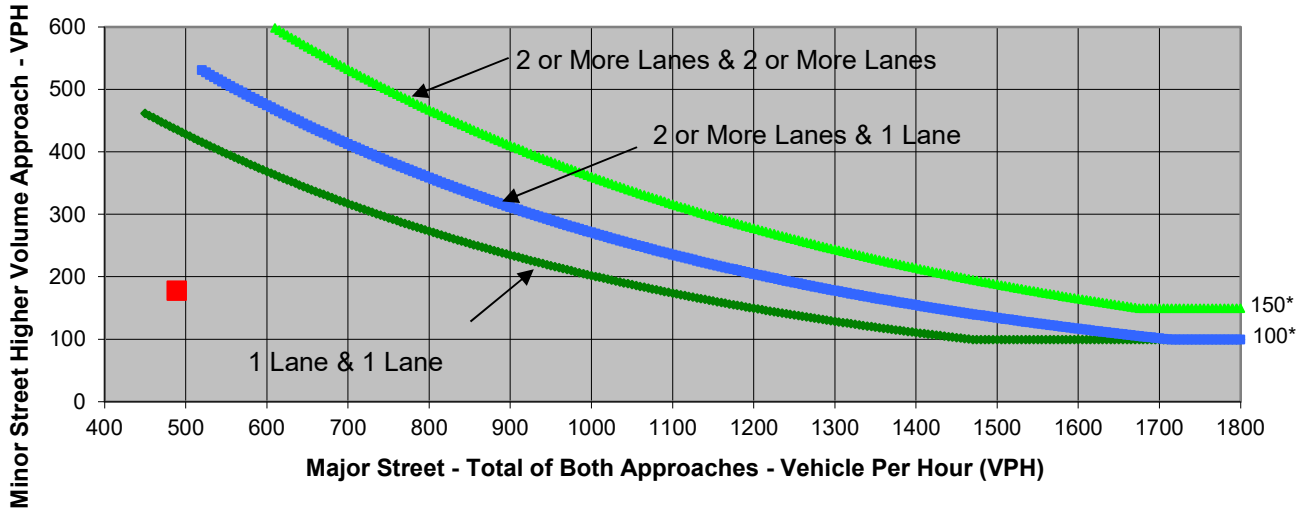
Project	Century Villages at Cabrillo
Scenario	Future + Project Conditions
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	30	29	36	7
Through	145	60	5	26
Right	3	82	310	105
Total	178	171	351	138

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	SR-103 NB Ramps/20th Street	San Gabriel Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**489**	**178**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

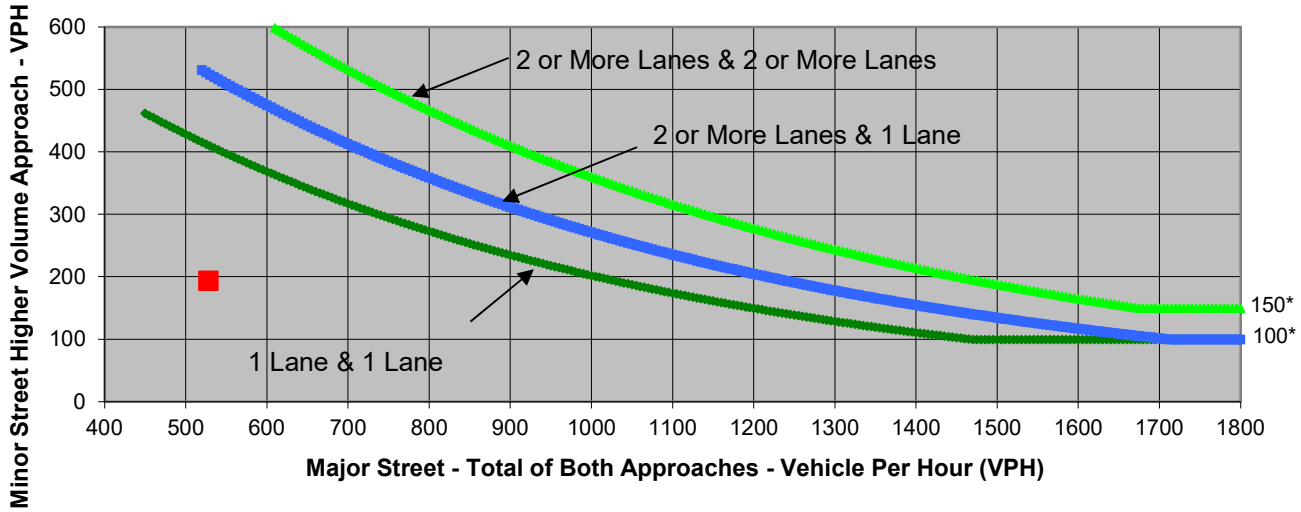
Major Street	SR-103 NB Ramps/20th Street	Project	Century Villages at Cabrillo
Minor Street	San Gabriel Avenue	Scenario	Future + Project Conditions
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	56	37	29	14
Through	137	59	12	32
Right	1	95	296	145
Total	194	191	337	191

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	SR-103 NB Ramps/20th Street	San Gabriel Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**528**	**194**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

