APPENDIX C TRANSPORTATION DOCUMENTATION

APPENDIX C1 TRANSPORTATION IMPACT ANALYSIS

The District at South Bay

2021 Project
Transportation Impact Analysis

Prepared for:
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LB20-0018

FEHR PEERS

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1. Introduction

This report documents the assumptions, methodologies, and findings of a transportation impact analysis conducted by Fehr & Peers to evaluate the potential transportation impacts of The District at South Bay Project (the "2021 Project") in the City of Carson, California, on a 157-acre site located southwest of the I-405 Freeway, northwest of the Avalon Boulevard interchange, and south of Del Amo Boulevard.[1] This study was conducted as part of a supplemental environmental impact report (SEIR) being prepared for the 2021 Project and compares the transportation impacts of the project to the 2018 SEIR project.

Project Description

The 2021 Project is proposed to be developed in the City of Carson in the South Bay area of Los Angeles County on a currently undeveloped site. It is located approximately 17 miles south of downtown Los Angeles and approximately 6.5 miles east of the Pacific Ocean. The Project site is comprised of approximately 157 acres located southwest of the San Diego Freeway (I-405), northwest of the Avalon Boulevard interchange, and south of Del Amo Boulevard. The Project site is bounded by the 11-acre parcel described above (and to the north of that parcel, by the Porsche Experience Center), the Torrance Lateral Flood Control Channel and residential uses to the south and west, and the I-405 Freeway to the east. **Figure 1** provides the 2021 Project site plan. The site plan is comprised of three planning areas: Planning Area 1 (PA-1), Planning Area 2 (PA-2), and Planning Area 3 (PA-3) as shown in **Figure 1**.

The 2021 Project constitutes a modification to the permitted land uses and development standards for a portion of the overall 157-acre area of land ("157 Acre Site") that is subject to The District at South Bay Specific Plan (the "2021 Specific Plan") project area. It is a modified version of the previously analyzed projects: Carson Marketplace (Year 2006) and the 2018 Project. Since the 2018 approval, the project description has been modified as described below.

[1] The District at South Bay Specific Plan regulates a 168-acre site, including the subject 157-acre former landfill site and 11 additional acres upon which a residential housing project is under development. The 2021 modified Project treats the 11-acre site (referred to as DD3) as a related project for purposes of CEQA.

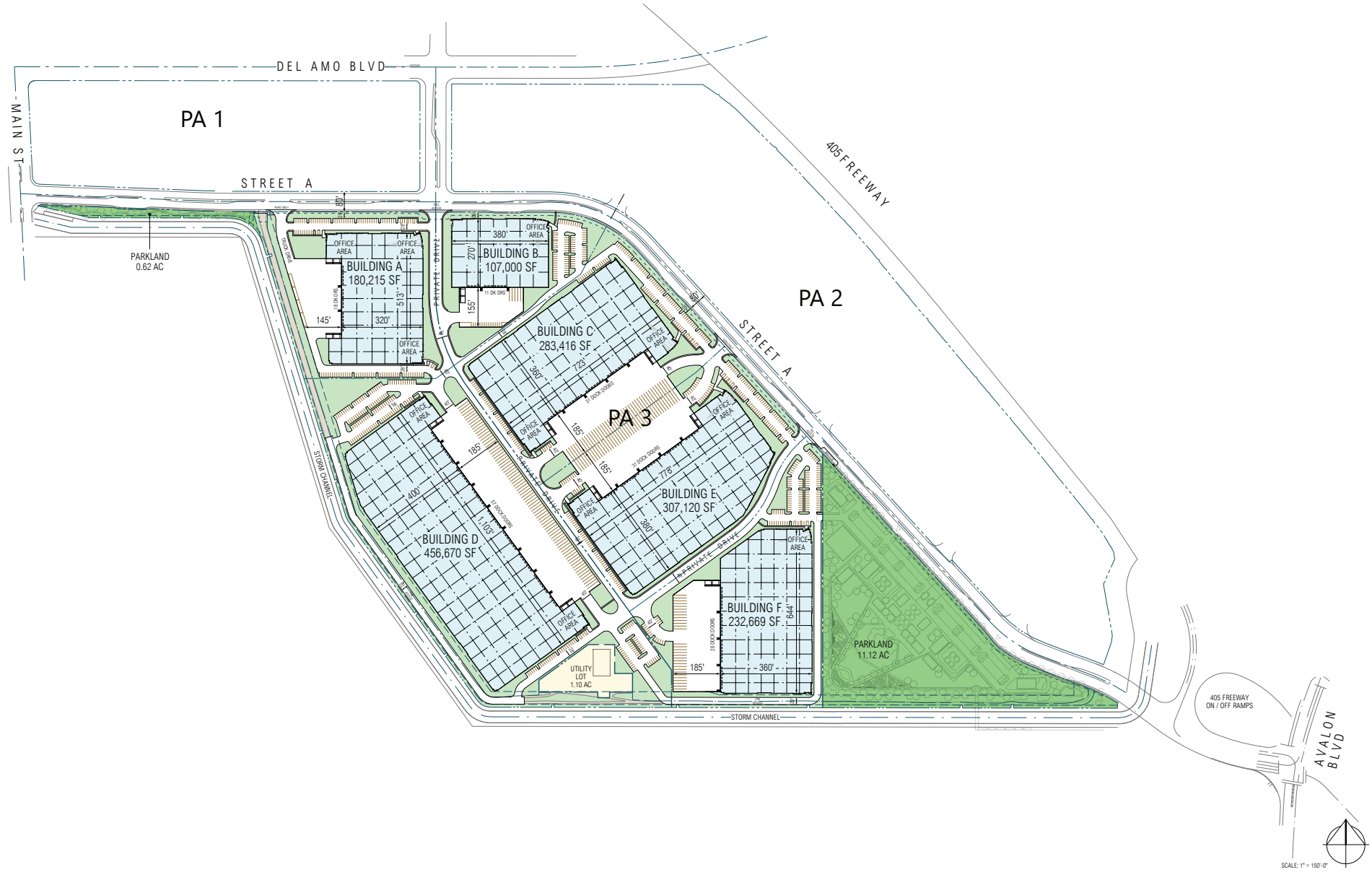

Image Source: Nadel Retail Architects, LLP

Figure 1

Site Plan

The 2021 Project[2] proposes to change the approved land uses within PA-3 and maintain the same land uses in PA-1 and PA-2 as the 2018 Project. The 2021 Project as analyzed in this study involves the following changes to the project description. New proposed land uses that vary from the 2018 Project for PA-3 are marked in **bold**.

- **10,000 gross leasable square feet (GLSF) of neighborhood serving commercial/retail**
- **23,800 GLSF of restaurant space including:**
    - **2,200 GLSF of sit-down restaurant/café**
    - **12,600 GLSF of restaurants with drive-thru capability**
    - **9,000 GLSF of food & beverage kiosks**
- **75,000 GLSF of office (ancillary to e-commerce/fulfillment center & distribution center/parcel hub uses)**
- **753,300 GLSF of e-commerce/fulfillment center warehouse space**
- **738,790 GLSF of distribution center/parcel hub warehouse space**
- **6.29 acres of park amenities/active and passive open spaces**

The following 2018 Project uses for PA-3 are proposed to be removed as part of the 2021 Project:

- 575,000 GLSF of regional serving commercial/retail
- 60,000 GLSF of neighborhood serving commercial/retail
- 350 hotel rooms
- 130,000 GLSF of commercial recreation/entertainment space
- 125,000 GLSF of sit-down restaurant/café

The following 2018 Project uses for PA-1 and PA-2 are maintained in the 2021 Project and are summarized below for reference:

- 1,250 multifamily residential units
- 581,020 GLSF of luxury outlet shops
- 15,000 GLSF of sit-down restaurant/café

Two new internal roadways will serve as the primary routes through the Project site, referred to as Street A (Lenardo Drive) and Street B (Stamps Drive). As with the 2018 Project, internal roadways will be comprised of a combination of both publicly and privately owned and maintained streets. Street A and portions of Street B will be publicly dedicated, as necessary.

[2] ITE recommended trip generation rates for commercial retail are based on gross leasable area.

As with the 2018 Project, three main signalized access points for the Project site will be located at the intersection of Del Amo Boulevard and Street B; the intersection of Main Street and Street A; and the Avalon Boulevard exit from the I-405 Freeway. Two additional stop-controlled right-in/right-out entries will be located on Del Amo Boulevard. A private access road is also proposed around the southern/western boundary of the Project site, with easements for operations, maintenance and emergency vehicles.

Study Scope

The scope of work for this study was determined in conjunction with the City of Carson's Planning and Transportation Engineering staff. Two key regulatory frameworks that govern the required analyses within the State of California and Los Angeles County have changed since the 2018 Project:

- Senate Bill (SB) 743 – On September 27, 2013, California Governor Jerry Brown signed SB 743 into law and started a process to fundamentally change transportation impact analysis conducted as part of California Environmental Quality Act (CEQA) compliance. The Governor's Office of Planning and Research (OPR) issued proposed updates to the CEQA guidelines in support of these goals in November 20173 and a supporting technical advisory in December 20184. The updates establish vehicle miles traveled (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. Lead agencies, including the City of Carson, as of July 2020, are required to follow these new requirements. This study follows the State guidance for determining transportation impacts in accordance with SB 743. Since the City of Carson has not yet adopted its own VMT metrics and thresholds, this study is consistent with the approach provided in the OPR Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018) and interim City guidance based on discussions with City staff.

- Metro Congestion Management Program (CMP) for Los Angeles County— Metro, the local CMP agency, had established an approach to implement the statutory requirements of the CMP. With the adoption of SB 743 and local agencies revisiting their transportation analysis approaches, enough cities with sufficient population to disband the CMP framework voted to do so through individual council actions. These actions were shared with Metro and the CMP is no longer in effect and does not apply for this project. As a result, CMP analyses have been removed from the analysis of the 2021 Project.

Transportation Impact Analysis

Based on the changes to CEQA associated with SB 743, the following CEQA impact areas will be studied for the 2021 Project:

- Vehicle Miles Travelled

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

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

- Programs, Plans, Ordinances and Policies Consistency
- Geometric Design Features and Incompatible Uses
- Emergency Access

Freeway safety analysis related to off-ramp queueing has also been prepared.

Organization of Report

This report is divided into 4 chapters, including this introduction. Chapter 2 describes the existing conditions including an inventory of the streets, highways, and transit service in the study area. Chapter 3 presents the transportation impact analysis for the 2021 Project, including the evaluation methodologies, thresholds of significance and the impact analysis for the 2021 Project. Chapter 4 provides a summary of the findings of this report.

2. Existing Conditions

A comprehensive data collection effort was undertaken to develop a detailed description of existing conditions 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 in the vicinity of the Project site, the current transit service and the pedestrian and bicycle conditions in the study area. A detailed description of these elements is presented in this chapter.

Study Area

The Project site is within the City of Carson. The study area selected for analysis extends to include Avalon Boulevard to the east, Vermont Avenue to the west, the I-405 Freeway to the north, and Carson Street to the south. The streets in the study area are under the jurisdiction of the City of Carson, City of Los Angeles, and Los Angeles County.

Existing Street System

The Project site is located south of Del Amo Boulevard and north of the Avalon Boulevard interchange. I-405 and the Harbor Freeway (I-110) provide the primary regional access to the Project site.

Major arterials serving the study area include Del Amo Boulevard, Torrance Boulevard, and Carson Street in the east/west direction and Vermont Avenue, Figueroa Street, Main Street, and Avalon Boulevard in the north/south direction.

The characteristics of the freeways and major roadways serving the study area are described below.

Freeways

- **Interstate 405** runs in a northwest/southeast direction, extending from the I-5 in Irvine, and runs northwest into the San Fernando Valley. In the study area, the freeway provides four lanes and one carpool lane in each direction plus auxiliary lanes. Ramps are provided at Carson Street, Avalon Boulevard, and Main Street.

- **Interstate 110** runs in the north/south direction, extending from San Pedro to downtown Los Angeles. In the study area, the Harbor Freeway provides four lanes in each direction plus auxiliary lanes. Ramps are provided at Figueroa Street and Hamilton Avenue.

East/West Streets

- **Del Amo Boulevard** is classified as a Major Highway in the City of Carson's General Plan, Transportation and Infrastructure Element and runs in the east/west direction north of the Project site with two to three travel lanes in each direction within the study area. Parking is permitted along portions of the roadway on both sides of the street between Vermont Avenue and Hamilton Avenue. Left-turn pockets are present at major intersections. Del Amo Boulevard west of the I-110 is under the jurisdiction of Los Angeles County.

- **Torrance Boulevard** is classified as a Secondary Highway and runs in the east/west direction west of the Project site with one to two travel lanes in each direction and a center turn lane. Parking is

permitted on the westbound side of the street, from Main Street to Figueroa Street and permitted on both sides of the street east of Main Street. Left-turn pockets are present at major intersections. Torrance Boulevard west of the I-110 is under the jurisdiction of Los Angeles County.

- **213th Street** is designated as a Collector and runs in the east/west direction south of the Project site with one travel lane in each direction. Parking is permitted on both sides of the street.

- **Carson Street** is classified as a Major Highway and runs in the east/west direction south of the Project site with two travel lanes in each direction through the majority of the study area. Parking is generally permitted on both sides of the street and left-turn pockets are present at major intersections. Carson Street west of the I-110 is under the jurisdiction of Los Angeles County.

North/South Streets

- **Vermont Avenue** runs in the north/south direction west of the Project site in unincorporated Los Angeles County south of Del Amo Boulevard and in the City of Los Angeles north of Del Amo Boulevard. Vermont Avenue has two travel lanes in each direction with a center turn lane. Parking is generally permitted on both sides of the street and left-turn pockets are present at major intersections.

- **Hamilton Avenue** runs in the north/south direction west of the Project site in unincorporated Los Angeles County south of Del Amo Boulevard and in the City of Los Angeles north of Del Amo Boulevard. Hamilton Avenue has two travel lanes in each direction and left-turn pockets are present at major intersections.

- **Figueroa Street** is classified as a Major Highway and runs west of the Project site with two travel lanes in each direction with a center turn lane present in some parts of the street. Parking is generally permitted on both sides of the street and left-turn pockets are present at major intersections.

- **Main Street** is classified as a Major Highway and runs in the north/south direction west of the Project site with two travel lanes in each direction with a center turn lane present in some parts of the street. Parking is generally permitted on both sides of the street and left-turn pockets are present at major intersections.

- **Avalon Boulevard** is classified as a Major Highway and runs in the north/south direction east of the Project site with three travel lanes in each direction. Parking is not permitted within the study area. Left-turn pockets are present at major intersections.

Existing Public Transit Service

The Project site is served by a moderate level of public transit. **Figure 2** shows the various municipal bus routes, rapid bus routes, and circulators providing service in the study area. The Project is directly adjacent to the Carson Circuit North South Shuttle Line on Main Street. Three local Metro (Routes 205, 246/45, 550), the Metro Silver Line, four Torrance Transit (1, 3, R3, 4), eight Carson Circuit (A, B, C, D, E, G, S), and one Commuter Express (Route 448) bus routes provide service within the study area. **Table 1** details the transit service near the Project site.

Existing Bicycle and Pedestrian Facilities

Figure 3 shows existing bicycle facilities in the study area. As shown in the figure, the study area has a limited existing bikeway network which includes a Class II bike lane in each direction on Vermont Avenue, on Del Amo Boulevard east of Avalon Boulevard, and on Avalon Boulevard north of Del Amo Boulevard. There is also a Class III bike route on Dolores Street south of 213th Street and on Turmont Street. The study area generally has a mature network of 8-foot sidewalks throughout but lacks in other pedestrian facilities such as 4-way crosswalks, countdown signals, and other safety features.

There are a number of bike lanes and bike routes planned throughout the study area including an extension of the bike path along the Dominguez Channel, east of the I-405. There are also two planned bicycle facilities included as part of the Project: a Class II bike lane on Street "B" and a Class I bike path on Street "A". Proposed bicycle facilities are also shown in **Figure 3**. The proposed facilities come from three sources including the City of Los Angeles *Mobility Plan 2035*, which identifies corridors proposed to receive improved bicycle, pedestrian and vehicle infrastructure improvements, the City of Carson Master Plan of Bikeways, and Metro's Active Transportation Strategic Plan.

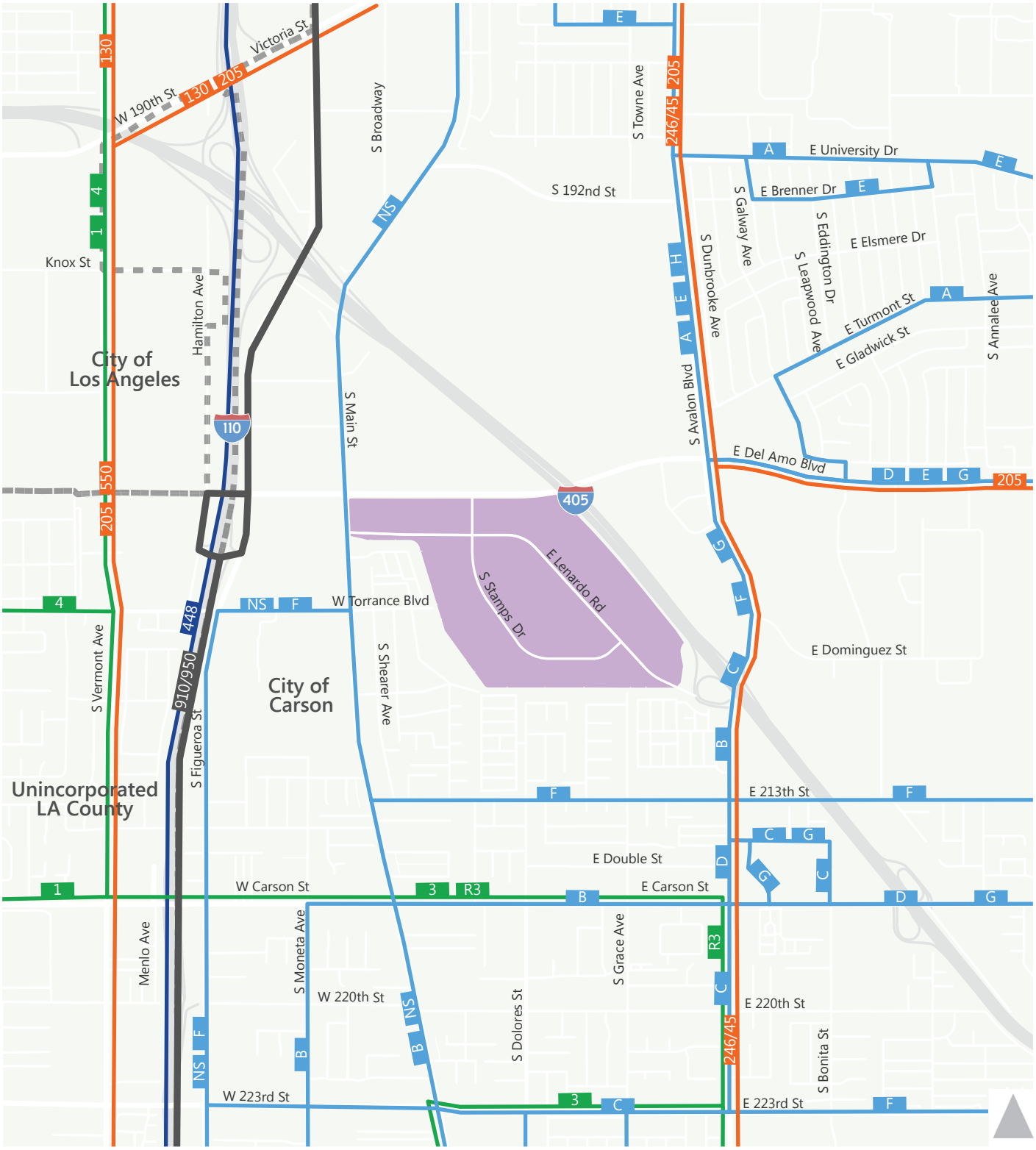

Figure 2

Existing Transit

TABLE 1
THE DISTRICT AT SOUTH BAY PROJECT
EXISTING TRANSIT SERVICE

Transit Route	Operator	Service Type	Service From	Via	Weekday Headways	
					AM	PM
S (North South Shuttle)	Carson Circuit	Shuttle & Circulator	Artesia Transit Center	Figueora St and Main St	50 min	-
A	Carson Circuit	Shuttle & Circulator	South Bay Pavilion to Cal State Dominguez Hills	Avalon Blvd	40 min	40 min
B	Carson Circuit	Shuttle & Circulator	South Bay Pavilion to Carson High School	Avalon Blvd and Carson St	40 min	40 min
C	Carson Circuit	Shuttle & Circulator	South Bay Pavilion to Carson Civic Center	Avalon Blvd	40 min	40 min
D	Carson Circuit	Shuttle & Circulator	South Bay Pavilion to Del Amo & Wilmington	Avalon Blvd, Del Amo Blvd, Carson St	40 min	40 min
E	Carson Circuit	Shuttle & Circulator	South Bay Pavilion to Home Depot Center	Avalon Blvd and Del Amo Blvd	40 min	40 min
G	Carson Circuit	Shuttle & Circulator	South Bay Pavilion to Del Amo & Wilmington	Avalon Blvd, Del Amo Blvd, Carson St	40 min	40 min
205	Metro	Local	San Pedro to Willowbrook	Vermont Ave	20-30 min	30-50 min
246/45	Metro	Local	San Pedro to Harbor Transit Gateway Center	Avalon Blvd	20-30 min	30-40 min
550	Metro	Local	San Pedro to Exposition Park	Vermont Ave	45 min	40 min
Silver Line (950)	Metro	Busway	San Pedro to El Monte	Figueroa St and I-110 Fwy	5 min	5 min
1	Torrance Transit	Local	Harbor Transit Gateway Center to Del Amo Fashion Center	Vermont Ave	40 min	40 min
3	Torrance Transit	Local	Redondo Beach Pier to Downtown Long Beach	Carson St	25 min	20-25 min
R3	Torrance Transit	Rapid	South Bay Galleria to Downtown Long Beach	Carson St and Avalon Blvd	10-20 min	20-30 min
4	Torrance Transit	Commuter Express	Torrance to Union Station	Vermont Ave	60-75 min	30-60 min
448	LADOT	Commuter Express	Rancho Palos Verdes to Downtown Los Angeles	I-110 Fwy	15-25 min	15-30 min

Figure 3

Existing and Planned Bicycle Facilities

3. Transportation Impact Analysis

SB 743 Overview

On September 27, 2013, California 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 20175 and a supporting technical advisory in December 20186. The updates establish 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. Lead agencies, including the City of Carson, have until July 2020 to implement these new requirements.