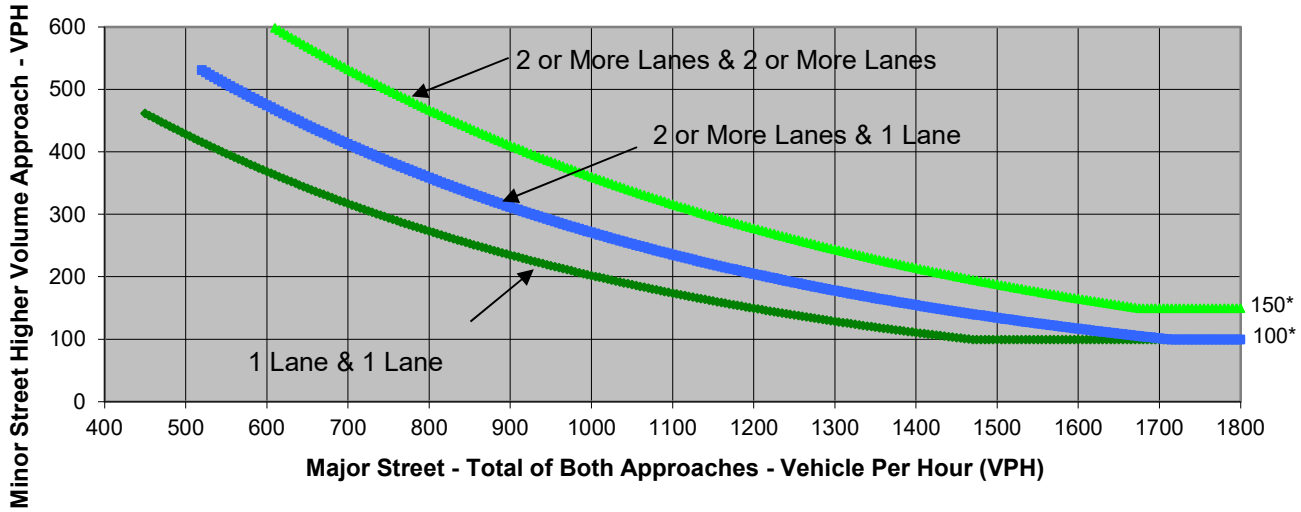
Major Street	20th Street	Project	Century Villages at Cabrillo
Minor Street	Technology Place/River Avenue	Scenario	Baseline Conditions
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	37	0	0	1
Through	0	21	0	0
Right	3	10	24	0
Total	40	31	24	1

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	20th Street	Technology Place/River Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**25**	**40**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

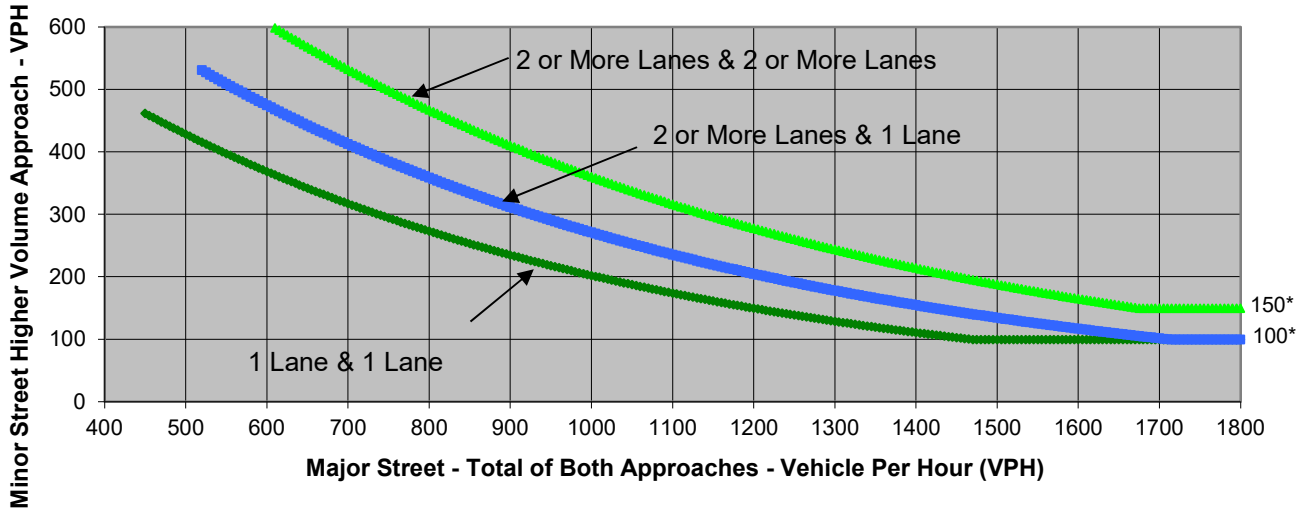
Major Street	20th Street	Project	Century Villages at Cabrillo
Minor Street	Technology Place/River Avenue	Scenario	Baseline Conditions
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	53	0	0	1
Through	0	33	0	2
Right	3	12	37	0
Total	56	45	37	3

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	20th Street	Technology Place/River Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**40**	**56**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	20th Street
Minor Street	Technology Place/River Avenue

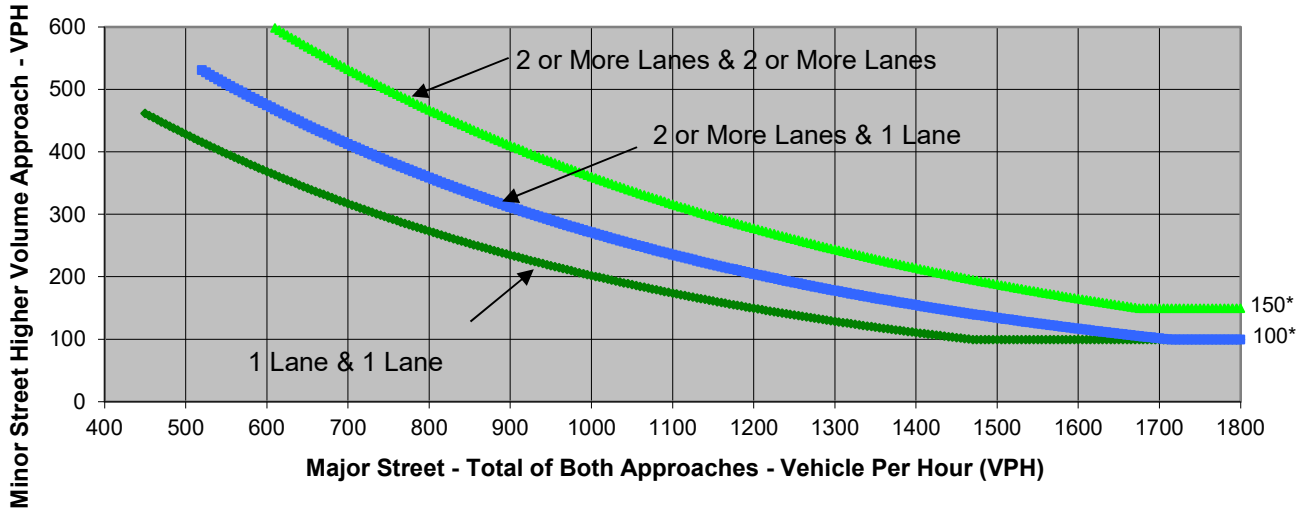
Project	Century Villages at Cabrillo
Scenario	Baseline + Project Conditions
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	122	0	0	1
Through	0	117	0	0
Right	3	10	39	0
Total	125	127	39	1