The City of Carson has not yet adopted new significance thresholds for transportation impacts based on VMT and has not yet revised its transportation impact assessment processes and guidelines accordingly. In lieu of City guidelines, VMT analysis based on the standard OPR guidance and interim City guidance based on discussions with City staff was conducted for the Project.

VMT Analysis

The OPR technical advisory describes the four components of a VMT analysis necessary to comply with the new CEQA guidelines. Since the Project includes a mix of land uses with multiple primary components – residential, commercial and industrial – the Project is assessed based on the difference in total VMT per service population[7] with and without the Project. This approach allows for a direct comparison of VMT effects between the 2021 Project and the 2018 Project.

1. **VMT Screening & Qualitative Review:** The first step is to determine when a VMT analysis is required. OPR recommends that projects 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. OPR recommends that VMT

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

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

[7] Service population is the total count of residents and employees for all on-site uses

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. VMT for mixed-use projects including resident, employee, visitor and heavy truck trips can be reported as "Total VMT" per service population.

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. Total VMT includes these two trip purposes, as well as non-home based VMT for all users of a land use, including visitors and heavy truck trips. However, for the purposes of CEQA, total VMT does not include construction heavy truck trips associated with a project. As described in the OPR advisory, using VMT as the primary significant impact metric for transportation is intended to address regional and local imbalances in the mix of residential uses, employment centers and retail uses, and is therefore focused on the effects of a project's operations on travel behavior post-construction. CEQA addresses the potential environmental impacts of construction through the air quality, health risk assessment, and noise analyses.

The Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) trip-based model was used to estimate the baseline VMT for the City of Carson. The current SCAG model has a 2012 base year, a 2016 scenario and 2040 (the horizon year of the 2016 RTP/SCS SCAG Model) as the forecast year. The VMT analysis for this project is based on year 2016 results. This baseline VMT methodology includes vehicle trips within the SCAG model to generate the following metric, per the OPR advisory:

Total VMT per Service Population: All daily vehicle trips generated by the Project's land uses (post-construction) are counted and divided by the Project's total service population. This metric is used to estimate total daily VMT per service population for the Project's combined land uses.

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. OPR recommends that projects with VMT exceeding 15 percent below existing VMT per capita or per employee when compared to a regional or citywide average of these metrics may indicate project impacts. For mixed-use projects, OPR generally recommends analyzing each land use individually, focusing on the VMT per capita or per employee metrics of each land use. However, these performance metrics do not include visitor or heavy truck trips. Since the 2021 Project includes a substantial amount of visitor and heavy truck trips, focusing on VMT per capita or per employee would exclude a substantial portion of the overall VMT. As described in Section 15151 of the CEQA guidelines, CEQA environmental analyses are required to reflect a "good faith effort at full disclosure." Total VMT per service population is the standard performance metric used to assess the overall VMT impact of a mixed-use project since it includes all VMT trip types and land use types. Service population is the total count of residents and employees for all such project uses.

   Following guidance from OPR[8], the City of Carson identified a threshold of 15 percent below existing citywide total VMT per service population as the threshold that would be appropriate to apply to the Project. If the Project would generate VMT higher than the threshold, then it would be

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

expected to have a VMT impact, and if the Project would generate VMT lower than the threshold, then it would not be expected to have a VMT impact. The City's baseline VMT and VMT impact threshold, derived from the 2016 RTP/SCS SCAG model, are summarized in **Table 2**.

TABLE 2 – CITY OF CARSON BASELINE VMT AND VMT IMPACT THRESHOLDS FOR TOTAL VMT

VMT Metrics	Baseline VMT	VMT Impact Threshold*
2016 – Total Citywide VMT per Service Population	38.2	32.5

* The VMT Impact Threshold is 15 percent below the Baseline VMT.

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 TDM measures.

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 short 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, OPR has provided guidance related to several opportunities for screening projects that would generate low VMT as described in this chapter.

Project Type Screening

Projects that generate less than 110 daily trips may be screened from conducting a VMT analysis. Local serving commercial uses less than 50,000 square feet may also be presumed to have a less than significant VMT impact absent substantial evidence to the contrary. This is because local serving commercial generally improves the convenience of shopping and dining close to home and has the effect of reducing vehicle travel.

The 2021 Project will generate well over 110 daily trips and is regional in scope, and therefore cannot be screened from VMT analysis due to project type.

Low VMT Area Screening

Residential and employment projects located within a low VMT generating area 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 Carson, is the most appropriate model to use for VMT forecasting within the City of Carson. This analysis used the SCAG model to measure the VMT performance for the Project's

traffic analysis zone (TAZ) during Base Year 2016 (the most recently adopted SCAG base year[9]) conditions. TAZs are geographic polygons similar to Census block groups used to represent areas of homogenous travel behavior.

Low VMT areas for residential projects are defined as TAZs that generate VMT on a per capita basis that are at least 15% lower than the citywide average. Low VMT areas for employment projects are defined as TAZs that generate VMT on a per employee basis that are at least 15% lower than the citywide average.

Since the Project is assessed based on total VMT per service population rather than the VMT per capita/VMT per employee efficiency metrics, the low VMT area screening does not apply. Therefore, the Project cannot be screened from VMT analysis due to the low VMT area criteria.

Transit Priority Area (TPA) Screening

Projects located within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor (HQTC) may also be exempt from VMT analysis[10]. Major transit stops are defined in the OPR technical advisory as rail or bus rapid transit stations, ferry terminals served by transit, or the intersection of two HQTCs (defined as corridors with fixed-route bus service with no longer than 15-minute headways during 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 Ratio (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 stops to the Project are along the LA Metro Silver Line bus rapid transit route. However, the Project is more than one mile away from the closest Silver Line stop at the I-110/Carson Street interchange. Also, there are no HQTCs near the Project. Therefore, the Project is not within a transit priority area.

Screening Summary

The Project does not meet any of the screening threshold criteria recommended by OPR, and therefore the Project is required to be assessed for potential VMT impacts.

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[9] Although an updated SoCal Connect RTP/SCS document was adopted by SCAG in 2020, SCAG has not yet released the corresponding Base Year 2020 travel demand model data. Therefore, Base Year 2016 is still the latest existing conditions dataset.

[10] California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15064.3(b)(1)

VMT Analysis Methodology

The SCAG 2016 RTP/SCS model was used to collect data and perform the VMT analysis for this study. The following steps were undertaken to estimate the VMT generated by the Project.

Step 1 – Code 2021 Project Land Use into SCAG Model

The SCAG model's socioeconomic data (SED) was updated to include the population and employment associated with the 2021 Project. Based on standard SCAG model rates, SED data from the Project's TAZ and site-specific information from the development team, population per household and employees per thousand gross leasable square feet (GLKSF) were calculated and applied to the 2021 Project land uses to generate the total service population estimate for the 2021 Project, summarized below:

- Resident Population: 3,716 (average population per household of 2.97)
- Commercial Employees: 1,754 (average employees per GLKSF of 2.35)
- Fulfillment Center/Distribution Center Employees: 4,589 (average employees per GLKSF of 2.93)
- **Total Service Population: 10,059**

Step 2 – Assign SCAG Model for 2021 Project.

Once the model coding was complete, the model assignment script was run following the SCAG model's standard process. Total VMT per service population was then calculated using the model. Based on this model run, the 2021 Project generates total VMT per service population of 39.1.

VMT Impact Threshold

Table 2 shows the VMT impact threshold for total VMT per service population used in this analysis, per OPR and interim City guidance. Based on this threshold, a project would need to generate total VMT per service population of less than 32.5 in order to avoid a significant VMT impact.

VMT Impact Determination

As detailed above, the total VMT per service population for the 2021 Project is calculated to be 39.1. Since this result is greater than the impact threshold, the 2021 Project has a significant VMT impact.

Mitigation Options

In order to mitigate the significant VMT impact, total VMT per service population would need to be reduced by approximately 17%. To achieve this reduction, a range of TDM measures were considered for the Project. These included the options summarized in the sections below.

Unbundled Parking

Unbundling parking typically separates the cost of purchasing or renting parking spaces from the cost of the purchasing or renting of a dwelling unit. Saving money on a dwelling unit by forgoing a parking space acts as an incentive to minimize auto ownership. Similarly, paying for parking (by purchasing or leasing a

space) acts as a disincentive that discourages auto ownership and trip-making. This TDM measure is only applicable to the Project's residential uses.

Rideshare Programs

Rideshare programs typically include the provision of an on-site transit and rideshare information center helping people form carpools or access transit alternatives. Rideshare programs often also include priority parking for carpools. Rideshare programs are more commonly provided for project site employees but residents could also benefit from a similar program.

Transit Pass Discount Program

Transit pass discount programs are typically negotiated with transit service providers to purchase transit passes in bulk, and therefore at a discounted rate. Discounted passes are then sold to interested residents or employees, helping them to obtain price discounts through the economies of scale of bulk purchasing. Transit pass discount programs are generally provided to project site employees but could also be sold to residents.

Bicycle Parking and Bike Share Program

The Project will include on-site bicycle facilities and short-term bicycle parking. The Project could supplement these amenities by providing long-term bicycle parking, self-service bike repair areas, and/or potentially a bike share service for residents, employees and visitors of the Project site.

Car Share Program

A car share program is a model of car rental where people rent cars for short periods of time, often by the hour. The programs are attractive to customers who make only occasional use of a vehicle, as well as others who would like occasional access to a vehicle of a different type than they use day-to-day. A car share program could serve both residents and employees of the Project site.

Mitigation Effectiveness

The effect of combining some of these TDM measures would result in a reduction of VMT for the Project. Fehr & Peers has developed a quick-response tool, *TDM+*, to help land use decisionmakers measure the effects of implementing a variety of TDM strategies. TDM+ utilizes findings from Fehr & Peers' technical analysis of greenhouse gas (GHG) mitigation measures for the California Air Resource Board Zero Carbon Buildings Study, and prior work for the California Air Pollution Control Officers Association (CAPCOA) and the Bay Area Air Quality Management District (BAAQMD).

Using the TDM+ tool, this study has estimated the potential effect of applying the full suite of TDM measures described in the previous section. With the full implementation of these TDM measures, the 2021 Project can achieve a total VMT per service population reduction of about 2%. The small potential reduction is in part due to the number of visitor trips generated by the retail uses and the heavy truck trips generated by the industrial uses. VMT mitigation measures are primarily focused on resident and employee commute trips, and therefore VMT mitigation is less effective when a large proportion of Project trips are not related to resident or employee commute trips. This reduction estimate would not be enough to mitigate the VMT

impact. Since the VMT impact cannot be mitigated through the suite of potential TDM measures identified, the VMT impact for the 2021 Project is anticipated to be significant and unavoidable.

VMT Comparison to 2018 Project

While VMT impact analysis was not required at the time of preparation for the 2018 Project draft SEIR, a comparison of VMT results is included in this study for informational purposes. Using the same VMT methodology described above for the 2021 Project, the land uses for the 2018 Project were coded into the 2016 RTP/SCS SCAG model to generate a VMT result. Based on this model run, the 2018 Project generates total VMT per service population of 47.7. Therefore, although the 2021 Project has a significant and unavoidable VMT impact, it does generate about 18% less total VMT per service population than the 2018 Project.

Non-VMT Transportation Impacts

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

Freeway Safety Analysis

Caltrans requires an assessment of off-ramp queuing at freeway interchanges serving the Project site for an evaluation of potential safety issues. However, Caltrans has not yet identified criteria for determining whether an off-ramp queue constitutes a significant safety impact. A typical approach is to assess whether a freeway off-ramp queue extends beyond the gore point (i.e., the point of separation between the freeway mainline and the off-ramp). A queue extending beyond the gore point can cause safety issues, particularly if vehicles on the freeway mainline are traveling at significantly higher speeds next to the off-ramp queuing vehicles. This analysis utilizes the Highway Capacity Manual (HCM), 6th Edition methodology to calculate the 95th percentile queue lengths and compares the queue lengths to the available off-ramp storage capacity.

Eight freeway off-ramps were evaluated:

- I-405 Northbound Off-Ramp & Main Street
- I-110 Southbound Ramps & Hamilton Avenue
- I-110 Northbound Ramps & Figueroa Street
- I-405 Southbound Ramps & Lenardo Drive
- I-405 Southbound Ramps & Avalon Boulevard
- I-405 Northbound Ramps & Avalon Boulevard
- I-405 Southbound Ramps & Carson Street
- I-405 Northbound Ramps & Carson Street

Queue lengths were estimated using the Synchro 10 traffic analysis software package. Intersection counts were collected at the ramp locations and signal timing information from Caltrans and field observations were used to accurately analyze operations. Detailed results from this analysis can be found in Appendix B of this report.

Table 3 presents a summary of the off-ramp queuing analysis for Existing, Existing plus Project, Future (Year 2026) Base and Future (Year 2026) plus Project scenarios. The two future scenarios consider additional off-ramp traffic volume from ambient growth (0.5% linear growth per year) and related projects in the City of

Carson and unincorporated Los Angeles County. Trip generation and distribution for the Project and the related projects included in this analysis are shown in Appendix A.

As shown in **Table 3**, only the off-ramp at Intersection 12 (Figueroa Street & I-110 NB Ramps) shows queues extending beyond the gore point. At this intersection, this occurs in the Future Base and both Future plus Project scenarios. Since the queue exceeds the storage length in Future Base, this issue will occur with or without the Project, and therefore is not directly caused by Project activity.

Other CEQA Transportation Impact Categories

CEQA guidelines include several potential transportation impact categories other than VMT and freeway safety analysis, as documented in Appendix E, Section XVII of the CEQA Guidelines Appendices[11]. The remaining sections of this chapter summarize the other transportation impact categories and assess the Project for significant impacts under these categories.

Programs, Plans, Ordinances and Policies

CEQA Guideline: *"Would the project…Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?"*

The Project does not prevent the addition of planned improvements to the City's circulation system as described in City regulatory documents including the 2021 Specific Plan Amendment, the City of Carson General Plan and the Master Plan of Bikeways. The Project will not degrade facilities on the existing circulation system either. The Project is located adjacent to freeway interchanges and along truck routes to ensure that trucks do not need to travel on local streets not designated as truck routes. Therefore, the Project does not cause significant impacts for this category.

Geometric Design Features and Incompatible Uses

CEQA Guideline: *"Would the project…Substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?"*

The Project does not increase hazards due to a geometric design feature. All driveway access points are perpendicular to the public right-of-way and adequately spaced from existing signalized intersections. The construction of new intersections to serve the Project will conform to the latest California Manual on Uniform Traffic Control Devices (CAMUTCD) guidelines. The Project does not introduce incompatible uses with the surrounding community (e.g. a housing development located along a rural road frequently used by slow-moving farming vehicles). Therefore, the Project does not cause significant impacts for this category.

Emergency Access

CEQA Guideline: *"Would the project…Result in inadequate emergency access?"*

[11] California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387

The Project provides several emergency access points from Main Street, Avalon Boulevard and Del Amo Boulevard. The location and design of these access points is adequate for emergency access. Therefore, the Project does not cause significant impacts for this category.

TABLE 3
FREEWAY OFF-RAMP QUEUE ANALYSIS

No	INTERSECTION	Storage Capacity (feet) [c]	Peak Hour	Existing			Existing plus Project			Future Base (2026)			Future plus Project (2026)		
				Delay (seconds)	HCM LOS	95TH Percentile Queue (feet) [c]	Delay (seconds)	HCM LOS	95TH Percentile Queue (feet) [c]	Delay (seconds)	HCM LOS	95TH Percentile Queue (feet) [c]	Delay (seconds)	HCM LOS	95TH Percentile Queue (feet) [c]
4	S Main St & I-405 NB Off Ramp	600	AM	20.9	C	150	21	C	150	190.6	F	425	221.9	F	450
			PM	21.9	C	75	28.9	C	100	330.4	F	350	393.2	F	425
11	Hamilton Ave & I-110 SB Ramps	600	AM							16.2	B	175	50.6	D	300
[a]			PM							31.3	C	175	217.3	F	450
12	Figueroa St & I-110 NB Ramps	600	AM	95.5	F	325	77.2	E	300	384.8	F	625	216.6	F	850
			PM	29.3	C	150	36.3	D	200	125	F	450	224.1	F	550
17	I-405 SB Ramps & Lenardo Dr	750	AM										6.4	A	175
[b]			PM										9	A	250
18	S Avalon Blvd & I-405 SB Ramps	>1,000	AM	12	B	250				12.1	B	425			
[b]			PM	16.2	B	225				15.6	B	550			
19	S Avalon Blvd & I-405 NB Ramps	600	AM	15.1	B	50	16.7	B	100	16.1	B	75	18	B	150
			PM	15.4	B	50	20	C	125	17.1	B	125	28.2	C	275
26	SR 405 SB Ramps & E Carson St	600	AM	38.3	D	50	23.8	C	50	17.7	B	50	16.3	B	50
			PM	30.7	C	50	40.5	D	50	14.2	B	50	17.8	B	50
27	SR 405 NB Ramps & E Carson St	900	AM	12.5	B	200	12.5	B	200	12.9	B	225	12.9	B	225
			PM	14.4	B	175	13.4	B	250	14.4	B	250	14.8	B	275

[a] Intersection 11 became signalized subsequent to this study's Existing Conditions counts. Therefore, off-ramp queuing analysis only conducted for future scenarios.

[b] Intersection 18 serves as the control for the off-ramp in Existing and Future Base scenarios. Intersection 17 serves as the control for the off-ramp during Future plus Project scenarios.

[c] Storage capacity and 95th percentile queue lengths are rounded up to the next 25-foot increment based on the Synchro assumption of a 25 foot car length.