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	20th Street	Technology Place/River Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**40**	**127**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

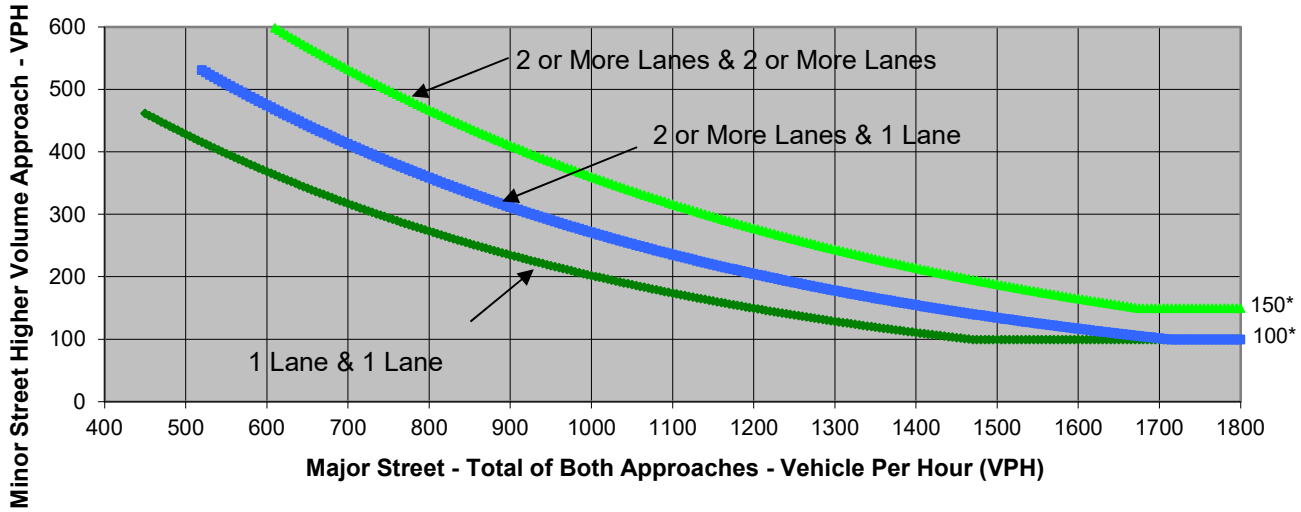
Major Street	20th Street	Project	Century Villages at Cabrillo
Minor Street	Technology Place/River Avenue	Scenario	Baseline + Project Conditions
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	171	0	0	1
Through	0	113	0	2
Right	3	12	50	0
Total	174	125	50	3

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	20th Street	Technology Place/River Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**53**	**174**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	20th Street
Minor Street	Technology Place/River Avenue

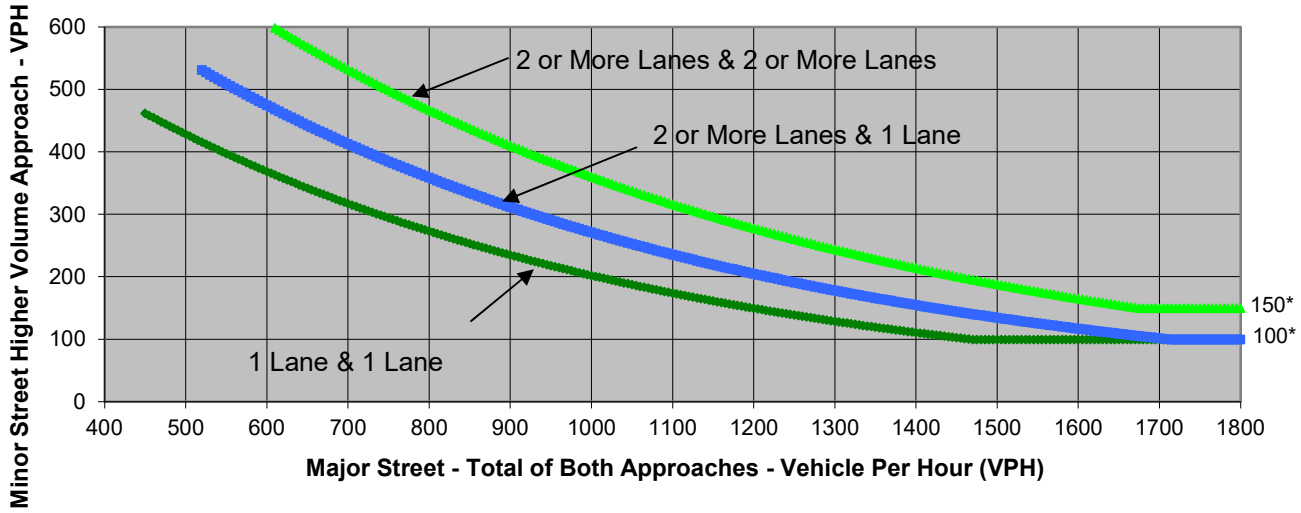
Project	Century Villages at Cabrillo
Scenario	Future (2033) Base Conditions
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	43	0	0	1
Through	0	27	0	0
Right	3	10	26	0
Total	46	37	26	1

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	20th Street	Technology Place/River Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**27**	**46**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	20th Street
Minor Street	Technology Place/River Avenue