4. Summary and Conclusions

The following summarizes the results of the 2021 Project Transportation Impact Analysis:

- The 2021 Project is consistent with the 2018 Project for all Planning Areas other than PA-3. Under the 2021 Project, PA-3 would include the construction of 33,800 square feet of local serving retail and restaurant space, 1,567,090 square feet of fulfillment center/distribution center warehouse space inclusive of ancillary office space, and 6.29 acres of park amenities/active and passive open spaces.
- The site on which the 2021 Project would be developed is comprised of approximately 157 acres located southwest of the San Diego Freeway (I-405) and north of the Avalon Boulevard Interchange. The Project proposes to provide signalized vehicular ingress and egress at three primary locations: Street "B" & Del Amo Boulevard, Street "A" & I-405 Southbound Ramps/Avalon Boulevard, and Main Street & Street "A".
- **Transportation Impact Analysis**
    - The 2021 Project does not meet the VMT screening threshold criteria and therefore requires an assessment of potential significant VMT impacts
    - As a regionally focused mixed-use development, the Project is subject to the VMT impact threshold: *15 percent below existing Citywide total VMT per service population*
    - The 2021 Project is expected to produce total VMT per service population greater than the VMT impact threshold, and thus results in a significant VMT impact
    - Mitigation measures were proposed to reduce total VMT per service population for the Project, but the measures are not expected to reduce total VMT per service population below the VMT impact threshold, and therefore a significant and unavoidable VMT impact would remain
    - Although the 2021 Project has a significant and unavoidable VMT impact, it does generate less total VMT per service population than the 2018 Project. VMT impact analysis was not required for the 2018 Project, and this comparison is documented for informational purposes only.

APPENDIX A:
FREEWAY RAMP QUEUEING TRAFFIC VOLUMES

THE DISTRICT AT SOUTH BAY PROJECT
PROJECT TRIP GENERATION ESTIMATE

Land Use	ITE Land Use Code	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
Luxury Outlet Shops [f]	823	581.020 ksf	26.59	0.67	73%	27%	2.29	47%	53%	per ksf	15,449	284	105	389	626	705	1,331
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(154)	(3)	(1)	(4)	(6)	(7)	(13)
Internal capture [c]			10%		10%	10%		20%	20%		(1,530)	(28)	(10)	(38)	(124)	(140)	(264)
Total Driveway Trips											13,765	253	94	347	496	558	1,054
Pass-by credit [d]			10%		10%	10%		10%	10%		(1,377)	(25)	(9)	(34)	(50)	(56)	(106)
Net New Trips											12,388	228	85	313	446	502	948
Fulfillment Center	155	803.300 ksf	[g]	[g]	[g]	[g]	[g]	[g]	[g]	per ksf	7,151	375	112	487	302	818	1,120
Transit, Walk, Bike credit [b]			0%		0%	0%		0%	0%		0	0	0	0	0	0	0
Internal capture [c]			0%		0%	0%		0%	0%		0	0	0	0	0	0	0
Total Driveway Trips											7,151	375	112	487	302	818	1,120
Pass-by credit [d]			0%		0%	0%		0%	0%		0	0	0	0	0	0	0
Net New Trips											7,151	375	112	487	302	818	1,120
Distribution Center/Cold Storage	156/157	763.790 ksf	[g]	[g]	[g]	[g]	[g]	[g]	[g]	per ksf	7,348	356	348	703	379	187	566
Transit, Walk, Bike credit [b]			0%		0%	0%		0%	0%		0	0	0	0	0	0	0
Internal capture [c]			0%		0%	0%		0%	0%		0	0	0	0	0	0	0
Total Driveway Trips											7,348	356	348	703	379	187	566
Pass-by credit [d]			0%		0%	0%		0%	0%		0	0	0	0	0	0	0
Net New Trips											7,348	356	348	703	379	187	566
Public Park	411	6.290 acres	[e]	0.00	50%	50%	[e]	55%	45%	per acre	92	0	0	0	13	10	23
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(1)	0	0	0	0	0	0
Internal capture [c]			0%		0%	0%		0%	0%		0	0	0	0	0	0	0
Total Driveway Trips											91	0	0	0	13	10	23
Pass-by credit [d]			0.00		0%	0%		0%	0%		0	0	0	0	0	0	0
Net New Trips											91	0	0	0	13	10	23
Shopping Center [l]	820	10.000 ksf	[i]	[i]	62%	38%	[i]	48%	52%	per ksf	1,520	24	14	38	61	67	128
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(15)	0	0	0	(1)	(1)	(2)
Internal capture [c]			10%		10%	10%		20%	20%		(151)	(2)	(1)	(3)	(12)	(13)	(25)
Total Driveway Trips											1,354	22	13	35	48	53	101
Pass-by credit [d]			10%		10%	10%		10%	10%		(135)	(2)	(1)	(3)	(5)	(5)	(10)
Net New Trips											1,219	20	12	32	43	48	91
Restaurant (High Turnover Sit-down) [h][l]	932	17.200 ksf	127.15	10.81	55%	45%	9.85	60%	40%	per ksf	2,187	102	84	186	101	68	169
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(22)	(1)	(1)	(2)	(1)	(1)	(2)
Internal capture [c]			20%		10%	10%		30%	30%		(433)	(10)	(8)	(18)	(30)	(20)	(50)
Total Driveway Trips											1,732	91	75	166	70	47	117
Pass-by credit [d]			10%		10%	10%		10%	10%		(173)	(9)	(8)	(17)	(7)	(5)	(12)
Net New Trips											1,559	82	67	149	63	42	105
Fast-Food Restaurant without Drive-Through [j]	933	9.000 ksf	346.23	25.10	60%	40%	28.34	50%	50%	per ksf	3,116	136	90	226	128	127	255
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(31)	(1)	(1)	(2)	(1)	(1)	(2)
Internal capture [c]			20%		10%	10%		30%	30%		(617)	(14)	(9)	(23)	(38)	(38)	(76)
Total Driveway Trips											2,468	121	80	201	89	88	177
Pass-by credit [d]			10%		10%	10%		10%	10%		(247)	(12)	(8)	(20)	(9)	(9)	(18)
Net New Trips											2,221	109	72	181	80	79	159
Fast-Food Restaurant with Drive-Through [k]	934	12.600 ksf	470.95	40.19	51%	49%	32.67	52%	48%	per ksf	5,934	258	248	506	214	198	412
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(59)	(3)	(2)	(5)	(2)	(2)	(4)
Internal capture [c]			20%		10%	10%		30%	30%		(1,175)	(26)	(25)	(51)	(64)	(59)	(123)
Total Driveway Trips											4,700	229	221	450	148	137	285
Pass-by credit [d]			10%		10%	10%		10%	10%		(470)	(23)	(22)	(45)	(15)	(14)	(29)
Net New Trips											4,230	206	199	405	133	123	256
Residential [l]	220	1,250 DU	6.65	0.51	20%	80%	0.62	65%	35%	per DU	8,313	128	510	638	504	271	775
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(83)	(1)	(5)	(6)	(5)	(3)	(8)
Internal capture [c]			20%		10%	10%		30%	30%		(1,646)	(13)	(51)	(64)	(150)	(80)	(230)
Total Driveway Trips											6,584	114	454	568	349	188	537
Pass-by credit [d]			0%		0%	0%		0%	0%		0	0	0	0	0	0	0
Net New Trips											6,584	114	454	568	349	188	537
Project Total											51,110	1,663	1,511	3,173	2,329	2,451	4,779
Transit, Walk, Bike credit [b]											(365)	(9)	(10)	(19)	(16)	(15)	(31)
Internal capture [c]											(5,552)	(93)	(104)	(197)	(418)	(350)	(768)
Total Driveway Trips											**45,193**	**1,561**	**1,397**	**2,957**	**1,895**	**2,086**	**3,980**
Pass-by credit [d]											(2,402)	(71)	(48)	(119)	(86)	(89)	(175)
Project Total Trips											**42,791**	**1,490**	**1,349**	**2,838**	**1,809**	**1,997**	**3,805**

Notes:

a. Source: Institute of Transportation Engineers (ITE), Trip Generation, 10th Edition, 2017, unless otherwise noted.

b. A transit/walk/bike credit was informed by the built environment and walkability, local transit service, and on the results of MXD 2.0 Mixed Use Trip Generation Methodology to account for transit, walking, and biking access to the project site.

c. Internal capture represents the percentage of trips between land uses that occur within the site. This percentage is informed by MXD 2.0 Mixed Use Trip Generation Methodology, which incorporated the findings of NCHRP Project 8-51 as described in "Improved Estimation for Internal Trip Capture for Mixed-use Developments," ITE Journal, August 2010.

d. Pass-by credits were informed by ITE pass-by rates and the City of Los Angeles Traffic Study Guideline Pass-by recommendations. Rates were considered reasonable given the location of the site along a major regional thoroughfare.

e. Public Park trip generation equations used rather than trip generation rate (except for AM peak hour which generates minimal trips):
Daily: T = 0.64(X) + 88.46, where T = trips, X = area in acres
Weekend Mid-Day Peak Hour: T = 0.20(X) + 26.40, where T = trips, X = area in acres
PM Peak Hour: T = 0.06(X) + 22.60, where T = trips, X = area in acres

f. Land use is primarily luxury outlet center with other regional commercial uses; ITE factory outlet center rates were used to determine trip generation and is based on leasable SF.

g. See Fulfillment Center and Parcel Hub (i.e. Distribution Center) subtables on the following two pages for details on trip generation rates.

h. Includes 15 KSF of restaurant space in Planning Area 2 and 2.2 KSF of restaurant space in Planning Area 3 as part of the park/open space

i. ITE Shopping Center trip generation equations used rather than trip generation rate:
Daily: Ln(T) = 0.65 * Ln(X) + 5.83, where T = trips, X = area in ksf
AM Peak Hour: Ln(T) = 0.61 * Ln(X) + 2.24, where T = trips, X = area in ksf
PM Peak Hour: Ln(T) = 0.67 * Ln(X) + 3.31, where T = trips, X = area in ksf

j. Land use is walk-up food & beverage stalls within the park; ITE Fast-Food Restaurant without Drive-Through rates were used to determine trip generation

k. Land use is gourmet restaurant with drive-through; ITE Fast-Food Restaurant with Drive-Through rates were used to determine trip generation

l. ITE, Trip Generation, 9th Edition, 2012 rates used for this land use to match the same rates used in the 2018 Approved Project analysis

SUBTABLE 7A

Project Trip Generation for Fulfillment Center

Land Use / Vehicle Type	Source	Trip Generation Rates per KSF						
		AM Peak Hour			PM Peak Hour			Daily
		% In	% Out	Total	% In	% Out	Total	
Fulfillment Center	ITE 155 [b]	77%	23%	0.59	27%	73%	1.37	8.18
Percent Cars	[a]	-	-	97.27%	-	-	98.23%	91.23%
Percent Trucks	[a]	-	-	2.73%	-	-	1.77%	8.77%
Car Trips per KSF		0.442	0.132	0.574	0.363	0.982	1.346	7.463
Truck Trips per KSF		0.012	0.004	0.016	0.007	0.018	0.024	0.717

Vehicle Trips Generated									
Land Use / Vehicle Type	Size (KSF)		AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Fulfillment Center									
Cars	803.3		355	106	461	292	789	1081	5995
Trucks			10	3	13	5	14	19	576
TOTAL VEHICLE TRIPS GENERATED			**365**	**109**	**474**	**297**	**803**	**1101**	**6571**

Passenger Car Equivalent (PCE) Trips Generated									
Land Use / Vehicle Type	Size (KSF)	Truck Percent	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Fulfillment Center	803.3								
Cars			355	106	461	292	789	1081	5995
Trucks	PCE Factor								
2-Axle Trucks	1.5	66.25%	10	3	13	5	14	19	573
5+ Axle Trucks	3.0	33.75%	10	3	13	5	14	20	583
Subtotal Trucks	-		20	6	26	11	29	39	1156
TOTAL PCE TRIPS GENERATED			**375**	**112**	**487**	**302**	**818**	**1120**	**7151**

Notes:

[a] ITE, High-Cube Warehouse Vehicle Trip Generation Analysis, October 2016

[b] ITE, Trip Generation, 10th Edition, 2018.

Truck by axle percentages obtained from ITE, High-Cube Warehouse Vehicle Trip Generation Analysis, October 2016

Passenger Car Equivalent (PCE) factors have been obtained from the County of San Bernardino Congestion Management Program.

PCE factor of 1.0 is used for passenger cars (such as employee vehicles); light duty trucks use a PCE factor of 1.5; medium duty trucks with 3 axles use a PCE factor of 2.0; and heavy duty trucks with 4 or more axles use a PCE factor of 3.0

SUBTABLE 7B
Project Trip Generation for Parcel Hub

Land Use / Vehicle Type	Source	Trip Generation Rates per KSF						
		AM Peak Hour			PM Peak Hour			Daily
		% In	% Out	Total	% In	% Out	Total	
Parcel Hub	ITE 156 [b]	50%	50%	0.70	68%	32%	0.64	7.75
Percent Cars	[a]	-	-	50.29%	-	-	70.73%	62.33%
Percent Trucks	[a]	-	-	49.71%	-	-	29.27%	37.67%
Car Trips per KSF		0.176	0.176	0.352	0.308	0.145	0.453	4.831
Truck Trips per KSF		0.174	0.174	0.348	0.127	0.060	0.187	2.919
Cold Storage	ITE 157 [b]	77%	23%	0.11	27%	73%	0.12	2.12
Percent Cars	[a]	-	-	59.22%	-	-	67.44%	60.61%
Percent Trucks	[a]	-	-	40.78%	-	-	32.56%	39.39%
Car Trips per KSF		0.050	0.015	0.065	0.022	0.059	0.081	1.285
Truck Trips per KSF		0.035	0.010	0.045	0.011	0.029	0.039	0.835

Vehicle Trips Generated									
Land Use / Vehicle Type	Size (KSF)		AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Parcel Hub									
Cars	687.411		121	121	242	212	100	311	3321
Trucks			120	120	239	88	41	129	2007
Cold Storage									
Cars	76.379		4	1	5	2	5	6	98
Trucks			3	1	3	1	2	3	64
TOTAL VEHICLE TRIPS GENERATED			**247**	**243**	**490**	**302**	**147**	**449**	**5489**

Passenger Car Equivalent (PCE) Trips Generated									
Land Use / Vehicle Type	Size (KSF)	Truck Percent	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Parcel Hub	687.411								
Cars			121	121	242	212	100	311	3321
Trucks	PCE Factor								
2-Axle Trucks	1.5	75.49%	135	135	271	99	47	146	2272
5+ Axle Trucks	3.0	24.51%	88	88	176	64	30	95	1476
Subtotal Trucks	-		223	223	447	164	77	240	3748
Cold Storage	76.379								
Cars			4	1	5	2	5	6	98
Trucks	PCE Factor								
2-Axle Trucks	1.5	10.41%	0	0	1	0	0	0	10
5+ Axle Trucks	3.0	89.59%	7	2	9	2	6	8	171
Subtotal Trucks	-		8	2	10	2	6	8	181
Subtotal Cars			125	122	247	213	104	317	3419
Subtotal Trucks			231	226	456	166	83	249	3929
TOTAL PCE TRIPS GENERATED			**356**	**348**	**703**	**379**	**187**	**566**	**7348**

Notes:

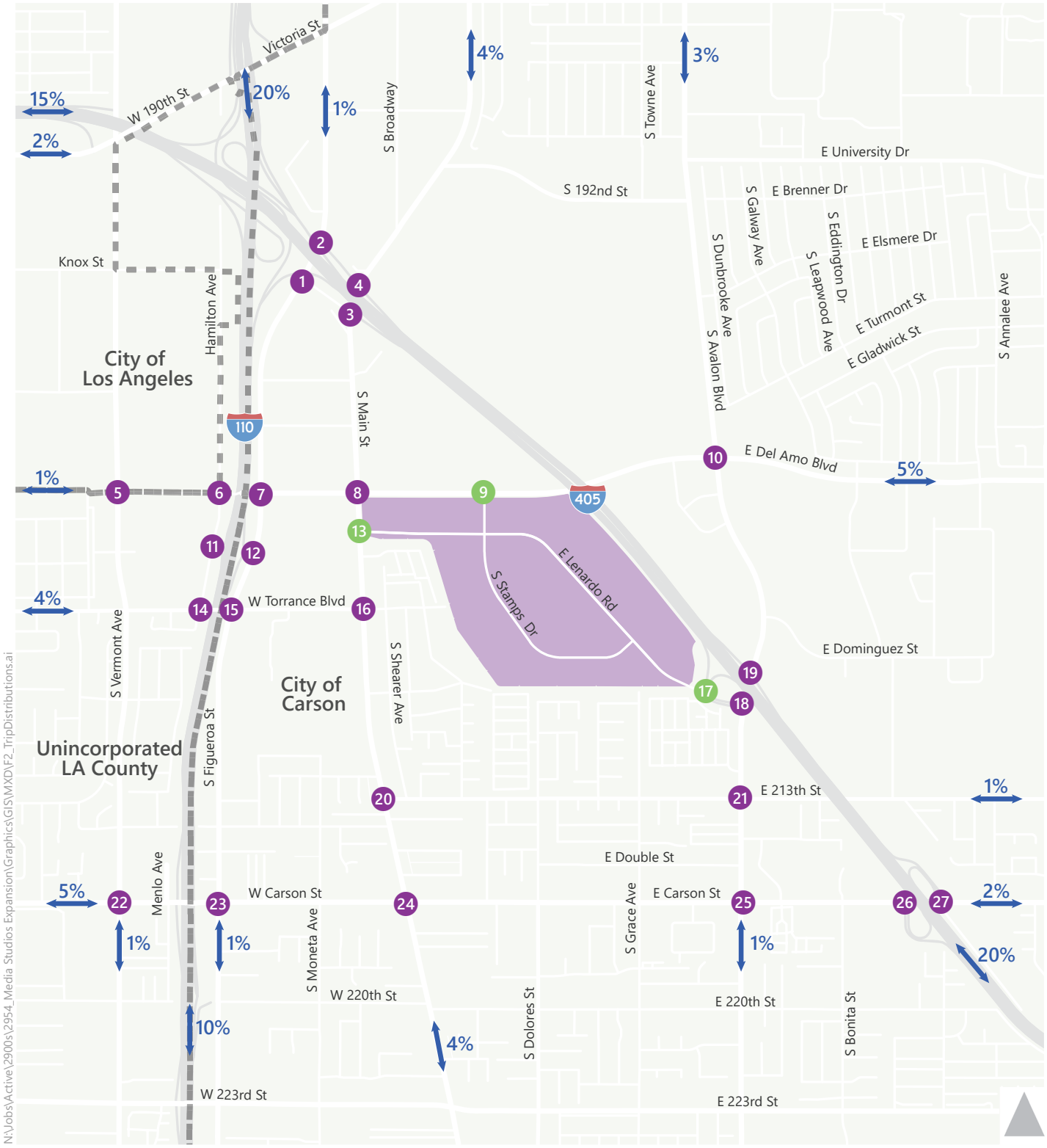
[a] ITE, High-Cube Warehouse Vehicle Trip Generation Analysis, October 2016

[b] ITE, Trip Generation, 10th Edition, 2018.

Truck by axle percentages obtained from ITE, High-Cube Warehouse Vehicle Trip Generation Analysis, October 2016

Passenger Car Equivalent (PCE) factors have been obtained from the County of San Bernardino Congestion Management Program.