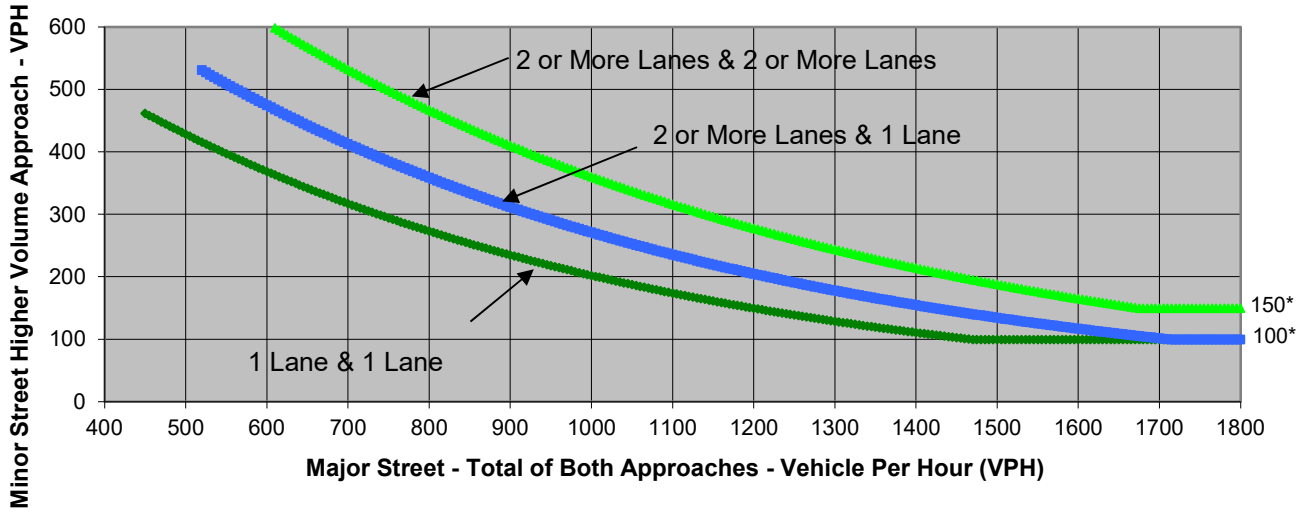
Project	Century Villages at Cabrillo
Scenario	Future (2033) Base Conditions
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	59	0	0	1
Through	0	38	0	2
Right	3	12	39	0
Total	62	50	39	3

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	20th Street	Technology Place/River Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**42**	**62**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	20th Street
Minor Street	Technology Place/River Avenue

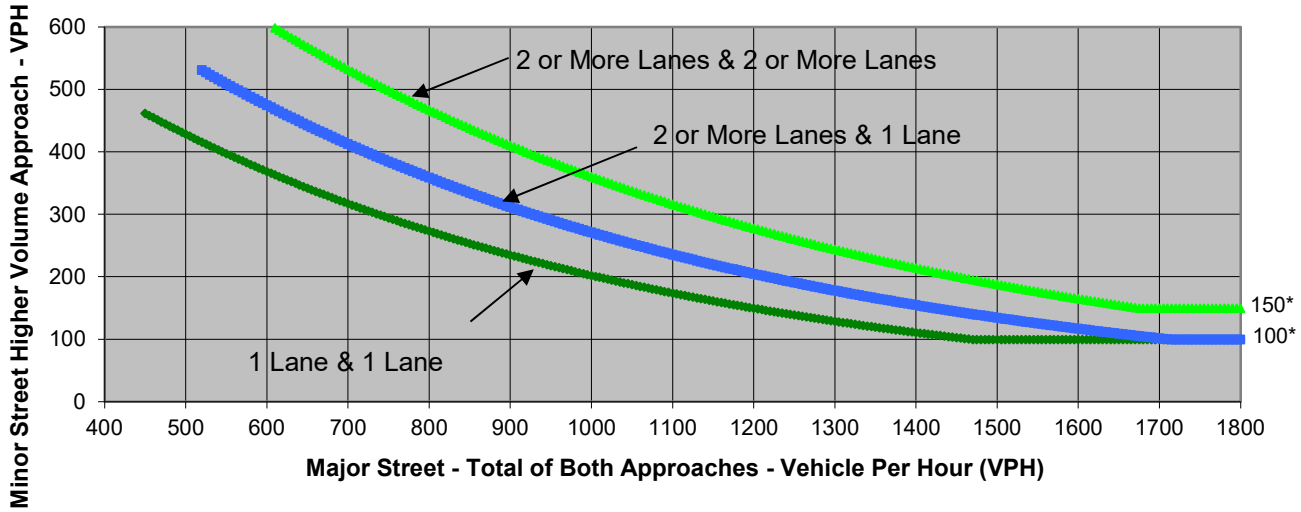
Project	Century Villages at Cabrillo
Scenario	Future + Project Conditions
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	128	0	0	1
Through	0	123	0	0
Right	3	10	41	0
Total	131	133	41	1

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	20th Street	Technology Place/River Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**42**	**133**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	20th Street
Minor Street	Technology Place/River Avenue

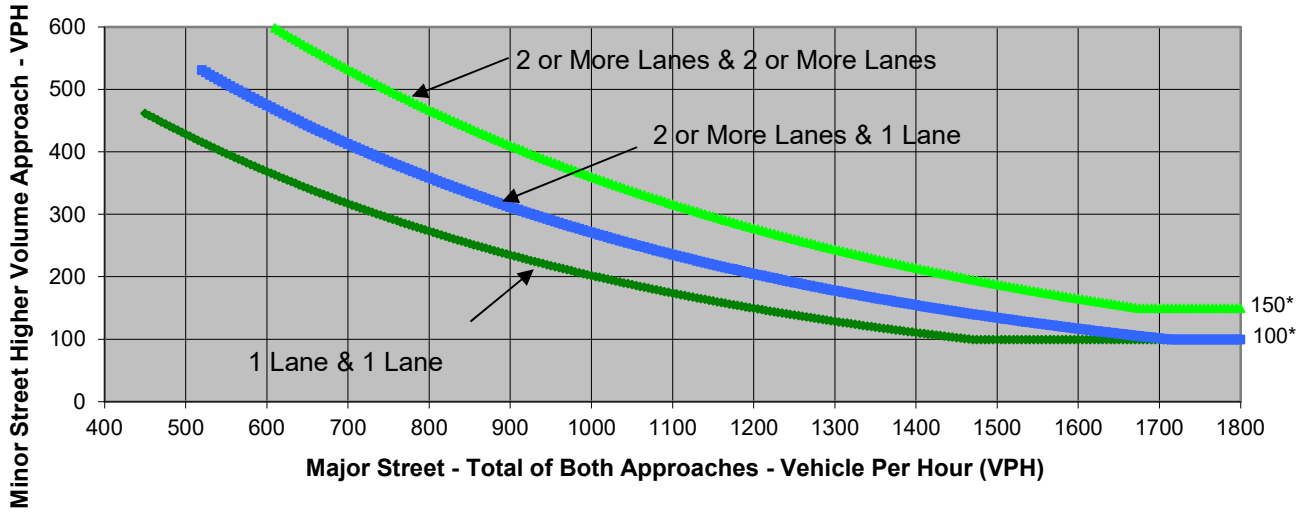
Project	Century Villages at Cabrillo
Scenario	Future + Project Conditions
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	177	0	0	1
Through	0	118	0	2
Right	3	12	52	0
Total	180	130	52	3