PCE factor of 1.0 is used for passenger cars (such as employee vehicles); light duty trucks use a PCE factor of 1.5; medium duty trucks with 3 axles use a PCE factor of 2.0; and heavy duty trucks with 4 or more axles use a PCE factor of 3.0



Study Intersection

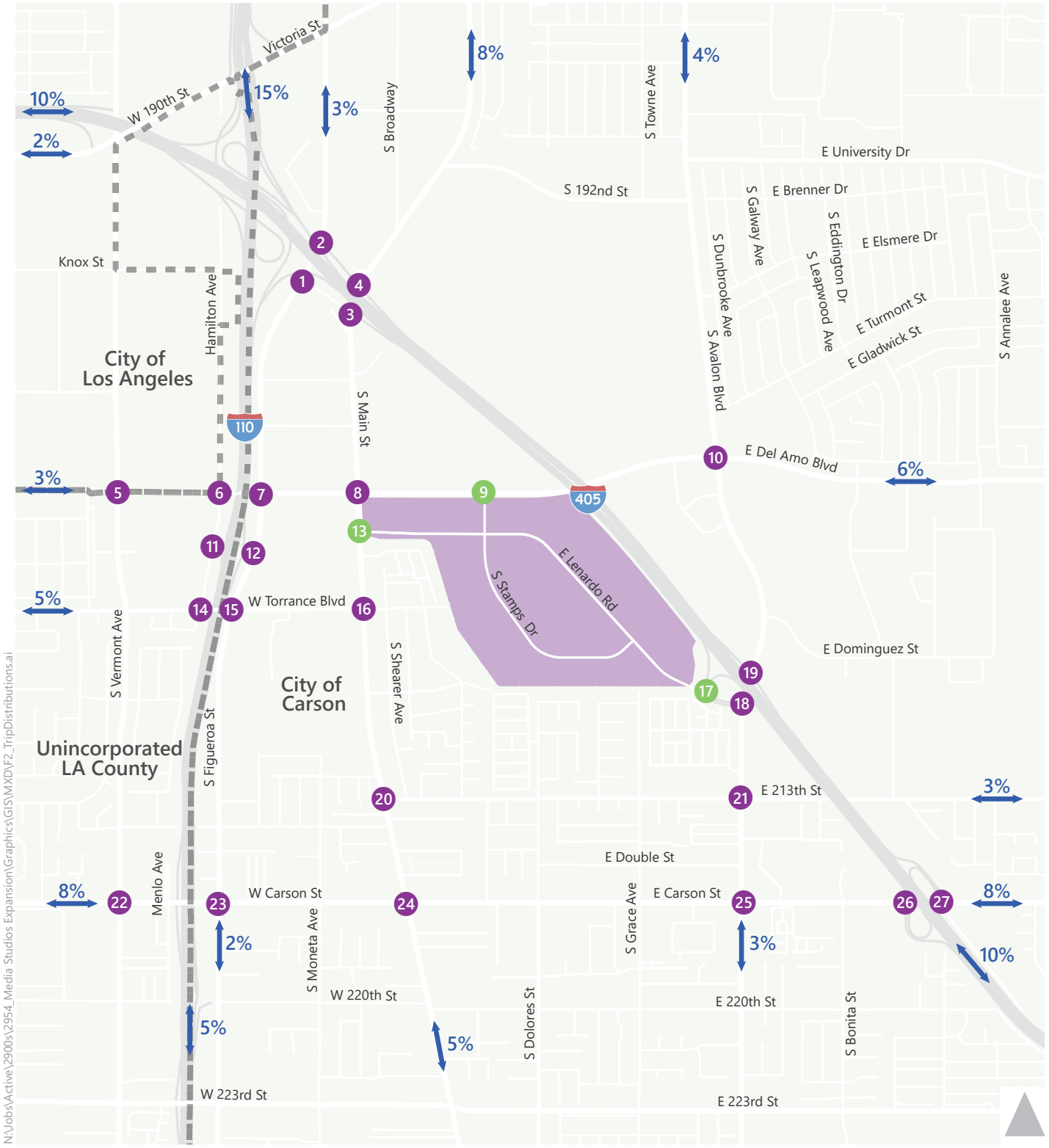
- Existing Intersection
- Future Intersection

Project Site

City Boundaries

% Trip Distribution

Trip Distribution
Regional Commercial



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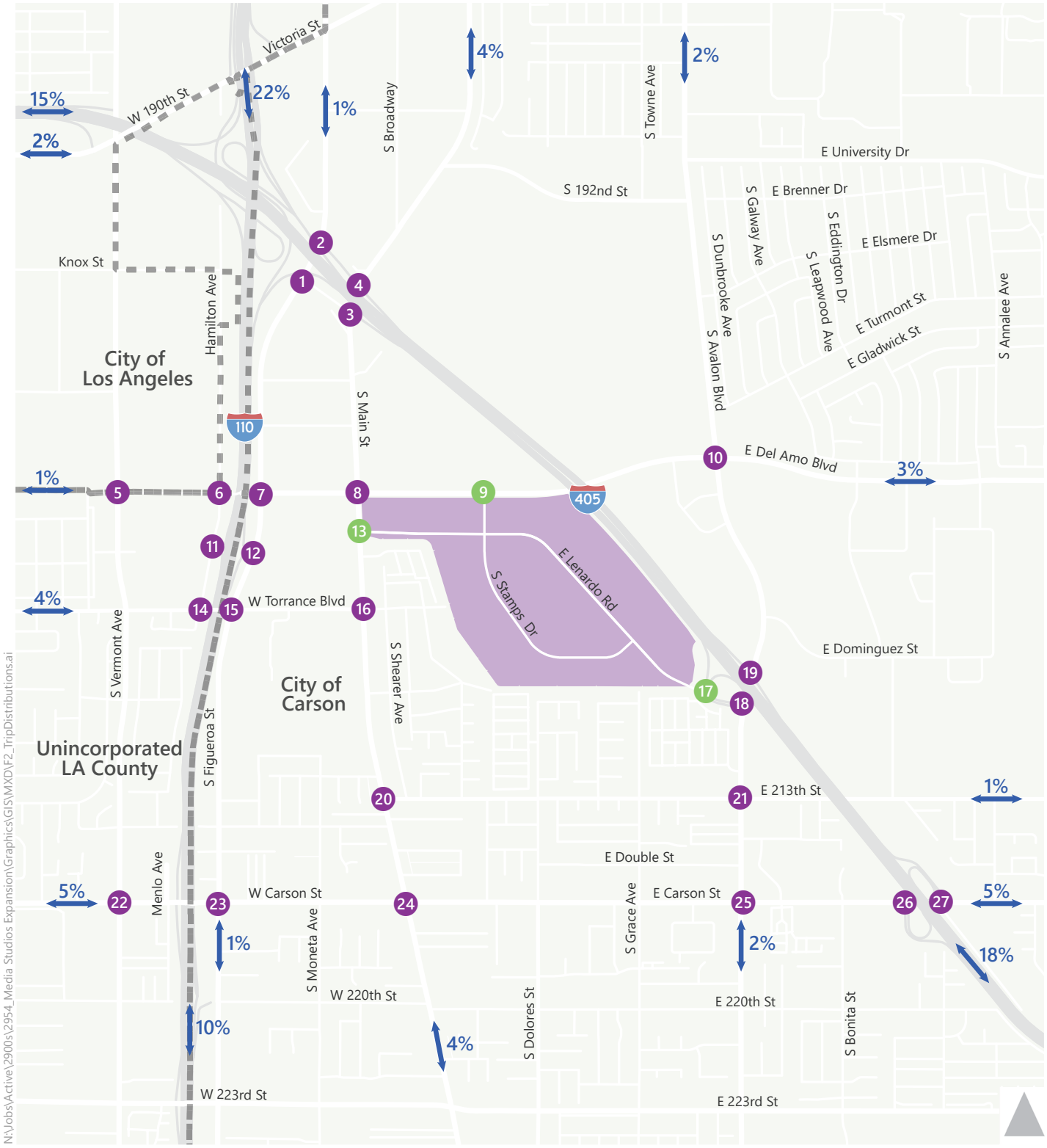
Study Intersection

- Existing Intersection
- Future Intersection

- Project Site
- City Boundaries

% Trip Distribution

Trip Distribution
Neighborhood Commercial



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Study Intersection

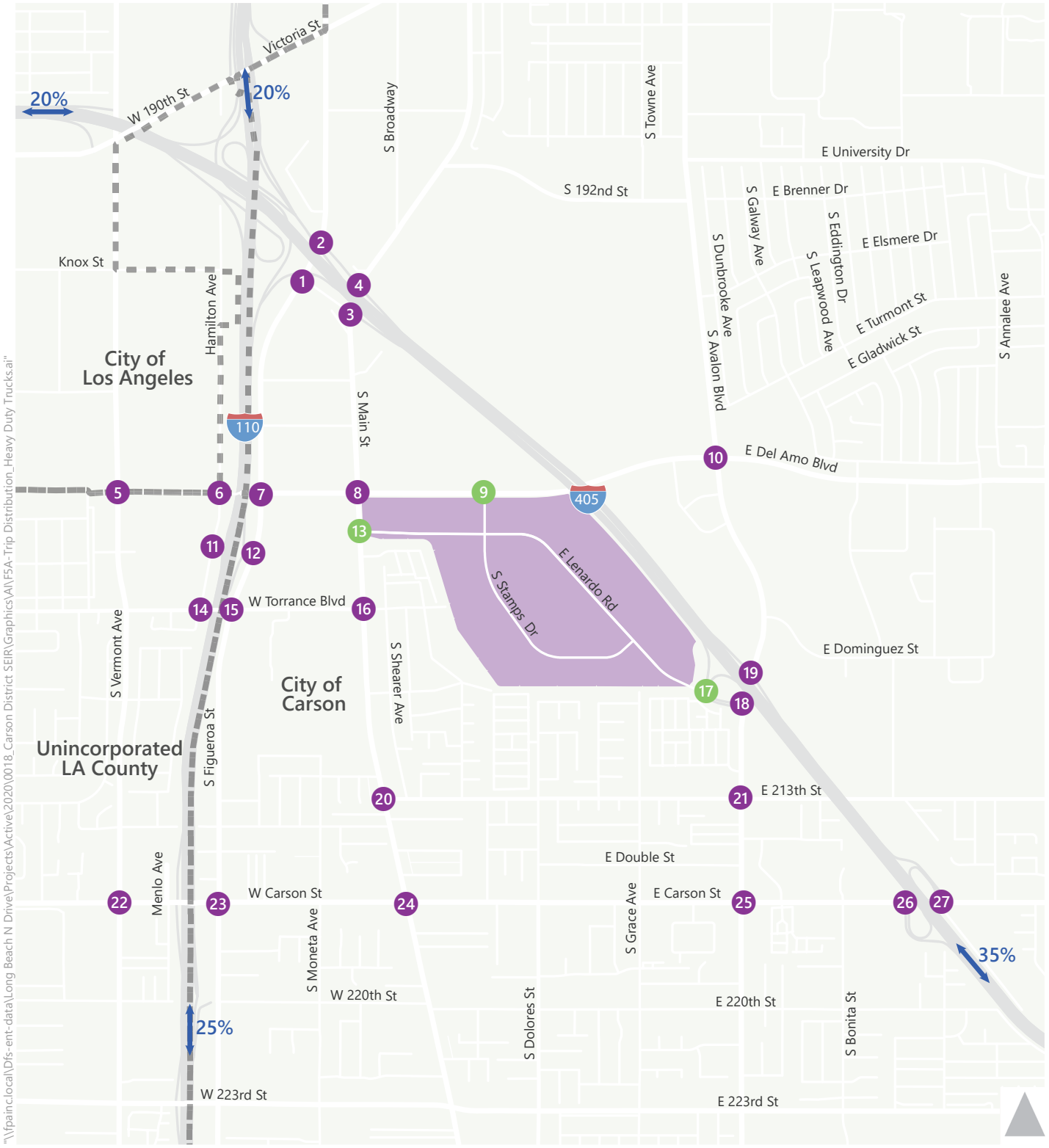
- Existing Intersection
- Future Intersection

Project Site

City Boundaries

% Trip Distribution

Trip Distribution Residential



Study Intersection

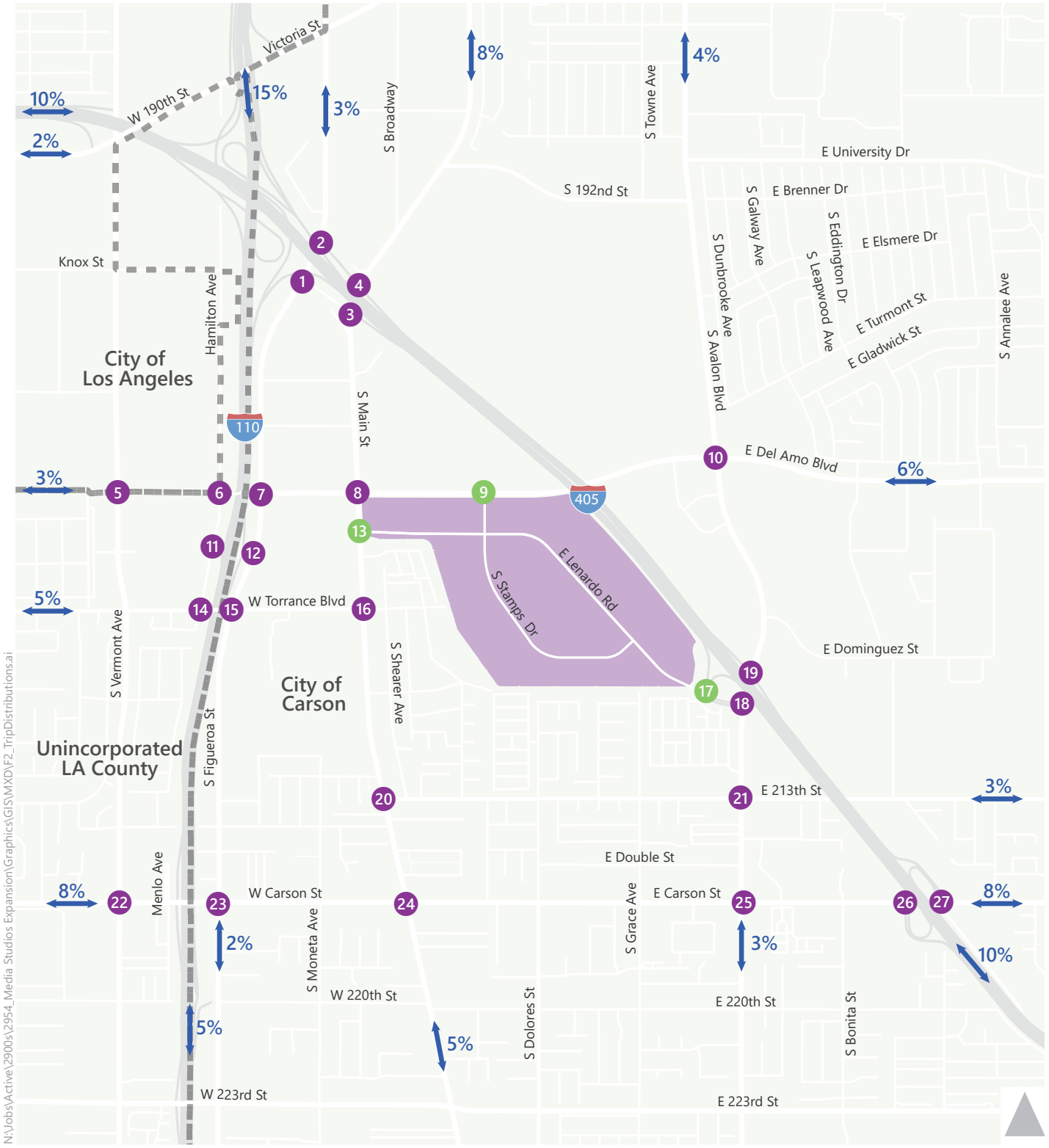
- Existing Intersection
- Future Intersection

Project Site

City Boundaries

% Trip Distribution

Trip Distribution
Fulfillment Center/Distribution Center Heavy Trucks



Study Intersection

- Existing Intersection
- Future Intersection

- Project Site
- City Boundaries

% Trip Distribution

Trip Distribution
Fulfillment Center/Distribution Center Non-Heavy Trucks

THE DISTRICT AT SOUTH BAY PROJECT
RELATED PROJECTS TRIP GENERATION ESTIMATES

No.	Project Location	Land Use	Size		Trip Generation						
						AM			PM		
					Daily	IN	OUT	TOTAL	IN	OUT	TOTAL
1	19200 S Main St	Blimp-port	45	ksf	117	6	2	8	2	7	9
2	225 W Torrance Blvd	Apartments	356	du	1,937	33	95	128	96	61	157
3	21521 S Avalon Blvd	Apartments	357	du	3,685	54	156	210	199	137	335
		Retail	30.7	ksf							
4	2112 E 223rd St	Warehouse	292	ksf	507	38	12	50	14	41	55
5	21207 Avalon Blvd	Mixed-Use	[a]	[a]	5,586	125	277	402	283	174	457
6	888 E Dominguez St	Hotel	118	keys	905	32	22	54	36	35	71
7	2254 E 223rd St	Warehouse	120.5	ksf	429	29	8	36	10	29	39
8	333 W Gardena Blvd	Warehouse	146	ksf	276	19	6	25	7	21	28
9	345 & 349 E 220th St	Apartments	35	du	256	4	12	16	12	7	19
10	20707 Avalon Blvd	Retail	3	ksf	608	26	26	52	22	20	42
11	21915 S Dolores St	Apartments	5	du	37	1	2	3	2	2	4
12	17706 S Main St	Warehouse	94.731	ksf	503	43	9	52	11	41	53
		Office	15	ksf							
13	1007 E Victoria St	Apartments	35	du	278	4	13	17	13	8	21
14	Central Ave & Victoria St	Apartments	175	du	1,281	19	62	81	62	36	98
15	123 E 223rd St	Apartments	10	du	36	2	1	3	1	2	3
16	21000 S Normandie Ave [c]	Apartments	113	du	784	10	41	51	42	23	65
17	19210 S Vermont Ave [c]	Office	62	ksf	677	84	11	95	16	76	92
18	2315 E Dominguez St	Warehouse	14	ksf	68	1	1	2	1	2	3
19	20501 Avalon Blvd	Retail	5	ksf	1,013	44	43	86	37	34	70
20	1054 W 204th St [b]	Park	9	acres	7	0	0	0	1	0	1
21	22410 S Vermont Ave [b]	Apartments	41	du	300	4	15	19	14	8	22
22	20416 Kenwood Ave [b]	Houses	2	du	19	1	1	2	1	1	2
23	20814 Normandie Ave [b]	Houses	63	du	600	12	35	47	40	23	63
24	19606 Normandie Ave [b]	Warehouse	13	ksf	48	3	1	4	1	3	4
25	22003 Meyler St [b]	Houses	1	du	10	0	1	1	1	0	1
26	939 W 223rd St [b]	Warehouse	5.82	ksf	21	1	0	2	0	1	2
27	Development District #3 (11 acres) [d]	Houses	300	DU	1,580	27	109	136	84	45	129
28	439 E Gardena Blvd	Warehouse	4	ksf	52	1	0	1	0	1	1
29	1055 Sandhill Ave	Warehouse	127	ksf	246	17	5	22	6	18	24
30	2277 E 220th St	Warehouse	74	ksf	162	10	3	13	4	10	14
31	21240-50 Main St	Apartments	19	du	103	2	5	7	5	3	8
32	16627 S Avalon Blvd	Warehouse	116	ksf	229	15	5	20	6	16	22
33	18501 S Figueroa	Warehouse	37	ksf	104	5	1	6	2	5	7
34	20700 Avalon Blvd	Retail	4	ksf	810	35	34	69	29	27	56
35	20601 S Main St	Industrial Park	267	ksf	900	87	20	107	22	85	107
36	21212 Avalon Blvd	Mixed-Use	[a]	[a]	9,779	171	347	518	391	268	659
37	CSUDH Campus Master Plan	Mixed-Use	[a]	[a]	N/A	2,299	1,415	3,714	1,940	2,286	4,226
38	20700 Belshaw Ave	Warehouse	3	ksf	50	0	1	1	0	1	1
39	20950 Brant Ave	Retail	4	ksf	151	2	2	4	7	8	15
40	17706 S Main St	Warehouse	102	ksf	207	13	4	17	5	14	19
41	20850 Normandie Ave [b]	Warehouse	204	ksf	469	36	14	50	12	41	53
42	Carol Kimmelman Campus [b]	Mixed-Use	[a]	[a]	3,808	105	83	188	244	192	436
43	Creek Dominguez Hills [b]	Mixed-Use	[a]	[a]	16,132	580	384	964	727	669	1,396
44	Harbor UCLA Medical Center [b]	Mixed-Use	[a]	[a]	1,620	166	34	200	33	164	197
				Total	**56,389**	**4,167**	**3,317**	**7,484**	**4,441**	**4,646**	**9,086**