Major Street Direction

	North/South
x	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	20th Street	Technology Place/River Avenue	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**55**	**180**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

APPENDIX F:
OFF-RAMP QUEUEING ANALYSIS SHEETS

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	5	185	7	25	15	29	89	3	13	25	34
Future Vol, veh/h	31	5	185	7	25	15	29	89	3	13	25	34
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	33	5	195	7	26	16	31	94	3	14	26	36
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9	8.2	9.1	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	14%	15%	18%
Vol Thru, %	74%	2%	53%	35%
Vol Right, %	2%	84%	32%	47%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	121	221	47	72
LT Vol	29	31	7	13
Through Vol	89	5	25	25
RT Vol	3	185	15	34
Lane Flow Rate	127	233	49	76
Geometry Grp	1	1	1	1
Degree of Util (X)	0.176	0.278	0.066	0.1
Departure Headway (Hd)	4.97	4.3	4.81	4.76
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	721	835	744	752
Service Time	3.003	2.324	2.844	2.797
HCM Lane V/C Ratio	0.176	0.279	0.066	0.101
HCM Control Delay	9.1	9	8.2	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	1.1	0.2	0.3

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	24	1	0	0	37	0	3	0	21	10
Future Vol, veh/h	0	0	24	1	0	0	37	0	3	0	21	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	25	1	0	0	39	0	3	0	22	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.9	7.6	7.7	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	93%	0%	100%	0%
Vol Thru, %	0%	0%	0%	68%
Vol Right, %	7%	100%	0%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	24	1	31
LT Vol	37	0	1	0
Through Vol	0	0	0	21
RT Vol	3	24	0	10
Lane Flow Rate	42	25	1	33
Geometry Grp	1	1	1	1
Degree of Util (X)	0.052	0.026	0.001	0.037
Departure Headway (Hd)	4.416	3.735	4.554	4.089
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	813	953	782	876
Service Time	2.43	1.78	2.603	2.109
HCM Lane V/C Ratio	0.052	0.026	0.001	0.038
HCM Control Delay	7.7	6.9	7.6	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0	0.1

Intersection	
Int Delay, s/veh	65.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	0	1404	0	0	451
Future Vol, veh/h	0	0	1404	0	0	451
Conflicting Peds, #/hr	0	0	0	0	0	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	18	18	18	18	18	18
Mvmt Flow	0	0	1478	0	0	475

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	749
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.26
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.48
Pot Cap-1 Maneuver	0	-	-	0	0	~ 321
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 318
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	268.3
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	318
HCM Lane V/C Ratio	-	-	1.493
HCM Control Delay (s)	-	-	268.3
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	26.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	12	196	14	31	21	54	62	1	22	30	53
Future Vol, veh/h	22	12	196	14	31	21	54	62	1	22	30	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	23	13	206	15	33	22	57	65	1	23	32	56
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.3	8.5	9.3	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	46%	10%	21%	21%
Vol Thru, %	53%	5%	47%	29%
Vol Right, %	1%	85%	32%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	117	230	66	105
LT Vol	54	22	14	22
Through Vol	62	12	31	30
RT Vol	1	196	21	53
Lane Flow Rate	123	242	69	111
Geometry Grp	1	1	1	1
Degree of Util (X)	0.176	0.295	0.095	0.148
Departure Headway (Hd)	5.148	4.391	4.925	4.824
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	695	818	725	741
Service Time	3.194	2.425	2.971	2.872
HCM Lane V/C Ratio	0.177	0.296	0.095	0.15
HCM Control Delay	9.3	9.3	8.5	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	1.2	0.3	0.5

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	37	1	2	0	52	0	3	0	33	12
Future Vol, veh/h	0	0	37	1	2	0	52	0	3	0	33	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	39	1	2	0	55	0	3	0	35	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7	7.6	7.8	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	95%	0%	33%	0%
Vol Thru, %	0%	0%	67%	73%
Vol Right, %	5%	100%	0%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	37	3	45
LT Vol	52	0	1	0
Through Vol	0	0	2	33
RT Vol	3	37	0	12
Lane Flow Rate	58	39	3	47
Geometry Grp	1	1	1	1
Degree of Util (X)	0.072	0.041	0.004	0.055
Departure Headway (Hd)	4.473	3.789	4.485	4.164
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	801	934	790	859
Service Time	2.498	1.855	2.556	2.196
HCM Lane V/C Ratio	0.072	0.042	0.004	0.055
HCM Control Delay	7.8	7	7.6	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0	0.2

Intersection	
Int Delay, s/veh	56.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	0	1506	0	0	409
Future Vol, veh/h	0	0	1506	0	0	409
Conflicting Peds, #/hr	0	0	0	0	0	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	18	18	18	18	18	18
Mvmt Flow	0	0	1585	0	0	431

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	803
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.26
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.48
Pot Cap-1 Maneuver	0	-	-	0	0	~ 295
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 292
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	264
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	292
HCM Lane V/C Ratio	-	-	1.474
HCM Control Delay (s)	-	-	264
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	24

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	5	185	7	25	100	29	139	3	28	57	79
Future Vol, veh/h	35	5	185	7	25	100	29	139	3	28	57	79
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	37	5	195	7	26	105	31	146	3	29	60	83
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.2	9.3	10.5	9.9
HCM LOS	B	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	16%	5%	17%
Vol Thru, %	81%	2%	19%	35%
Vol Right, %	2%	82%	76%	48%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	171	225	132	164
LT Vol	29	35	7	28
Through Vol	139	5	25	57
RT Vol	3	185	100	79
Lane Flow Rate	180	237	139	173
Geometry Grp	1	1	1	1
Degree of Util (X)	0.268	0.318	0.192	0.245
Departure Headway (Hd)	5.366	4.835	4.982	5.11
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	662	737	711	694
Service Time	3.464	2.917	3.076	3.208
HCM Lane V/C Ratio	0.272	0.322	0.195	0.249
HCM Control Delay	10.5	10.2	9.3	9.9
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	1.1	1.4	0.7	1

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	39	1	0	0	122	0	3	0	117	10
Future Vol, veh/h	0	0	39	1	0	0	122	0	3	0	117	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	41	1	0	0	128	0	3	0	123	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.4	8.1	8.5	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	98%	0%	100%	0%
Vol Thru, %	0%	0%	0%	92%
Vol Right, %	2%	100%	0%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	39	1	127
LT Vol	122	0	1	0
Through Vol	0	0	0	117
RT Vol	3	39	0	10
Lane Flow Rate	132	41	1	134
Geometry Grp	1	1	1	1
Degree of Util (X)	0.167	0.048	0.001	0.161
Departure Headway (Hd)	4.561	4.23	5.079	4.331
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	782	852	709	821
Service Time	2.621	2.23	3.081	2.398
HCM Lane V/C Ratio	0.169	0.048	0.001	0.163
HCM Control Delay	8.5	7.4	8.1	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.2	0	0.6

Intersection	
Int Delay, s/veh	67.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	23	1408	6	0	458
Future Vol, veh/h	0	23	1408	6	0	458
Conflicting Peds, #/hr	0	0	0	0	0	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	18	18	18	18	18	18
Mvmt Flow	0	24	1482	6	0	482

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	751
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.26
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.48
Pot Cap-1 Maneuver	0	-	-	0	0	~ 320
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 317
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	280.2
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	317
HCM Lane V/C Ratio	-	-	1.521
HCM Control Delay (s)	-	-	280.2
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	27.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	12	196	14	31	139	54	132	1	35	57	91
Future Vol, veh/h	28	12	196	14	31	139	54	132	1	35	57	91
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	29	13	206	15	33	146	57	139	1	37	60	96
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11	10.4	11.5	10.8
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	12%	8%	19%
Vol Thru, %	71%	5%	17%	31%
Vol Right, %	1%	83%	76%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	187	236	184	183
LT Vol	54	28	14	35
Through Vol	132	12	31	57
RT Vol	1	196	139	91
Lane Flow Rate	197	248	194	193
Geometry Grp	1	1	1	1
Degree of Util (X)	0.315	0.356	0.284	0.293
Departure Headway (Hd)	5.763	5.155	5.274	5.471
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	624	698	680	657
Service Time	3.805	3.194	3.316	3.512
HCM Lane V/C Ratio	0.316	0.355	0.285	0.294
HCM Control Delay	11.5	11	10.4	10.8
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.3	1.6	1.2	1.2

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	50	1	2	0	170	0	3	0	113	12
Future Vol, veh/h	0	0	50	1	2	0	170	0	3	0	113	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	53	1	2	0	179	0	3	0	119	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.6	8.1	9.1	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	98%	0%	33%	0%
Vol Thru, %	0%	0%	67%	90%
Vol Right, %	2%	100%	0%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	173	50	3	125
LT Vol	170	0	1	0
Through Vol	0	0	2	113
RT Vol	3	50	0	12
Lane Flow Rate	182	53	3	132
Geometry Grp	1	1	1	1
Degree of Util (X)	0.232	0.064	0.004	0.16
Departure Headway (Hd)	4.591	4.351	5.081	4.385
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	774	828	708	805
Service Time	2.664	2.351	3.085	2.482
HCM Lane V/C Ratio	0.235	0.064	0.004	0.164
HCM Control Delay	9.1	7.6	8.1	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.2	0	0.6

Intersection	
Int Delay, s/veh	61.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↗
Traffic Vol, veh/h	0	0	1512	8	0	419
Future Vol, veh/h	0	0	1512	8	0	419
Conflicting Peds, #/hr	0	0	0	0	0	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	18	18	18	18	18	18
Mvmt Flow	0	0	1592	8	0	441

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	806
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.26
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.48
Pot Cap-1 Maneuver	0	-	-	0	0	~ 293
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 290
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	283.7
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	290
HCM Lane V/C Ratio	-	-	1.521
HCM Control Delay (s)	-	-	283.7
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	25.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	5	310	7	26	20	30	95	3	14	28	37
Future Vol, veh/h	32	5	310	7	26	20	30	95	3	14	28	37
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	34	5	326	7	27	21	32	100	3	15	29	39
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	8.5	9.7	8.9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	9%	13%	18%
Vol Thru, %	74%	1%	49%	35%
Vol Right, %	2%	89%	38%	47%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	347	53	79
LT Vol	30	32	7	14
Through Vol	95	5	26	28
RT Vol	3	310	20	37
Lane Flow Rate	135	365	56	83
Geometry Grp	1	1	1	1
Degree of Util (X)	0.198	0.44	0.077	0.118
Departure Headway (Hd)	5.301	4.332	4.991	5.104
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	674	829	714	698
Service Time	3.361	2.367	3.047	3.167
HCM Lane V/C Ratio	0.2	0.44	0.078	0.119
HCM Control Delay	9.7	10.8	8.5	8.9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.7	2.3	0.2	0.4

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	26	1	0	0	43	0	3	0	27	10
Future Vol, veh/h	0	0	26	1	0	0	43	0	3	0	27	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	27	1	0	0	45	0	3	0	28	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.9	7.6	7.7	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	93%	0%	100%	0%
Vol Thru, %	0%	0%	0%	73%
Vol Right, %	7%	100%	0%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	46	26	1	37
LT Vol	43	0	1	0
Through Vol	0	0	0	27
RT Vol	3	26	0	10
Lane Flow Rate	48	27	1	39
Geometry Grp	1	1	1	1
Degree of Util (X)	0.06	0.029	0.001	0.045
Departure Headway (Hd)	4.433	3.758	4.579	4.129
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	810	945	776	867
Service Time	2.451	1.81	2.637	2.153
HCM Lane V/C Ratio	0.059	0.029	0.001	0.045
HCM Control Delay	7.7	6.9	7.6	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0	0.1