Notes:

du = dwelling unit

ksf = one thousand square feet

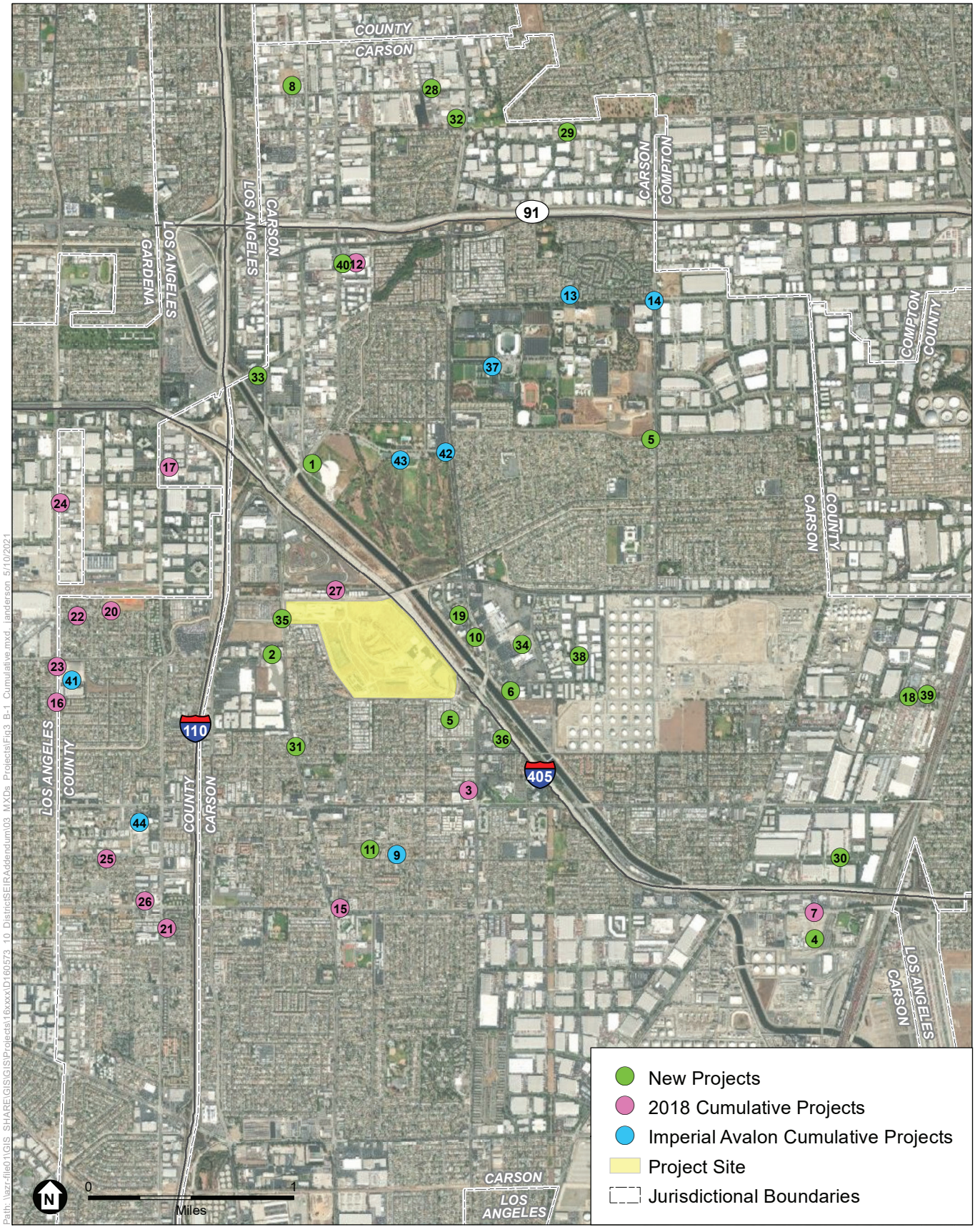
Related projects list is based on information provided by the City of Carson and trip generation rates contained in ITE's *Trip Generation, 10th Edition,* unless otherwise noted.

[a] Trip generation for the Mixed-Use developments based on information found in publicly available environmental documentation.

[b] Related projects provided by County of Los Angeles, 2020.

[c] Related projects provided by City of Los Angeles, 2020.

[d] The 11 acre parcel north of Del Amo was previously included in the Carson Marketplace Project but was sold separately and is not longer part of modified project description for THE



SOURCE: ESRI

The District at South Bay

Related Project Locations

ESA

Prepared by National Data & Surveying Services

Main St & I-405 NB Ramps

Peak Hour Turning Movement Count

ID: 19-05496-005
City: Carson

Day: Tuesday
Date: 08/27/2019

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

SOUTHBOUND (Main St)

AM	69	737	0	0	909	AM
NOON	0	0	0	0	0	NOON
PM	62	1257	0	1	827	PM
	0.5	1.5	0	0		

EASTBOUND (I-405 NB Ramps)

AM	NOON	PM	
482	0	194	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

WESTBOUND (I-405 NB Ramps)

PM	NOON	AM	
172	0	208	0
118	0	375	2
72	0	83	0
0	0	0	0
0	0	0	
PM	NOON	AM	

CONTROL

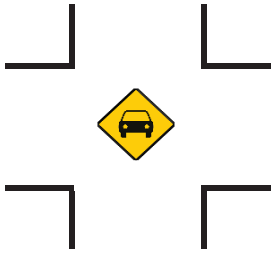
Signalized

TEV	2211 AM	0 NOON	2353 PM
PHF	0.94		0.95

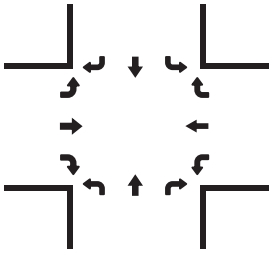
NORTHBOUND (Main St)

PM	1332	3	14	654	0 PM
NOON	0	0	0	0	0 NOON
AM	820	0	38	701	0 AM
		0	1	2	0

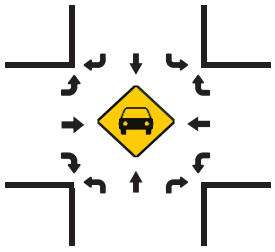
Total Vehicles (AM)



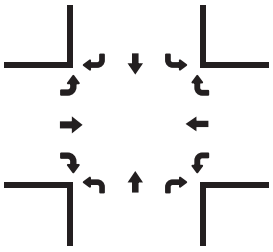
Total Vehicles (AM)



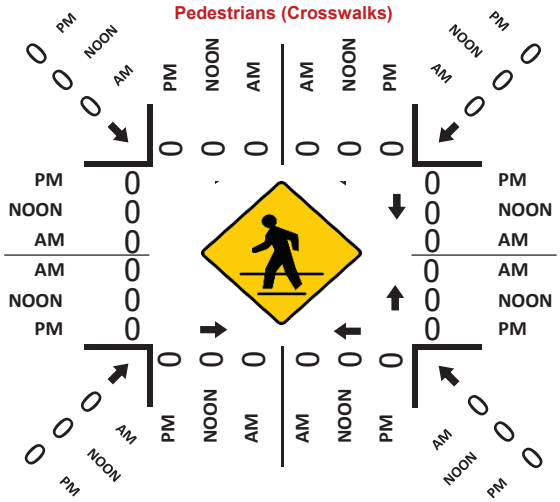
Total Vehicles (NOON)



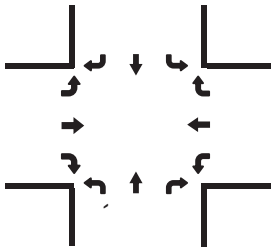
Total Vehicles (NOON)



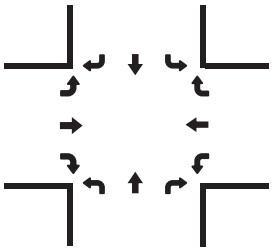
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-011 | **Day:** Wednesday

City: Carson | **Date:** 11/16/2016

TOTALS

AM

NS/EW Streets:	Hamilton Ave			Hamilton Ave			SR 110 SB Ramps			SR 110 SB Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	0	2	0	0	0	0	1.5	0	0.5	
7:00 AM	0	8	18	80	19	0	0	0	0	160	0	75	360
7:15 AM	0	13	41	105	19	0	0	0	0	205	0	106	489
7:30 AM	0	10	36	111	25	0	0	0	0	215	0	55	452
7:45 AM	0	22	32	70	26	0	0	0	0	171	0	92	413
8:00 AM	0	30	31	76	23	0	0	0	0	204	0	95	459
8:15 AM	0	18	19	79	22	0	0	0	0	234	0	88	460
8:30 AM	0	26	40	79	26	0	0	0	0	217	0	82	470
8:45 AM	0	19	30	79	25	0	0	0	0	205	0	96	454
9:00 AM	0	11	26	66	36	0	0	0	0	176	0	60	375
9:15 AM	0	12	29	60	35	0	0	0	0	182	0	71	389
9:30 AM	0	18	31	53	28	0	0	0	0	192	0	63	385
9:45 AM	0	19	31	54	29	0	0	0	0	171	0	72	376
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	206	364	912	313	0	0	0	0	2332	0	955	5082
APPROACH %'s :	0.00%	36.14%	63.86%	74.45%	25.55%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	70.95%	0.00%	29.05%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	93	120	313	96	0	0	0	0	860	0	361	1843
PEAK HR FACTOR :		0.807			0.974			0.000			0.948		0.980

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

CONTROL : 3-Way Stop (NB/SB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-011 | **Day:** Wednesday

City: Carson | **Date:** 11/16/2016

TOTALS

PM

NS/EW Streets:	Hamilton Ave			Hamilton Ave			SR 110 SB Ramps			SR 110 SB Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	0	2	0	0	0	0	1.5	0	0.5	
4:00 PM	0	19	74	146	25	0	0	0	0	106	0	31	401
4:15 PM	0	23	78	126	22	0	0	0	0	99	0	24	372
4:30 PM	0	15	98	139	21	0	0	0	0	91	0	25	389
4:45 PM	0	15	75	140	20	0	0	0	0	108	0	42	400
5:00 PM	0	12	109	135	34	0	0	0	0	96	0	30	416
5:15 PM	0	6	116	161	40	0	0	0	0	75	0	30	428
5:30 PM	0	18	109	149	18	0	0	0	0	88	0	41	423
5:45 PM	0	10	91	141	20	0	0	0	0	82	0	27	371
6:00 PM	0	16	82	141	20	0	0	0	0	94	0	29	382
6:15 PM	0	9	49	125	19	0	0	0	0	110	0	31	343
6:30 PM	0	10	75	108	20	0	0	0	0	102	0	29	344
6:45 PM	0	7	50	105	13	0	0	0	0	106	0	17	298
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	160	1006	1616	272	0	0	0	0	1157	0	356	4567
APPROACH %'s :	0.00%	13.72%	86.28%	85.59%	14.41%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	76.47%	0.00%	23.53%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	51	409	585	112	0	0	0	0	367	0	143	1667
PEAK HR FACTOR :		0.906			0.867			0.000			0.850		0.974

UTURNS	NB	SB	EB	WB
				1
				0
				0
				1
				0
				0
				1
				0
				0
				1
				0
				0
TOTAL VOLUMES :	0	0	0	4

CONTROL : 3-Way Stop (NB/SB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-012 **Day:** Wednesday

City: Carson **Date:** 11/16/2016

TOTALS

AM

NS/EW Streets:	Figueroa St			Figueroa St			SR 110 NB Ramps			SR 110 NB Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 2	NR 0	SL 0	ST 2	SR 1	EL 1.5	ET 0	ER 0.5	WL 0	WT 0	WR 0	TOTAL
7:00 AM	150	118	0	0	59	30	99	0	55	0	0	0	511
7:15 AM	153	138	0	0	117	26	106	0	67	0	0	0	607
7:30 AM	160	173	0	0	130	35	109	0	85	0	0	0	692
7:45 AM	155	180	0	0	141	40	153	0	70	0	0	0	739
8:00 AM	171	184	0	0	108	29	149	0	62	0	0	0	703
8:15 AM	164	148	0	0	93	33	155	0	91	0	0	0	684
8:30 AM	156	148	0	0	92	31	115	0	60	0	0	0	602
8:45 AM	124	108	0	0	66	40	94	0	82	0	0	0	514
9:00 AM	130	112	0	0	64	31	84	0	41	0	0	0	462
9:15 AM	136	74	0	0	56	32	95	0	58	0	0	0	451
9:30 AM	134	77	0	0	62	35	100	0	63	0	0	0	471
9:45 AM	153	81	0	0	53	35	85	0	59	0	0	0	466
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1786	1541	0	0	1041	397	1344	0	793	0	0	0	6902
APPROACH %'s :	53.68%	46.32%	0.00%	0.00%	72.39%	27.61%	62.89%	0.00%	37.11%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	650	685	0	0	472	137	566	0	308	0	0	0	2818
PEAK HR FACTOR :		0.940			0.841			0.888			0.000		0.953

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-012 **Day:** Wednesday

City: Carson **Date:** 11/16/2016

TOTALS

PM

NS/EW Streets:	Figueroa St			Figueroa St			SR 110 NB Ramps			SR 110 NB Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	0	2	1	1.5	0	0.5	0	0	0	
4:00 PM	185	113	0	0	130	42	77	0	48	0	0	0	595
4:15 PM	150	135	0	0	164	35	82	0	50	0	0	0	616
4:30 PM	161	119	0	0	148	55	94	0	45	0	0	0	622
4:45 PM	126	124	0	0	151	37	85	0	50	0	0	0	573
5:00 PM	156	111	0	0	183	55	75	0	30	0	0	0	610
5:15 PM	159	116	0	0	248	57	100	5	45	0	0	0	730
5:30 PM	153	112	0	0	162	56	103	0	53	0	0	0	639
5:45 PM	156	112	0	0	145	48	68	0	57	0	0	0	586
6:00 PM	183	89	0	0	137	52	62	0	34	0	0	0	557
6:15 PM	141	86	0	0	133	54	79	0	43	0	0	0	536
6:30 PM	154	84	0	0	119	25	76	0	35	0	0	0	493
6:45 PM	139	59	0	0	110	38	54	0	34	0	0	0	434
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1863	1260	0	0	1830	554	955	5	524	0	0	0	6991
APPROACH %'s :	59.65%	40.35%	0.00%	0.00%	76.76%	23.24%	64.35%	0.34%	35.31%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	624	451	0	0	738	216	346	5	185	0	0	0	2565
PEAK HR FACTOR :		0.977			0.782			0.859			0.000		0.878

UTURNS

NB	SB	EB	WB
0			
0			
0			
0			
1			
0			
0			
1			
0			
0			
1			
0			
NB	SB	EB	WB
3	0	0	0

CONTROL : Signalized

Prepared by National Data & Surveying Services

Avalon Blvd & I-405 SB Ramps

Peak Hour Turning Movement Count

ID: 19-05496-002
City: Carson

Day: Tuesday
Date: 08/27/2019

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

SOUTHBOUND — Avalon Blvd

AM	188	584	0	0	1496	AM
NOON	0	0	0	0	0	NOON
PM	425	1042	0	0	1297	PM
	1	2	0	0		

EASTBOUND — I-405 SB Ramps

AM	NOON	PM	
188	0	425	
0	0	0	0
389	0	215	2
4	0	225	2
481	0	349	1

WESTBOUND — I-405 SB Ramps

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
470	0	87	

CONTROL

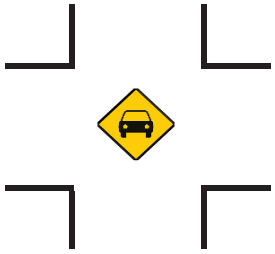
Signalized

TEV	2836	0	3583
	AM	NOON	PM
PHF	0.92		0.99

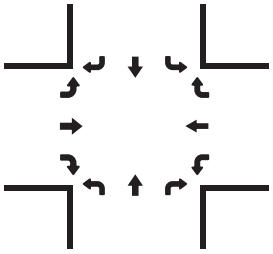
NORTHBOUND — Avalon Blvd

	0	1	2	0		
PM	1391	0	0	1082	245	PM
NOON	0	0	0	0	0	NOON
AM	1065	0	0	1107	83	AM

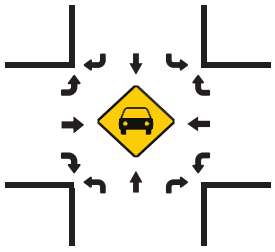
Total Vehicles (AM)



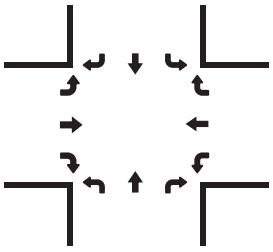
Total Vehicles (AM)



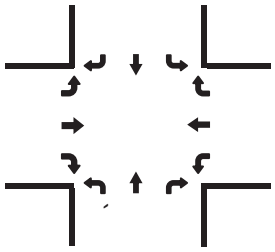
Total Vehicles (NOON)



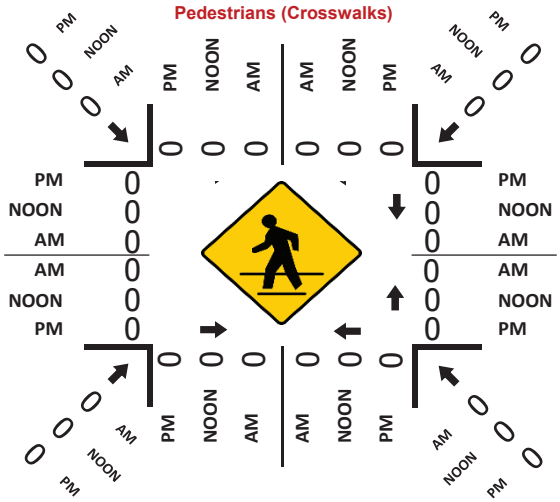
Total Vehicles (NOON)



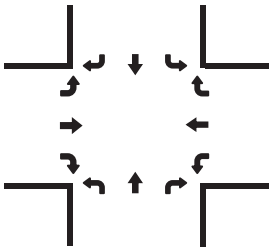
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

Avalon Blvd & I-405 NB Ramps

Peak Hour Turning Movement Count

ID: 19-05496-003
City: Carson

Day: Tuesday
Date: 08/27/2019

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 04:00 PM - 05:00 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

SOUTHBOUND (Avalon Blvd)

AM	231	729	0	0	1583	AM
NOON	0	0	0	0	0	NOON
PM	522	1428	0	0	1438	PM
	1	3	0	0		

EASTBOUND (I-405 NB Ramps)

AM	NOON	PM	
608	0	777	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

WESTBOUND (I-405 NB Ramps)

PM	NOON	AM	
447	0	473	1
2	0	3	0.5
93	0	51	1.5
0	0	0	0
0	0	0	
PM	NOON	AM	

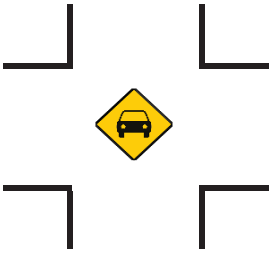
CONTROL: Signalized

	AM	NOON	PM
TEV	2971	0	3736
PHF	0.93		0.98

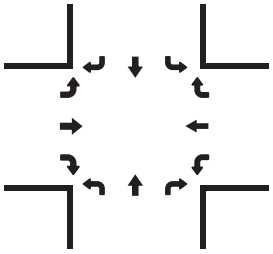
NORTHBOUND (Avalon Blvd)

PM	1521	0	253	991	0	PM
NOON	0	0	0	0	0	NOON
AM	780	0	374	1110	0	AM
		0	2	2	0	

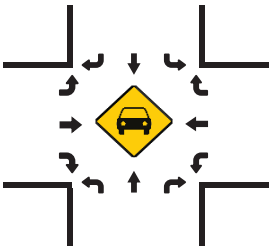
Total Vehicles (AM)



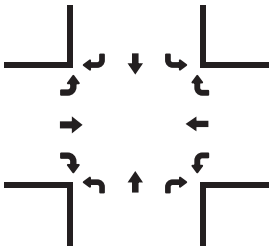
Total Vehicles (AM)



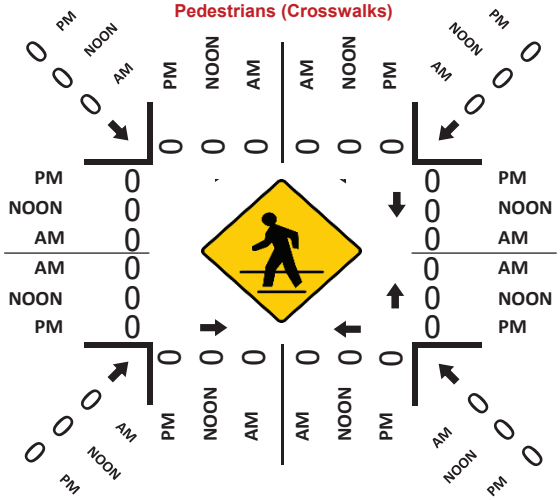
Total Vehicles (NOON)