Intersection	
Int Delay, s/veh	72.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	1	1434	0	0	461
Future Vol, veh/h	0	1	1434	0	0	461
Conflicting Peds, #/hr	0	0	0	0	0	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	18	18	18	18	18	18
Mvmt Flow	0	1	1509	0	0	485

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	765
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.26
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.48
Pot Cap-1 Maneuver	0	-	-	0	0	~ 313
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 310
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	299.9
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	310
HCM Lane V/C Ratio	-	-	1.565
HCM Control Delay (s)	-	-	299.9
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	28.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	12	296	14	32	27	56	67	1	24	32	57
Future Vol, veh/h	23	12	296	14	32	27	56	67	1	24	32	57
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	24	13	312	15	34	28	59	71	1	25	34	60
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	8.8	9.9	9.2
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	45%	7%	19%	21%
Vol Thru, %	54%	4%	44%	28%
Vol Right, %	1%	89%	37%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	331	73	113
LT Vol	56	23	14	24
Through Vol	67	12	32	32
RT Vol	1	296	27	57
Lane Flow Rate	131	348	77	119
Geometry Grp	1	1	1	1
Degree of Util (X)	0.197	0.43	0.109	0.169
Departure Headway (Hd)	5.43	4.438	5.086	5.111
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	655	808	699	696
Service Time	3.508	2.488	3.159	3.19
HCM Lane V/C Ratio	0.2	0.431	0.11	0.171
HCM Control Delay	9.9	10.8	8.8	9.2
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.7	2.2	0.4	0.6

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	39	1	2	0	59	0	3	0	38	12
Future Vol, veh/h	0	0	39	1	2	0	59	0	3	0	38	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	41	1	2	0	62	0	3	0	40	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	7.6	7.9	7.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	95%	0%	33%	0%
Vol Thru, %	0%	0%	67%	76%
Vol Right, %	5%	100%	0%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	39	3	50
LT Vol	59	0	1	0
Through Vol	0	0	2	38
RT Vol	3	39	0	12
Lane Flow Rate	65	41	3	53
Geometry Grp	1	1	1	1
Degree of Util (X)	0.081	0.043	0.004	0.061
Departure Headway (Hd)	4.484	3.812	4.509	4.188
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	799	927	785	853
Service Time	2.512	1.884	2.587	2.223
HCM Lane V/C Ratio	0.081	0.044	0.004	0.062
HCM Control Delay	7.9	7.1	7.6	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0	0.2

Intersection	
Int Delay, s/veh	63.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↗
Traffic Vol, veh/h	0	0	1538	0	0	418
Future Vol, veh/h	0	0	1538	0	0	418
Conflicting Peds, #/hr	0	0	0	0	0	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	18	18	18	18	18	18
Mvmt Flow	0	0	1619	0	0	440

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	820
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.26
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.48
Pot Cap-1 Maneuver	0	-	-	0	0	~ 287
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 284
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	296.5
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	284
HCM Lane V/C Ratio	-	-	1.549
HCM Control Delay (s)	-	-	296.5
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	25.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	5	310	7	26	105	30	145	3	29	60	82
Future Vol, veh/h	36	5	310	7	26	105	30	145	3	29	60	82
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	38	5	326	7	27	111	32	153	3	31	63	86
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.3	10	11.6	10.9
HCM LOS	B	A	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	10%	5%	17%
Vol Thru, %	81%	1%	19%	35%
Vol Right, %	2%	88%	76%	48%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	178	351	138	171
LT Vol	30	36	7	29
Through Vol	145	5	26	60
RT Vol	3	310	105	82
Lane Flow Rate	187	369	145	180
Geometry Grp	1	1	1	1
Degree of Util (X)	0.307	0.514	0.218	0.283
Departure Headway (Hd)	5.902	5.007	5.407	5.652
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	607	720	662	635
Service Time	3.949	3.046	3.457	3.697
HCM Lane V/C Ratio	0.308	0.512	0.219	0.283
HCM Control Delay	11.6	13.3	10	10.9
HCM Lane LOS	B	B	A	B
HCM 95th-tile Q	1.3	3	0.8	1.2

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	41	1	0	0	128	0	3	0	123	10
Future Vol, veh/h	0	0	41	1	0	0	128	0	3	0	123	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	43	1	0	0	135	0	3	0	129	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	8.1	8.6	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	98%	0%	100%	0%
Vol Thru, %	0%	0%	0%	92%
Vol Right, %	2%	100%	0%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	131	41	1	133
LT Vol	128	0	1	0
Through Vol	0	0	0	123
RT Vol	3	41	0	10
Lane Flow Rate	138	43	1	140
Geometry Grp	1	1	1	1
Degree of Util (X)	0.175	0.051	0.001	0.169
Departure Headway (Hd)	4.57	4.259	5.113	4.342
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	779	846	704	818
Service Time	2.635	2.259	3.115	2.413
HCM Lane V/C Ratio	0.177	0.051	0.001	0.171
HCM Control Delay	8.6	7.5	8.1	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.2	0	0.6

Intersection	
Int Delay, s/veh	76.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↗
Traffic Vol, veh/h	0	0	1438	6	0	468
Future Vol, veh/h	0	0	1438	6	0	468
Conflicting Peds, #/hr	0	0	0	0	0	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	18	18	18	18	18	18
Mvmt Flow	0	0	1514	6	0	493

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	767
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.26
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.48
Pot Cap-1 Maneuver	0	-	-	0	0	~ 312
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 309
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	$ 312.3
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	309
HCM Lane V/C Ratio	-	-	1.594
HCM Control Delay (s)	-	-	-$ 312.3
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	29.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	12	296	14	32	145	56	137	1	37	59	95
Future Vol, veh/h	29	12	296	14	32	145	56	137	1	37	59	95
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	31	13	312	15	34	153	59	144	1	39	62	100
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.9	11.2	12.5	11.8
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	9%	7%	19%
Vol Thru, %	71%	4%	17%	31%
Vol Right, %	1%	88%	76%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	194	337	191	191
LT Vol	56	29	14	37
Through Vol	137	12	32	59
RT Vol	1	296	145	95
Lane Flow Rate	204	355	201	201
Geometry Grp	1	1	1	1
Degree of Util (X)	0.349	0.519	0.312	0.328
Departure Headway (Hd)	6.158	5.267	5.583	5.866
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	582	681	639	609
Service Time	4.227	3.327	3.653	3.936
HCM Lane V/C Ratio	0.351	0.521	0.315	0.33
HCM Control Delay	12.5	13.9	11.2	11.8
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.6	3	1.3	1.4