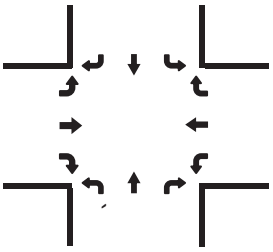
Total Vehicles (NOON)



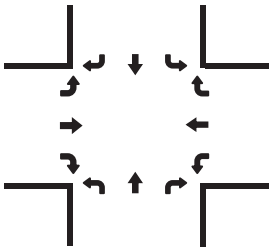
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

I-405 SB Ramps & Carson St

Peak Hour Turning Movement Count

ID: 19-05496-011
City: Carson

Day: Tuesday
Date: 08/27/2019

PEAK HOURS

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

I-405 SB Ramps — SOUTHBOUND

AM	3	0	0	0	25	AM
NOON	0	0	0	0	0	NOON
PM	4	0	0	0	32	PM
	1	0	0	0		

EASTBOUND — Carson St

AM	NOON	PM		
1255	0	1060	⇦	
0	0	3	↰	0
5	0	4	↱	1
674	0	1203	→	2
572	0	907	↴	1
AM	NOON	PM		

CONTROL

Signalized

TEV	2792 AM	0 NOON	3333 PM
PHF	0.92		0.95

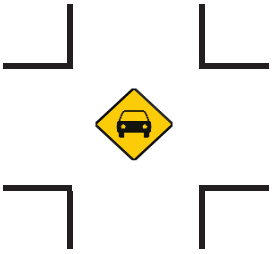
WESTBOUND — Carson St

PM	NOON	AM		
18	0	13	↰	0
1037	0	1210	←	3
69	0	70	↰	1
0	0	0	↰	0
1265	0	870	⇨	
PM	NOON	AM		

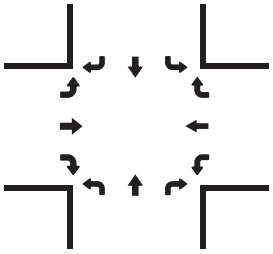
NORTHBOUND — I-405 SB Ramps

PM	976	0	16	10	62	PM
NOON	0	0	0	0	0	NOON
AM	642	0	42	7	196	AM
		0	1	0	1	

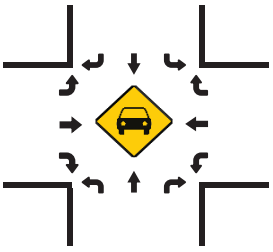
Total Vehicles (AM)



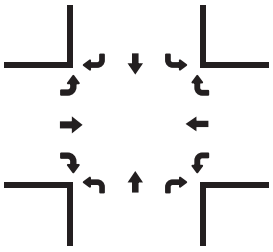
Total Vehicles (AM)



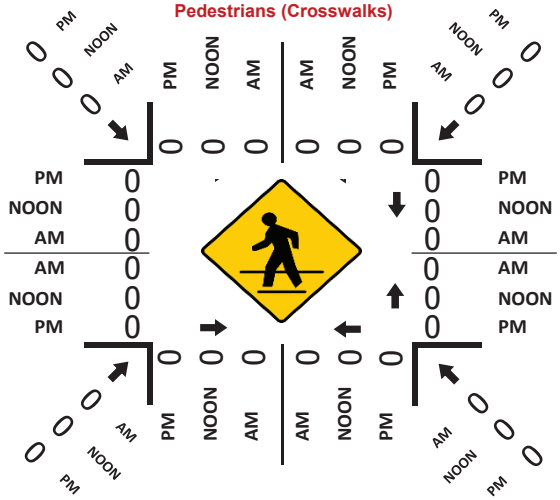
Total Vehicles (NOON)



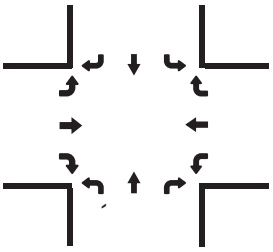
Total Vehicles (NOON)



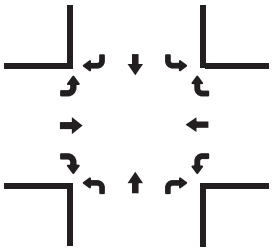
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

I-405 NB Ramps & Carson St

Peak Hour Turning Movement Count

ID: 19-05496-012
City: Carson

Day: Tuesday
Date: 08/27/2019

PEAK HOURS

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

I-405 NB Ramps — SOUTHBOUND

AM	465	16	15	1	388	AM
NOON	0	0	0	0	0	NOON
PM	524	12	34	3	425	PM
	1	0.5	0.5	0		

EASTBOUND — Carson St

AM	NOON	PM	
1302	0	1123	
0	0	0	0
104	0	140	1
732	0	1111	2
37	0	29	0
AM	NOON	PM	

WESTBOUND — Carson St

PM	NOON	AM	
251	0	282	1
564	0	827	2
28	0	17	1
1	0	0	0
1173	0	760	
PM	NOON	AM	

CONTROL

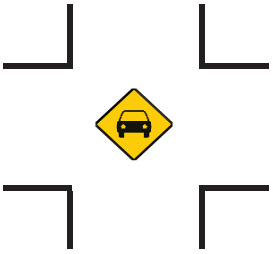
Signalized

TEV	2520 AM	0 NOON	2790 PM
PHF	0.91		0.94

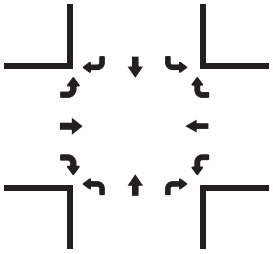
NORTHBOUND — I-405 NB Ramps

	0	0	0.5	0.5		
PM	69	0	35	31	27	PM
NOON	0	0	0	0	0	NOON
AM	70	0	10	1	13	AM

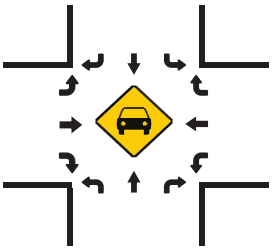
Total Vehicles (AM)



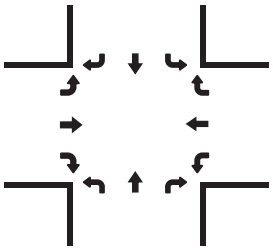
Total Vehicles (AM)



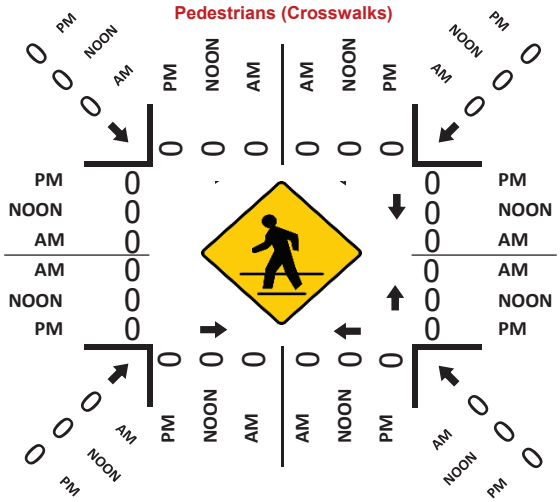
Total Vehicles (NOON)



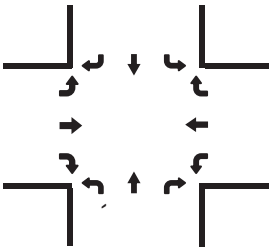
Total Vehicles (NOON)



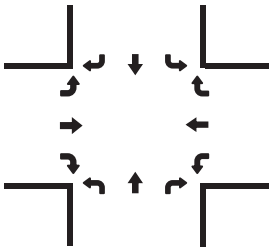
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



APPENDIX B:
FREEWAY RAMP QUEUING ANALYSIS

EXISTING

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	724	41	762	876
v/c Ratio	0.61	0.25	0.42	0.74
Control Delay	14.9	27.3	9.4	20.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.9	27.3	9.4	20.4
Queue Length 50th (ft)	80	13	74	127
Queue Length 95th (ft)	128	37	109	186
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	1192	164	1801	1181
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.61	0.25	0.42	0.74

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	83	375	208	38	701	0	0	737	69
Future Volume (veh/h)	0	0	0	83	375	208	38	701	0	0	737	69
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				90	408	226	41	762	0	0	801	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				137	636	376	165	1809	0	0	1189	
Arrive On Green				0.33	0.33	0.33	0.09	0.51	0.00	0.00	0.33	0.00
Sat Flow, veh/h				419	1944	1150	1781	3647	0	0	3741	0
Grp Volume(v), veh/h				397	0	327	41	762	0	0	801	0
Grp Sat Flow(s),veh/h/ln				1849	0	1663	1781	1777	0	0	1777	0
Q Serve(g_s), s				10.1	0.0	9.1	1.2	7.4	0.0	0.0	10.7	0.0
Cycle Q Clear(g_c), s				10.1	0.0	9.1	1.2	7.4	0.0	0.0	10.7	0.0
Prop In Lane				0.23		0.69	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				605	0	544	165	1809	0	0	1189	
V/C Ratio(X)				0.66	0.00	0.60	0.25	0.42	0.00	0.00	0.67	
Avail Cap(c_a), veh/h				605	0	544	165	1809	0	0	1189	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.8	0.0	15.5	23.2	8.4	0.0	0.0	15.7	0.0
Incr Delay (d2), s/veh				5.5	0.0	4.8	3.6	0.7	0.0	0.0	3.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.6	0.0	3.7	0.6	2.4	0.0	0.0	4.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				21.3	0.0	20.3	26.7	9.2	0.0	0.0	18.8	0.0
LnGrp LOS				C	A	C	C	A	A	A	B	
Approach Vol, veh/h					724			803			801	A
Approach Delay, s/veh					20.9			10.1			18.8	
Approach LOS					C			B			B	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	32.5		9.6	22.9		22.5						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	28.0		5.1	18.4		18.0						
Max Q Clear Time (g_c+I1), s	9.4		3.2	12.7		12.1						
Green Ext Time (p_c), s	5.2		0.0	2.6		2.3						

Intersection Summary		
HCM 6th Ctrl Delay	16.4	
HCM 6th LOS	B	

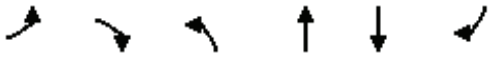
Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	1006	749	789	543	158
v/c Ratio	0.97	0.87	0.38	0.55	0.29
Control Delay	45.4	38.4	8.1	24.1	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	38.4	8.1	24.1	5.3
Queue Length 50th (ft)	190	159	83	104	0
Queue Length 95th (ft)	#318	#253	115	151	39
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	1034	858	2098	985	554
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.97	0.87	0.38	0.55	0.29

Intersection Summary

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



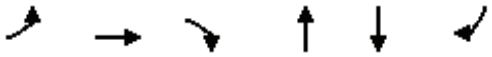
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	600	326	689	726	500	145
Future Volume (veh/h)	600	326	689	726	500	145
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	503	514	749	789	543	158
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	496	442	864	2107	990	442
Arrive On Green	0.28	0.28	0.25	0.59	0.28	0.28
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	503	514	749	789	543	158
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	19.5	19.5	14.5	8.1	9.1	5.6
Cycle Q Clear(g_c), s	19.5	19.5	14.5	8.1	9.1	5.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	496	442	864	2107	990	442
V/C Ratio(X)	1.01	1.16	0.87	0.37	0.55	0.36
Avail Cap(c_a), veh/h	496	442	864	2107	990	442
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	25.3	25.1	7.5	21.5	20.2
Incr Delay (d2), s/veh	43.9	96.1	11.4	0.5	2.2	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	26.6	7.0	2.7	3.9	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	69.1	121.3	36.5	8.0	23.7	22.5
LnGrp LOS	F	F	D	A	C	C
Approach Vol, veh/h	1017			1538	701	
Approach Delay, s/veh	95.5			21.9	23.4	
Approach LOS	F			C	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		46.0		24.0	22.0	24.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		41.5		19.5	17.5	19.5
Max Q Clear Time (g_c+I1), s		10.1		21.5	16.5	11.1
Green Ext Time (p_c), s		6.3		0.0	0.4	2.7

Intersection Summary		
HCM 6th Ctrl Delay		45.2
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	430	14	530	1308	635	226
v/c Ratio	0.34	0.01	0.76	0.87	0.40	0.27
Control Delay	12.3	10.0	18.9	20.9	10.2	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.3	10.0	18.9	20.9	10.2	2.5
Queue Length 50th (ft)	44	1	85	166	61	0
Queue Length 95th (ft)	72	5	#233	#296	93	28
Internal Link Dist (ft)		442		757	336	
Turn Bay Length (ft)						
Base Capacity (vph)	1270	1309	693	1502	1592	836
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.01	0.76	0.87	0.40	0.27

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	396	13	488	0	0	0	14	1107	83	0	584	208
Future Volume (veh/h)	396	13	488	0	0	0	14	1107	83	0	584	208
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				1870	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	430	14	0				15	1203	90	0	635	226
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	1279	1315					80	1462	109	0	1599	713
Arrive On Green	0.37	0.37	0.00				0.45	0.45	0.45	0.00	0.45	0.45
Sat Flow, veh/h	3456	3554	1585				13	3249	241	0	3647	1585
Grp Volume(v), veh/h	430	14	0				689	0	619	0	635	226
Grp Sat Flow(s),veh/h/ln	1728	1777	1585				1845	0	1659	0	1777	1585
Q Serve(g_s), s	4.5	0.1	0.0				1.2	0.0	16.4	0.0	6.0	4.6
Cycle Q Clear(g_c), s	4.5	0.1	0.0				16.1	0.0	16.4	0.0	6.0	4.6
Prop In Lane	1.00		1.00				0.02		0.15	0.00		1.00
Lane Grp Cap(c), veh/h	1279	1315					904	0	746	0	1599	713
V/C Ratio(X)	0.34	0.01					0.76	0.00	0.83	0.00	0.40	0.32
Avail Cap(c_a), veh/h	1279	1315					904	0	746	0	1599	713
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00				1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	10.0	0.0				12.0	0.0	12.1	0.0	9.2	8.8
Incr Delay (d2), s/veh	0.7	0.0	0.0				6.0	0.0	10.3	0.0	0.7	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0				6.7	0.0	6.8	0.0	2.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	10.0	0.0				18.0	0.0	22.4	0.0	9.9	10.0
LnGrp LOS	B	A					B	A	C	A	A	A
Approach Vol, veh/h		444	A					1308			861	
Approach Delay, s/veh		12.0						20.1			10.0	
Approach LOS		B						C			A	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	27.0	23.0	27.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.5	18.5	22.5
Max Q Clear Time (g_c+I1), s	18.4	6.5	8.0
Green Ext Time (p_c), s	2.9	1.3	4.5

Intersection Summary	
HCM 6th Ctrl Delay	15.4
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	37	38	514	414	1207	798	251
v/c Ratio	0.07	0.07	0.32	0.69	0.62	0.52	0.39
Control Delay	15.6	15.6	0.5	30.2	11.0	18.9	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay	15.6	15.6	0.5	30.2	11.3	18.9	4.6
Queue Length 50th (ft)	9	10	0	73	140	86	0
Queue Length 95th (ft)	29	29	0	#115	196	120	44
Internal Link Dist (ft)		901			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	504	507	1583	600	1946	1525	650
Starvation Cap Reductn	0	0	0	0	244	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.07	0.32	0.69	0.71	0.52	0.39

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	66	3	473	381	1110	0	0	734	231
Future Volume (veh/h)	0	0	0	66	3	473	381	1110	0	0	734	231
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				74	0	0	414	1207	0	0	798	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1069	0		605	1955	0	0	1532	
Arrive On Green				0.30	0.00	0.00	0.17	0.55	0.00	0.00	0.30	0.00
Sat Flow, veh/h				3563	0	1585	3456	3647	0	0	5274	1585
Grp Volume(v), veh/h				74	0	0	414	1207	0	0	798	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1777	0	0	1702	1585
Q Serve(g_s), s				0.9	0.0	0.0	6.7	13.9	0.0	0.0	7.8	0.0
Cycle Q Clear(g_c), s				0.9	0.0	0.0	6.7	13.9	0.0	0.0	7.8	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1069	0		605	1955	0	0	1532	
V/C Ratio(X)				0.07	0.00		0.68	0.62	0.00	0.00	0.52	
Avail Cap(c_a), veh/h				1069	0		605	1955	0	0	1532	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.0	0.0	0.0	23.2	9.2	0.0	0.0	17.4	0.0
Incr Delay (d2), s/veh				0.1	0.0	0.0	6.2	1.5	0.0	0.0	1.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.3	0.0	0.0	3.1	4.6	0.0	0.0	2.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				15.1	0.0	0.0	29.4	10.7	0.0	0.0	18.7	0.0
LnGrp LOS				B	A		C	B	A	A	B	
Approach Vol, veh/h					74	A		1621			798	A
Approach Delay, s/veh					15.1			15.5			18.7	
Approach LOS					B			B			B	

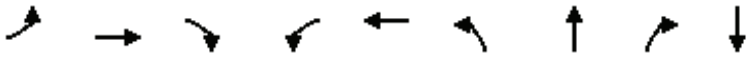
Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	37.5		15.0	22.5		22.5						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	33.0		10.5	18.0		18.0						
Max Q Clear Time (g_c+I1), s	15.9		8.7	9.8		2.9						
Green Ext Time (p_c), s	8.4		0.3	3.4		0.1						

Intersection Summary		
HCM 6th Ctrl Delay	16.5	
HCM 6th LOS	B	

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	5	733	622	76	1329	46	8	213	3
v/c Ratio	0.03	0.81	0.48	0.39	0.39	0.15	no cap	0.47	0.02
Control Delay	8.6	22.1	2.1	31.0	4.7	22.4		7.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	8.6	22.1	2.1	31.0	4.7	22.4	Error	7.8	0.0
Queue Length 50th (ft)	1	207	13	26	61	14	0	0	0
Queue Length 95th (ft)	6	#401	35	61	81	39	0	49	0
Internal Link Dist (ft)		1202			351		1055		58
Turn Bay Length (ft)	45			50				660	
Base Capacity (vph)	176	909	1287	197	3427	309	1	452	191
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.81	0.48	0.39	0.39	0.15	8.00	0.47	0.02

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	674	572	70	1210	13	42	7	196	0	0	3
Future Volume (veh/h)	5	674	572	70	1210	13	42	7	196	0	0	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	5	733	622	76	1315	14	46	8	213			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2			
Cap, veh/h	321	913	1051	199	3516	37	312	0	277			
Arrive On Green	0.49	0.49	0.49	0.11	0.68	0.68	0.17	0.17	0.17			
Sat Flow, veh/h	412	1870	1585	1781	5209	55	1781	0	1585			
Grp Volume(v), veh/h	5	733	622	76	859	470	46	0	213			
Grp Sat Flow(s),veh/h/ln	412	1870	1585	1781	1702	1860	1781	0	1585			
Q Serve(g_s), s	0.4	19.8	13.0	2.4	6.6	6.6	1.3	0.0	7.7			
Cycle Q Clear(g_c), s	0.4	19.8	13.0	2.4	6.6	6.6	1.3	0.0	7.7			
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00			
Lane Grp Cap(c), veh/h	321	913	1051	199	2298	1256	312	0	277			
V/C Ratio(X)	0.02	0.80	0.59	0.38	0.37	0.37	0.15	0.00	0.77			
Avail Cap(c_a), veh/h	321	913	1051	199	2298	1256	312	0	277			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	8.0	12.9	5.6	24.7	4.2	4.2	21.0	0.0	23.6			
Incr Delay (d2), s/veh	0.1	7.4	2.4	5.5	0.5	0.9	1.0	0.0	18.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	8.7	6.5	1.2	1.6	1.9	0.6	0.0	4.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	20.3	8.0	30.2	4.7	5.1	22.0	0.0	41.9			
LnGrp LOS	A	C	A	C	A	A	C	A	D			
Approach Vol, veh/h		1360			1405			259				
Approach Delay, s/veh		14.7			6.2			38.3				
Approach LOS		B			A			D				

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.2	33.8				45.0		15.0				
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5				
Max Green Setting (Gmax), s	6.7	29.3				40.5		10.5				
Max Q Clear Time (g_c+I1), s	4.4	21.8				8.6		9.7				
Green Ext Time (p_c), s	0.0	4.4				11.5		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			12.8									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	113	836	18	899	307	12	14	34	505
v/c Ratio	0.71	0.47	0.09	0.78	0.42	0.02	0.02	0.06	0.72
Control Delay	51.6	10.0	14.3	22.6	4.2	12.5	0.1	12.8	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	10.0	14.3	22.6	4.2	12.5	0.1	12.8	14.8
Queue Length 50th (ft)	37	84	4	136	0	3	0	7	62
Queue Length 95th (ft)	#105	123	16	#200	43	11	0	23	#177
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	160	1763	205	1158	724	540	611	569	703
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.47	0.09	0.78	0.42	0.02	0.02	0.06	0.72

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	732	37	17	827	282	10	1	13	16	16	465
Future Volume (veh/h)	104	732	37	17	827	282	10	1	13	16	16	465
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	113	796	40	18	899	307	11	1	14	17	17	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	1722	86	346	1163	519	564	46	533	338	308	
Arrive On Green	0.09	0.50	0.50	0.33	0.33	0.33	0.34	0.34	0.34	0.34	0.34	0.00
Sat Flow, veh/h	1781	3443	173	657	3554	1585	1303	137	1585	714	916	1585
Grp Volume(v), veh/h	113	411	425	18	899	307	12	0	14	34	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1839	657	1777	1585	1440	0	1585	1629	0	1585
Q Serve(g_s), s	3.4	8.3	8.3	1.0	12.5	8.9	0.0	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.4	8.3	8.3	1.0	12.5	8.9	0.2	0.0	0.3	0.7	0.0	0.0
Prop In Lane	1.00		0.09	1.00		1.00	0.92		1.00	0.50		1.00
Lane Grp Cap(c), veh/h	162	888	920	346	1163	519	610	0	533	646	0	
V/C Ratio(X)	0.70	0.46	0.46	0.05	0.77	0.59	0.02	0.00	0.03	0.05	0.00	
Avail Cap(c_a), veh/h	162	888	920	346	1163	519	610	0	533	646	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.3	8.9	8.9	12.8	16.7	15.4	12.2	0.0	12.2	12.3	0.0	0.0
Incr Delay (d2), s/veh	22.1	1.7	1.7	0.3	5.0	4.9	0.1	0.0	0.1	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	3.0	3.0	0.2	5.3	3.5	0.1	0.0	0.1	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	10.7	10.6	13.1	21.7	20.3	12.2	0.0	12.3	12.5	0.0	0.0
LnGrp LOS	D	B	B	B	C	C	B	A	B	B	A	
Approach Vol, veh/h		949			1224			26			34	A
Approach Delay, s/veh		14.9			21.2			12.3			12.5	
Approach LOS		B			C			B			B	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0		32.0		23.0	9.5	22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5		27.5		18.5	5.0	18.0				
Max Q Clear Time (g_c+I1), s		2.3		10.3		2.7	5.4	14.5				
Green Ext Time (p_c), s		0.0		5.0		0.1	0.0	2.2				

Intersection Summary												
HCM 6th Ctrl Delay			18.3									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	393	18	711	1434
v/c Ratio	0.38	0.13	0.34	0.97
Control Delay	10.9	30.4	7.6	37.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.9	30.4	7.6	37.1
Queue Length 50th (ft)	33	7	68	277
Queue Length 95th (ft)	65	25	97	#434
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	1036	136	2068	1477
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.38	0.13	0.34	0.97

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	72	118	172	17	654	0	1	1257	62
Future Volume (veh/h)	0	0	0	72	118	172	17	654	0	1	1257	62
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h				78	128	187	18	711	0	1	1366	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	2	2	2
Cap, veh/h				192	316	439	137	2078	0	56	1529	
Arrive On Green				0.28	0.28	0.28	0.08	0.58	0.00	0.44	0.44	0.00
Sat Flow, veh/h				695	1141	1585	1781	3647	0	0	3572	0
Grp Volume(v), veh/h				206	0	187	18	711	0	733	634	0
Grp Sat Flow(s),veh/h/ln				1836	0	1585	1781	1777	0	1870	1617	0
Q Serve(g_s), s				5.9	0.0	6.3	0.6	6.8	0.0	0.0	23.5	0.0
Cycle Q Clear(g_c), s				5.9	0.0	6.3	0.6	6.8	0.0	23.5	23.5	0.0
Prop In Lane				0.38		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				508	0	439	137	2078	0	875	709	
V/C Ratio(X)				0.41	0.00	0.43	0.13	0.34	0.00	0.84	0.89	
Avail Cap(c_a), veh/h				508	0	439	137	2078	0	875	709	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				19.1	0.0	19.3	28.0	7.0	0.0	16.9	16.9	0.0
Incr Delay (d2), s/veh				2.4	0.0	3.0	2.0	0.5	0.0	9.4	16.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.7	0.0	2.5	0.3	2.2	0.0	11.0	10.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				21.5	0.0	22.3	30.0	7.5	0.0	26.2	32.9	0.0
LnGrp LOS				C	A	C	C	A	A	C	C	
Approach Vol, veh/h					393			729			1367	A
Approach Delay, s/veh					21.9			8.0			29.3	
Approach LOS					C			A			C	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	42.5		9.5	33.0		22.5						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	38.0		5.0	28.5		18.0						
Max Q Clear Time (g_c+I1), s	8.8		2.6	25.5		8.3						
Green Ext Time (p_c), s	5.5		0.0	2.2		1.7						

Intersection Summary		
HCM 6th Ctrl Delay		21.9
HCM 6th LOS		C

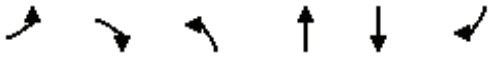
Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	630	739	535	874	255
v/c Ratio	0.61	0.93	0.26	0.87	0.40
Control Delay	17.9	46.1	7.0	33.5	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	46.1	7.0	33.5	5.0
Queue Length 50th (ft)	80	148	48	172	0
Queue Length 95th (ft)	129	#248	71	#271	47
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	1033	792	2068	1007	632
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	0.93	0.26	0.87	0.40

Intersection Summary

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



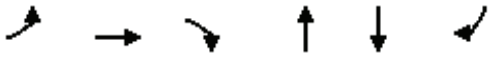
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	377	202	680	492	804	235
Future Volume (veh/h)	377	202	680	492	804	235
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	315	322	739	535	874	255
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	493	439	797	2078	1011	451
Arrive On Green	0.28	0.28	0.23	0.58	0.28	0.28
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	315	322	739	535	874	255
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	10.1	12.0	13.6	4.8	15.2	8.9
Cycle Q Clear(g_c), s	10.1	12.0	13.6	4.8	15.2	8.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	493	439	797	2078	1011	451
V/C Ratio(X)	0.64	0.73	0.93	0.26	0.86	0.57
Avail Cap(c_a), veh/h	493	439	797	2078	1011	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	21.3	24.5	6.6	22.1	19.8
Incr Delay (d2), s/veh	6.2	10.4	18.3	0.3	9.8	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	11.3	7.2	1.5	7.2	3.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.9	31.7	42.8	6.9	31.8	24.9
LnGrp LOS	C	C	D	A	C	C
Approach Vol, veh/h	637			1274	1129	
Approach Delay, s/veh	29.3			27.7	30.3	
Approach LOS	C			C	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		42.5		22.5	19.5	23.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		38.0		18.0	15.0	18.5
Max Q Clear Time (g_c+I1), s		6.8		14.0	15.6	17.2
Green Ext Time (p_c), s		4.0		0.9	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	239	252	385	1453	1133	477
v/c Ratio	0.23	0.24	0.73	0.80	0.58	0.44
Control Delay	16.5	16.5	25.7	14.7	2.2	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	16.5	16.5	25.7	14.7	2.3	1.2
Queue Length 50th (ft)	32	35	100	190	16	0
Queue Length 95th (ft)	56	60	#222	275	m20	m1
Internal Link Dist (ft)		442		757	336	
Turn Bay Length (ft)						
Base Capacity (vph)	1035	1067	525	1816	1940	1083
Starvation Cap Reductn	0	0	0	0	87	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.24	0.73	0.80	0.61	0.44

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	232	354	0	0	0	10	1082	245	0	1042	439
Future Volume (veh/h)	220	232	354	0	0	0	10	1082	245	0	1042	439
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				1870	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	239	252	0				11	1176	266	0	1133	477
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	1042	1072					65	1532	342	0	1949	869
Arrive On Green	0.30	0.30	0.00				0.55	0.55	0.55	0.00	0.55	0.55
Sat Flow, veh/h	3456	3554	1585				7	2794	623	0	3647	1585
Grp Volume(v), veh/h	239	252	0				775	0	678	0	1133	477
Grp Sat Flow(s),veh/h/ln	1728	1777	1585				1835	0	1590	0	1777	1585
Q Serve(g_s), s	3.1	3.2	0.0				0.0	0.0	20.2	0.0	12.7	11.7
Cycle Q Clear(g_c), s	3.1	3.2	0.0				19.2	0.0	20.2	0.0	12.7	11.7
Prop In Lane	1.00		1.00				0.01		0.39	0.00		1.00
Lane Grp Cap(c), veh/h	1042	1072					1067	0	872	0	1949	869
V/C Ratio(X)	0.23	0.24					0.73	0.00	0.78	0.00	0.58	0.55
Avail Cap(c_a), veh/h	1042	1072					1067	0	872	0	1949	869
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00				1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	15.7	15.7	0.0				10.4	0.0	10.7	0.0	9.0	8.8
Incr Delay (d2), s/veh	0.5	0.5	0.0				4.3	0.0	6.8	0.0	1.3	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.3	0.0				7.4	0.0	7.1	0.0	4.2	12.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	16.3	0.0				14.8	0.0	17.5	0.0	10.3	11.2
LnGrp LOS	B	B					B	A	B	A	B	B
Approach Vol, veh/h		491	A					1453			1610	
Approach Delay, s/veh		16.2						16.0			10.6	
Approach LOS		B						B			B	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		37.4		22.6		37.4						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		32.9		18.1		32.9						
Max Q Clear Time (g_c+I1), s		22.2		5.2		14.7						
Green Ext Time (p_c), s		7.1		2.0		9.9						

Intersection Summary												
HCM 6th Ctrl Delay			13.6									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	58	57	486	280	1077	1557	567
v/c Ratio	0.12	0.11	0.31	0.75	0.55	0.84	0.60
Control Delay	16.1	16.0	0.5	36.2	11.8	22.6	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	16.0	0.5	36.2	11.8	22.6	4.6
Queue Length 50th (ft)	15	15	0	52	134	182	0
Queue Length 95th (ft)	40	40	0	m70	196	238	56
Internal Link Dist (ft)		517			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	504	506	1583	371	1946	1864	939
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.11	0.31	0.75	0.55	0.84	0.60

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	104	2	447	258	991	0	0	1432	522
Future Volume (veh/h)	0	0	0	104	2	447	258	991	0	0	1432	522
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				114	0	0	280	1077	0	0	1557	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1069	0		374	1955	0	0	1872	
Arrive On Green				0.30	0.00	0.00	0.11	0.55	0.00	0.00	0.37	0.00
Sat Flow, veh/h				3563	0	1585	3456	3647	0	0	5274	1585
Grp Volume(v), veh/h				114	0	0	280	1077	0	0	1557	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1777	0	0	1702	1585
Q Serve(g_s), s				1.4	0.0	0.0	4.7	11.7	0.0	0.0	16.7	0.0
Cycle Q Clear(g_c), s				1.4	0.0	0.0	4.7	11.7	0.0	0.0	16.7	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1069	0		374	1955	0	0	1872	
V/C Ratio(X)				0.11	0.00		0.75	0.55	0.00	0.00	0.83	
Avail Cap(c_a), veh/h				1069	0		374	1955	0	0	1872	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.2	0.0	0.0	26.0	8.7	0.0	0.0	17.3	0.0
Incr Delay (d2), s/veh				0.2	0.0	0.0	12.8	1.1	0.0	0.0	4.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.5	0.0	0.0	2.5	3.9	0.0	0.0	6.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				15.4	0.0	0.0	38.8	9.8	0.0	0.0	21.8	0.0
LnGrp LOS				B	A		D	A	A	A	C	
Approach Vol, veh/h					114	A		1357			1557	A
Approach Delay, s/veh					15.4			15.8			21.8	
Approach LOS					B			B			C	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	37.5		11.0	26.5		22.5						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	33.0		6.5	22.0		18.0						
Max Q Clear Time (g_c+I1), s	13.7		6.7	18.7		3.4						
Green Ext Time (p_c), s	7.8		0.0	2.7		0.3						

Intersection Summary	
HCM 6th Ctrl Delay	18.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBT
Lane Group Flow (vph)	8	1308	986	75	1147	17	67	4
v/c Ratio	0.03	1.22	0.73	0.59	0.33	0.05	0.18	0.03
Control Delay	8.9	131.5	5.9	60.5	5.6	29.3	8.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	131.5	5.9	60.5	5.6	29.3	8.1	0.0
Queue Length 50th (ft)	2	~925	94	42	80	8	0	0
Queue Length 95th (ft)	8	#1174	191	#102	99	25	30	0
Internal Link Dist (ft)		1202			351			58
Turn Bay Length (ft)	45			50			660	
Base Capacity (vph)	251	1068	1358	127	3528	361	381	127
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	1.22	0.73	0.59	0.33	0.05	0.18	0.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1203	907	69	1037	18	16	0	62	0	0	4
Future Volume (veh/h)	7	1203	907	69	1037	18	16	0	62	0	0	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	0	1870			
Adj Flow Rate, veh/h	8	1308	986	75	1127	20	17	0	67			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	0	2			
Cap, veh/h	361	1072	1233	129	3593	64	364	0	324			
Arrive On Green	0.57	0.57	0.57	0.07	0.70	0.70	0.20	0.00	0.20			
Sat Flow, veh/h	490	1870	1585	1781	5166	92	1781	0	1585			
Grp Volume(v), veh/h	8	1308	986	75	742	405	17	0	67			
Grp Sat Flow(s),veh/h/ln	490	1870	1585	1781	1702	1854	1781	0	1585			
Q Serve(g_s), s	0.6	51.6	32.9	3.7	7.6	7.6	0.7	0.0	3.2			
Cycle Q Clear(g_c), s	0.6	51.6	32.9	3.7	7.6	7.6	0.7	0.0	3.2			
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00			
Lane Grp Cap(c), veh/h	361	1072	1233	129	2368	1289	364	0	324			
V/C Ratio(X)	0.02	1.22	0.80	0.58	0.31	0.31	0.05	0.00	0.21			
Avail Cap(c_a), veh/h	361	1072	1233	129	2368	1289	364	0	324			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	8.3	19.2	5.9	40.4	5.3	5.3	28.8	0.0	29.7			
Incr Delay (d2), s/veh	0.1	107.5	5.5	17.9	0.3	0.6	0.2	0.0	1.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	51.6	22.2	2.2	2.4	2.7	0.3	0.0	1.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.4	126.7	11.4	58.3	5.7	6.0	29.0	0.0	31.2			
LnGrp LOS	A	F	B	E	A	A	C	A	C			
Approach Vol, veh/h		2302			1222			84				
Approach Delay, s/veh		76.9			9.0			30.7				
Approach LOS		E			A			C				

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		22.9	11.0	56.1				67.1				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		18.4	6.5	51.6				62.6				
Max Q Clear Time (g_c+I1), s		5.2	5.7	53.6				9.6				
Green Ext Time (p_c), s		0.2	0.0	0.0				10.3				

Intersection Summary												
HCM 6th Ctrl Delay			52.8									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	152	1240	32	613	273	72	29	53	570
v/c Ratio	0.61	0.68	0.25	0.57	0.41	0.14	0.05	0.11	0.72
Control Delay	36.4	13.0	22.2	20.3	4.6	14.9	0.1	14.7	11.7
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.4	13.2	22.2	20.3	4.6	14.9	0.1	14.7	11.7
Queue Length 50th (ft)	53	159	9	97	0	18	0	13	46
Queue Length 95th (ft)	#119	223	30	143	45	43	0	34	151
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	250	1830	126	1067	668	533	597	499	791
Starvation Cap Reductn	0	90	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.71	0.25	0.57	0.41	0.14	0.05	0.11	0.72

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1111	29	29	564	251	35	31	27	37	12	524
Future Volume (veh/h)	140	1111	29	29	564	251	35	31	27	37	12	524
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	1208	32	32	613	273	38	34	29	40	13	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	1833	49	240	1072	478	346	283	526	437	128	
Arrive On Green	0.14	0.52	0.52	0.30	0.30	0.30	0.33	0.33	0.33	0.33	0.33	0.00
Sat Flow, veh/h	1781	3537	94	449	3554	1585	767	854	1585	999	386	1585
Grp Volume(v), veh/h	152	607	633	32	613	273	72	0	29	53	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1854	449	1777	1585	1621	0	1585	1384	0	1585
Q Serve(g_s), s	4.8	15.0	15.0	3.4	8.7	8.7	0.0	0.0	0.7	0.7	0.0	0.0
Cycle Q Clear(g_c), s	4.8	15.0	15.0	5.4	8.7	8.7	1.6	0.0	0.7	2.3	0.0	0.0
Prop In Lane	1.00		0.05	1.00		1.00	0.53		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	252	921	961	240	1072	478	629	0	526	564	0	
V/C Ratio(X)	0.60	0.66	0.66	0.13	0.57	0.57	0.11	0.00	0.06	0.09	0.00	
Avail Cap(c_a), veh/h	252	921	961	240	1072	478	629	0	526	564	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.2	10.6	10.6	17.3	17.7	17.7	13.9	0.0	13.6	14.1	0.0	0.0
Incr Delay (d2), s/veh	10.2	3.7	3.5	1.1	2.2	4.9	0.4	0.0	0.2	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	5.7	5.9	0.4	3.6	3.5	0.7	0.0	0.3	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	14.3	14.1	18.4	19.9	22.6	14.3	0.0	13.8	14.4	0.0	0.0
LnGrp LOS	C	B	B	B	B	C	B	A	B	B	A	
Approach Vol, veh/h		1392			918			101			53	A
Approach Delay, s/veh		16.4			20.6			14.2			14.4	
Approach LOS		B			C			B			B	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		24.4		35.6		24.4	13.0	22.6				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.9		31.1		19.9	8.5	18.1				
Max Q Clear Time (g_c+I1), s		3.6		17.0		4.3	6.8	10.7				
Green Ext Time (p_c), s		0.3		7.2		0.2	0.1	3.2				

Intersection Summary												
HCM 6th Ctrl Delay			17.8									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

EXISTING PLUS PROJECT

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	731	41	836	968
v/c Ratio	0.65	0.27	0.44	0.72
Control Delay	18.1	14.3	1.0	19.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.1	14.3	1.0	19.2
Queue Length 50th (ft)	97	14	7	148
Queue Length 95th (ft)	150	m15	m9	212
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	1118	150	1916	1345
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.65	0.27	0.44	0.72

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	89	375	208	38	769	0	0	822	69
Future Volume (veh/h)	0	0	0	89	375	208	38	769	0	0	822	69
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				97	408	226	41	836	0	0	893	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				138	594	351	151	1925	0	0	1356	
Arrive On Green				0.31	0.31	0.31	0.17	1.00	0.00	0.00	0.38	0.00
Sat Flow, veh/h				448	1927	1139	1781	3647	0	0	3741	0
Grp Volume(v), veh/h				401	0	330	41	836	0	0	893	0
Grp Sat Flow(s),veh/h/ln				1848	0	1665	1781	1777	0	0	1777	0
Q Serve(g_s), s				11.5	0.0	10.3	1.2	0.0	0.0	0.0	12.5	0.0
Cycle Q Clear(g_c), s				11.5	0.0	10.3	1.2	0.0	0.0	0.0	12.5	0.0
Prop In Lane				0.24		0.68	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				570	0	513	151	1925	0	0	1356	
V/C Ratio(X)				0.70	0.00	0.64	0.27	0.43	0.00	0.00	0.66	
Avail Cap(c_a), veh/h				570	0	513	151	1925	0	0	1356	
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				18.3	0.0	17.9	23.3	0.0	0.0	0.0	15.3	0.0
Incr Delay (d2), s/veh				7.1	0.0	6.1	4.4	0.7	0.0	0.0	2.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.5	0.0	4.4	0.7	0.2	0.0	0.0	4.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.4	0.0	24.0	27.6	0.7	0.0	0.0	17.8	0.0
LnGrp LOS				C	A	C	C	A	A	A	B	
Approach Vol, veh/h					731			877			893	A
Approach Delay, s/veh					24.8			2.0			17.8	
Approach LOS					C			A			B	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	37.0		9.6	27.4		23.0						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	32.5		5.1	22.9		18.5						
Max Q Clear Time (g_c+I1), s	2.0		3.2	14.5		13.5						
Green Ext Time (p_c), s	6.8		0.0	3.9		2.1						