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	52	1	2	0	177	0	3	0	118	12
Future Vol, veh/h	0	0	52	1	2	0	177	0	3	0	118	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	18	18	18	18	18	18	18	18	18	18	18	18
Mvmt Flow	0	0	55	1	2	0	186	0	3	0	124	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	8.1	9.2	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	98%	0%	33%	0%
Vol Thru, %	0%	0%	67%	91%
Vol Right, %	2%	100%	0%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	180	52	3	130
LT Vol	177	0	1	0
Through Vol	0	0	2	118
RT Vol	3	52	0	12
Lane Flow Rate	189	55	3	137
Geometry Grp	1	1	1	1
Degree of Util (X)	0.242	0.067	0.004	0.171
Departure Headway (Hd)	4.6	4.382	5.115	4.499
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	771	821	702	802
Service Time	2.681	2.389	3.127	2.499
HCM Lane V/C Ratio	0.245	0.067	0.004	0.171
HCM Control Delay	9.2	7.7	8.1	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.2	0	0.6

Intersection	
Int Delay, s/veh	68.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↗
Traffic Vol, veh/h	0	0	1544	8	0	428
Future Vol, veh/h	0	0	1544	8	0	428
Conflicting Peds, #/hr	0	0	0	0	0	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	18	18	18	18	18	18
Mvmt Flow	0	0	1625	8	0	451

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	823
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.26
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.48
Pot Cap-1 Maneuver	0	-	-	0	0	~ 285
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 282
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	$ 317.3
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	282
HCM Lane V/C Ratio	-	-	1.598
HCM Control Delay (s)	-	-	-$ 317.3
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	27.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

I-710 SB & PCH WB Off-Ramp

Intersection: 14: Pacific Coast Hwy (PCH) & I-710 SB Off-Ramp (WB PCH)

Movement	WB	WB	SB	B25
Directions Served	T	T	R	T
Maximum Queue (ft)	202	224	308	11
Average Queue (ft)	31	51	38	1
95th Queue (ft)	130	162	194	10
Link Distance (ft)	199	199	404	662
Upstream Blk Time (%)	0	1	0	
Queuing Penalty (veh)	2	5	0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14: Pacific Coast Hwy (PCH) & I-710 SB Off-Ramp (WB PCH)

Movement	EB	EB	WB	WB	SB
Directions Served	T	T	T	T	R
Maximum Queue (ft)	173	251	37	67	85
Average Queue (ft)	10	16	1	5	6
95th Queue (ft)	95	126	19	34	61
Link Distance (ft)	254	254	199	199	404
Upstream Blk Time (%)	0	0			
Queuing Penalty (veh)	0	1			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 14: Pacific Coast Hwy (PCH) & I-710 SB Off-Ramp (WB PCH)

Movement	EB	EB	WB	WB	SB	B25
Directions Served	T	T	T	T	R	T
Maximum Queue (ft)	22	47	209	241	312	18
Average Queue (ft)	1	2	38	54	38	0
95th Queue (ft)	22	35	148	173	193	9
Link Distance (ft)	254	254	199	199	404	662
Upstream Blk Time (%)		0	1	1	0	
Queuing Penalty (veh)		0	4	7	0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Pacific Coast Hwy (PCH) & I-710 SB Off-Ramp (WB PCH)

Movement	EB	EB	EB	WB	WB	SB
Directions Served	T	T	R	T	T	R
Maximum Queue (ft)	141	208	30	70	122	196
Average Queue (ft)	4	12	0	3	9	19
95th Queue (ft)	58	106	0	33	58	123
Link Distance (ft)	254	254	254	199	199	404
Upstream Blk Time (%)	0	0	0	0	0	
Queuing Penalty (veh)	0	1	0	0	0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Pacific Coast Hwy (PCH) & I-710 SB Off-Ramp (WB PCH)

Movement	EB	WB	WB	SB	B25
Directions Served	T	T	T	R	T
Maximum Queue (ft)	2	250	274	406	37
Average Queue (ft)	0	53	72	73	2
95th Queue (ft)	2	183	211	297	27
Link Distance (ft)	254	199	199	404	662
Upstream Blk Time (%)		1	2	1	
Queuing Penalty (veh)		7	12	0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 14: Pacific Coast Hwy (PCH) & I-710 SB Off-Ramp (WB PCH)

Movement	EB	EB	WB	WB	SB
Directions Served	T	T	T	T	R
Maximum Queue (ft)	131	192	36	59	166
Average Queue (ft)	5	9	2	4	14
95th Queue (ft)	62	89	21	32	106
Link Distance (ft)	254	254	199	199	404
Upstream Blk Time (%)	0	0			
Queuing Penalty (veh)	0	1			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 14: Pacific Coast Hwy (PCH) & I-710 SB Off-Ramp (WB PCH)

Movement	EB	EB	WB	WB	SB	B25
Directions Served	T	T	T	T	R	T
Maximum Queue (ft)	32	27	216	243	405	55
Average Queue (ft)	1	1	44	66	96	6
95th Queue (ft)	32	28	154	183	348	67
Link Distance (ft)	254	254	199	199	404	662
Upstream Blk Time (%)	0	0	0	1	2	
Queuing Penalty (veh)	0	0	2	7	0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Pacific Coast Hwy (PCH) & I-710 SB Off-Ramp (WB PCH)

Movement	EB	EB	WB	WB	SB
Directions Served	T	T	T	T	R
Maximum Queue (ft)	116	244	59	92	286
Average Queue (ft)	4	13	4	9	22
95th Queue (ft)	55	113	32	50	141
Link Distance (ft)	254	254	199	199	404
Upstream Blk Time (%)	0	0			
Queuing Penalty (veh)	0	1			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					