Intersection Summary		
HCM 6th Ctrl Delay	14.3	
HCM 6th LOS	B	

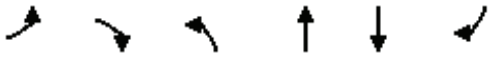
Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	1153	749	789	560	487
v/c Ratio	0.97	0.90	0.40	0.62	0.63
Control Delay	44.3	44.7	10.9	29.8	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	44.7	10.9	29.8	6.8
Queue Length 50th (ft)	260	186	109	130	0
Queue Length 95th (ft)	#400	#287	147	182	74
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	1190	836	1968	906	767
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.97	0.90	0.40	0.62	0.63

Intersection Summary

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



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	694	367	689	726	515	448
Future Volume (veh/h)	694	367	689	726	515	448
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	576	589	749	789	560	487
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	590	525	842	1977	911	406
Arrive On Green	0.33	0.33	0.24	0.56	0.26	0.26
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	576	589	749	789	560	487
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	25.6	26.5	16.7	10.1	11.1	20.5
Cycle Q Clear(g_c), s	25.6	26.5	16.7	10.1	11.1	20.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	590	525	842	1977	911	406
V/C Ratio(X)	0.98	1.12	0.89	0.40	0.61	1.20
Avail Cap(c_a), veh/h	590	525	842	1977	911	406
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	26.8	29.2	10.1	26.3	29.8
Incr Delay (d2), s/veh	31.6	77.2	13.5	0.6	3.1	111.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	30.7	8.2	3.7	4.9	20.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	58.1	104.0	42.7	10.7	29.4	140.8
LnGrp LOS	E	F	D	B	C	F
Approach Vol, veh/h	1165			1538	1047	
Approach Delay, s/veh	81.3			26.3	81.2	
Approach LOS	F			C	F	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		49.0		31.0	24.0	25.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		44.5		26.5	19.5	20.5
Max Q Clear Time (g_c+I1), s		12.1		28.5	18.7	22.5
Green Ext Time (p_c), s		6.4		0.0	0.3	0.0

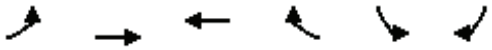
Intersection Summary	
HCM 6th Ctrl Delay	58.7
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	472	377	204	950	183
v/c Ratio	0.41	0.47	0.13	0.48	0.12
Control Delay	11.6	16.5	0.2	7.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	16.5	0.2	7.3	0.1
Queue Length 50th (ft)	21	44	0	62	0
Queue Length 95th (ft)	26	66	0	119	0
Internal Link Dist (ft)	735	442		1084	
Turn Bay Length (ft)				450	
Base Capacity (vph)	2034	1415	1583	1963	1583
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.23	0.27	0.13	0.48	0.12

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑	↱	↰↰	↱
Traffic Volume (veh/h)	0	434	347	188	874	168
Future Volume (veh/h)	0	434	347	188	874	168
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	472	377	0	950	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	2
Cap, veh/h	0	964	671		2112	
Arrive On Green	0.00	0.06	0.19	0.00	0.61	0.00
Sat Flow, veh/h	0	5443	3647	1585	3456	1585
Grp Volume(v), veh/h	0	472	377	0	950	0
Grp Sat Flow(s),veh/h/ln	0	1702	1777	1585	1728	1585
Q Serve(g_s), s	0.0	4.0	4.3	0.0	6.6	0.0
Cycle Q Clear(g_c), s	0.0	4.0	4.3	0.0	6.6	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	964	671		2112	
V/C Ratio(X)	0.00	0.49	0.56		0.45	
Avail Cap(c_a), veh/h	0	2042	1421		2112	
HCM Platoon Ratio	1.00	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.98	0.85	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	19.0	16.6	0.0	4.7	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.6	0.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	1.6	0.0	1.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	19.4	17.2	0.0	5.4	0.0
LnGrp LOS	A	B	B		A	
Approach Vol, veh/h		472	377	A	950	A
Approach Delay, s/veh		19.4	17.2		5.4	
Approach LOS		B	B		A	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			13.0		32.0	13.0
Change Period (Y+Rc), s			4.5		4.5	4.5
Max Green Setting (Gmax), s			18.0		18.0	18.0
Max Q Clear Time (g_c+I1), s			6.0		8.6	6.3
Green Ext Time (p_c), s			2.5		2.8	1.9

Intersection Summary		
HCM 6th Ctrl Delay		11.5
HCM 6th LOS		B

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	564	208	675	166	1303	713	452
v/c Ratio	0.42	0.15	0.95	0.61	0.83	0.59	0.47
Control Delay	13.4	11.2	40.2	24.8	19.4	14.0	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	11.2	40.2	24.8	19.4	14.0	3.1
Queue Length 50th (ft)	66	22	165	39	183	86	0
Queue Length 95th (ft)	101	40	#371	#119	#275	133	41
Internal Link Dist (ft)		442			757	336	
Turn Bay Length (ft)				120			
Base Capacity (vph)	1341	1383	709	270	1570	1204	955
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.15	0.95	0.61	0.83	0.59	0.47

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	519	191	621	0	0	0	153	1116	83	36	620	416
Future Volume (veh/h)	519	191	621	0	0	0	153	1116	83	36	620	416
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	564	208	0				166	1213	90	39	674	452
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	1351	1389					263	1494	111	95	1256	706
Arrive On Green	0.39	0.39	0.00				0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	3456	3554	1585				500	3354	248	48	2819	1585
Grp Volume(v), veh/h	564	208	0				166	642	661	314	399	452
Grp Sat Flow(s),veh/h/ln	1728	1777	1585				500	1777	1826	1250	1617	1585
Q Serve(g_s), s	6.5	2.1	0.0				14.5	17.2	17.3	1.9	10.0	12.2
Cycle Q Clear(g_c), s	6.5	2.1	0.0				24.5	17.2	17.3	19.2	10.0	12.2
Prop In Lane	1.00		1.00				1.00		0.14	0.12		1.00
Lane Grp Cap(c), veh/h	1351	1389					263	792	813	630	720	706
V/C Ratio(X)	0.42	0.15					0.63	0.81	0.81	0.50	0.55	0.64
Avail Cap(c_a), veh/h	1351	1389					263	792	813	630	720	706
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	10.8	0.0				21.7	13.2	13.3	10.6	11.2	11.8
Incr Delay (d2), s/veh	1.0	0.2	0.0				11.0	8.8	8.7	2.8	3.1	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.8	0.0				2.9	7.5	7.8	2.6	3.6	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	11.1	0.0				32.7	22.1	22.0	13.4	14.3	16.2
LnGrp LOS	B	B					C	C	C	B	B	B
Approach Vol, veh/h		772	A					1469			1165	
Approach Delay, s/veh		12.6						23.2			14.8	
Approach LOS		B						C			B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	29.0	26.0	29.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	24.5	21.5	24.5
Max Q Clear Time (g_c+I1), s	26.5	8.5	21.2
Green Ext Time (p_c), s	0.0	2.9	2.0

Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	149	152	534	548	1216	877	251
v/c Ratio	0.30	0.30	0.34	0.91	0.62	0.58	0.39
Control Delay	18.1	18.2	0.6	47.7	11.1	19.6	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay	18.1	18.2	0.6	47.7	11.4	19.6	4.6
Queue Length 50th (ft)	43	44	0	101	142	97	0
Queue Length 95th (ft)	86	87	0	#185	198	132	44
Internal Link Dist (ft)		517			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	504	505	1583	600	1946	1525	650
Starvation Cap Reductn	0	0	0	0	243	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.30	0.34	0.91	0.71	0.58	0.39

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	274	3	491	504	1119	0	0	807	231
Future Volume (veh/h)	0	0	0	274	3	491	504	1119	0	0	807	231
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				300	0	0	548	1216	0	0	877	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1069	0		605	1955	0	0	1532	
Arrive On Green				0.30	0.00	0.00	0.17	0.55	0.00	0.00	0.30	0.00
Sat Flow, veh/h				3563	0	1585	3456	3647	0	0	5274	1585
Grp Volume(v), veh/h				300	0	0	548	1216	0	0	877	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1777	0	0	1702	1585
Q Serve(g_s), s				3.9	0.0	0.0	9.3	14.0	0.0	0.0	8.7	0.0
Cycle Q Clear(g_c), s				3.9	0.0	0.0	9.3	14.0	0.0	0.0	8.7	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1069	0		605	1955	0	0	1532	
V/C Ratio(X)				0.28	0.00		0.91	0.62	0.00	0.00	0.57	
Avail Cap(c_a), veh/h				1069	0		605	1955	0	0	1532	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				16.1	0.0	0.0	24.3	9.2	0.0	0.0	17.7	0.0
Incr Delay (d2), s/veh				0.7	0.0	0.0	19.6	1.5	0.0	0.0	1.6	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.5	0.0	0.0	5.2	4.7	0.0	0.0	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				16.7	0.0	0.0	43.9	10.7	0.0	0.0	19.3	0.0
LnGrp LOS				B	A		D	B	A	A	B	
Approach Vol, veh/h					300	A		1764			877	A
Approach Delay, s/veh					16.7			21.0			19.3	
Approach LOS					B			C			B	

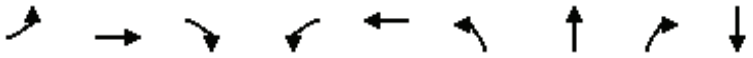
Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	37.5		15.0	22.5		22.5						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	33.0		10.5	18.0		18.0						
Max Q Clear Time (g_c+I1), s	16.0		11.3	10.7		5.9						
Green Ext Time (p_c), s	8.4		0.0	3.4		0.8						

Intersection Summary	
HCM 6th Ctrl Delay	20.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	5	810	622	76	1418	46	8	213	3
v/c Ratio	0.04	0.89	0.47	0.59	0.45	0.10	no cap	0.37	0.02
Control Delay	11.2	32.4	2.3	54.0	8.0	21.9		5.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	11.2	32.4	2.3	54.0	8.0	21.9	Error	5.7	0.0
Queue Length 50th (ft)	1	324	26	35	112	16	0	0	0
Queue Length 95th (ft)	7	#560	48	#92	141	41	0	48	0
Internal Link Dist (ft)		1202			351		1055		58
Turn Bay Length (ft)	45			50				660	
Base Capacity (vph)	129	906	1331	129	3151	460	1	569	153
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.89	0.47	0.59	0.45	0.10	8.00	0.37	0.02

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	745	572	70	1292	13	42	7	196	0	0	3
Future Volume (veh/h)	5	745	572	70	1292	13	42	7	196	0	0	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	5	810	622	76	1404	14	46	8	213			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2			
Cap, veh/h	227	910	1184	131	3232	32	463	0	412			
Arrive On Green	0.49	0.49	0.49	0.07	0.62	0.62	0.26	0.26	0.26			
Sat Flow, veh/h	379	1870	1585	1781	5213	52	1781	0	1585			
Grp Volume(v), veh/h	5	810	622	76	917	501	46	0	213			
Grp Sat Flow(s),veh/h/ln	379	1870	1585	1781	1702	1861	1781	0	1585			
Q Serve(g_s), s	0.7	29.4	12.3	3.1	10.5	10.5	1.5	0.0	8.6			
Cycle Q Clear(g_c), s	11.2	29.4	12.3	3.1	10.5	10.5	1.5	0.0	8.6			
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00			
Lane Grp Cap(c), veh/h	227	910	1184	131	2111	1154	463	0	412			
V/C Ratio(X)	0.02	0.89	0.53	0.58	0.43	0.43	0.10	0.00	0.52			
Avail Cap(c_a), veh/h	227	910	1184	131	2111	1154	463	0	412			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	16.2	17.4	4.0	33.6	7.4	7.4	21.1	0.0	23.7			
Incr Delay (d2), s/veh	0.2	12.7	1.7	17.5	0.7	1.2	0.4	0.0	4.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	14.4	8.5	1.9	3.3	3.8	0.6	0.0	3.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	30.1	5.6	51.2	8.1	8.6	21.5	0.0	28.3			
LnGrp LOS	B	C	A	D	A	A	C	A	C			
Approach Vol, veh/h		1437			1494			259				
Approach Delay, s/veh		19.5			10.4			27.1				
Approach LOS		B			B			C				

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		24.0	10.0	41.0				51.0				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		19.5	5.5	36.5				46.5				
Max Q Clear Time (g_c+I1), s		10.6	5.1	31.4				12.5				
Green Ext Time (p_c), s		0.5	0.0	3.4				12.8				

Intersection Summary												
HCM 6th Ctrl Delay			15.9									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	113	913	18	988	307	12	14	34	505
v/c Ratio	0.59	0.49	0.13	0.82	0.41	0.02	0.02	0.06	0.72
Control Delay	40.5	10.2	16.5	25.2	4.0	14.0	0.1	14.5	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.5	10.2	16.5	25.2	4.0	14.0	0.1	14.5	14.8
Queue Length 50th (ft)	40	100	4	167	0	3	0	8	63
Queue Length 95th (ft)	#99	142	18	#249	44	12	0	25	#175
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	191	1850	141	1209	742	522	588	550	702
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.49	0.13	0.82	0.41	0.02	0.02	0.06	0.72

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	803	37	17	909	282	10	1	13	16	16	465
Future Volume (veh/h)	104	803	37	17	909	282	10	1	13	16	16	465
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	113	873	40	18	988	307	11	1	14	17	17	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	1817	83	231	1214	542	539	44	515	323	296	
Arrive On Green	0.11	0.52	0.52	0.34	0.34	0.34	0.32	0.32	0.32	0.32	0.32	0.00
Sat Flow, veh/h	1781	3460	159	611	3554	1585	1305	136	1585	718	910	1585
Grp Volume(v), veh/h	113	448	465	18	988	307	12	0	14	34	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1842	611	1777	1585	1441	0	1585	1628	0	1585
Q Serve(g_s), s	3.6	9.6	9.6	1.5	15.2	9.5	0.0	0.0	0.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.6	9.6	9.6	11.1	15.2	9.5	0.3	0.0	0.4	0.7	0.0	0.0
Prop In Lane	1.00		0.09	1.00		1.00	0.92		1.00	0.50		1.00
Lane Grp Cap(c), veh/h	193	933	967	231	1214	542	583	0	515	619	0	
V/C Ratio(X)	0.59	0.48	0.48	0.08	0.81	0.57	0.02	0.00	0.03	0.05	0.00	
Avail Cap(c_a), veh/h	193	933	967	231	1214	542	583	0	515	619	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.5	9.1	9.1	20.7	18.0	16.1	13.8	0.0	13.8	13.9	0.0	0.0
Incr Delay (d2), s/veh	12.4	1.8	1.7	0.7	6.0	4.3	0.1	0.0	0.1	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.5	3.6	0.2	6.5	3.7	0.1	0.0	0.1	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	10.8	10.8	21.4	24.0	20.4	13.8	0.0	13.9	14.1	0.0	0.0
LnGrp LOS	D	B	B	C	C	C	B	A	B	B	A	
Approach Vol, veh/h		1026			1313			26			34	A
Approach Delay, s/veh		13.8			23.2			13.9			14.1	
Approach LOS		B			C			B			B	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		24.0		36.0		24.0	11.0	25.0				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.5		31.5		19.5	6.5	20.5				
Max Q Clear Time (g_c+I1), s		2.4		11.6		2.7	5.6	17.2				
Green Ext Time (p_c), s		0.0		5.9		0.1	0.0	2.3				

Intersection Summary												
HCM 6th Ctrl Delay			18.9									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	410	18	845	1542
v/c Ratio	0.44	0.15	0.37	0.89
Control Delay	14.6	36.2	7.0	24.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.6	36.2	7.0	24.8
Queue Length 50th (ft)	44	8	85	315
Queue Length 95th (ft)	83	27	116	#481
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	925	118	2264	1727
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.44	0.15	0.37	0.89

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	87	118	172	17	777	0	1	1356	62
Future Volume (veh/h)	0	0	0	87	118	172	17	777	0	1	1356	62
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h				95	128	187	18	845	0	1	1474	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	2	2	2
Cap, veh/h				187	252	380	119	2274	0	48	1790	
Arrive On Green				0.24	0.24	0.24	0.07	0.64	0.00	0.51	0.51	0.00
Sat Flow, veh/h				780	1051	1585	1781	3647	0	0	3572	0
Grp Volume(v), veh/h				223	0	187	18	845	0	791	684	0
Grp Sat Flow(s),veh/h/ln				1831	0	1585	1781	1777	0	1870	1617	0
Q Serve(g_s), s				7.9	0.0	7.6	0.7	8.4	0.0	0.0	26.8	0.0
Cycle Q Clear(g_c), s				7.9	0.0	7.6	0.7	8.4	0.0	26.8	26.8	0.0
Prop In Lane				0.43		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				440	0	380	119	2274	0	1008	830	
V/C Ratio(X)				0.51	0.00	0.49	0.15	0.37	0.00	0.78	0.82	
Avail Cap(c_a), veh/h				440	0	380	119	2274	0	1008	830	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				24.7	0.0	24.6	33.0	6.4	0.0	15.4	15.4	0.0
Incr Delay (d2), s/veh				4.1	0.0	4.5	2.7	0.5	0.0	6.1	9.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.8	0.0	3.2	0.4	2.7	0.0	11.6	10.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.8	0.0	29.0	35.7	6.8	0.0	21.5	24.5	0.0
LnGrp LOS				C	A	C	D	A	A	C	C	
Approach Vol, veh/h					410			863			1475	A
Approach Delay, s/veh					28.9			7.4			22.9	
Approach LOS					C			A			C	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	52.5		9.5	43.0		22.5						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	48.0		5.0	38.5		18.0						
Max Q Clear Time (g_c+I1), s	10.4		2.7	28.8		9.9						
Green Ext Time (p_c), s	7.2		0.0	6.6		1.6						

Intersection Summary		
HCM 6th Ctrl Delay	18.9	
HCM 6th LOS	B	

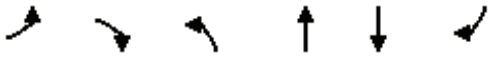
Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	778	739	535	915	667
v/c Ratio	0.72	0.98	0.26	0.86	0.73
Control Delay	23.8	59.2	8.2	35.0	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	59.2	8.2	35.0	8.0
Queue Length 50th (ft)	138	177	58	210	11
Queue Length 95th (ft)	200	#288	84	#313	107
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	1085	755	2052	1061	918
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.72	0.98	0.26	0.86	0.73

Intersection Summary

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



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	477	239	680	492	842	614
Future Volume (veh/h)	477	239	680	492	842	614
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	389	398	739	535	915	667
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	534	476	760	2061	1066	476
Arrive On Green	0.30	0.30	0.22	0.58	0.30	0.30
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	389	398	739	535	915	667
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	14.7	17.6	15.9	5.6	18.2	22.5
Cycle Q Clear(g_c), s	14.7	17.6	15.9	5.6	18.2	22.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	534	476	760	2061	1066	476
V/C Ratio(X)	0.73	0.84	0.97	0.26	0.86	1.40
Avail Cap(c_a), veh/h	534	476	760	2061	1066	476
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	24.5	29.0	7.8	24.7	26.3
Incr Delay (d2), s/veh	8.4	16.0	26.5	0.3	9.0	193.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	16.2	9.1	1.9	8.5	33.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.9	40.5	55.5	8.1	33.7	219.8
LnGrp LOS	C	D	E	A	C	F
Approach Vol, veh/h	787			1274	1582	
Approach Delay, s/veh	36.3			35.6	112.2	
Approach LOS	D			D	F	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		48.0		27.0	21.0	27.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		43.5		22.5	16.5	22.5
Max Q Clear Time (g_c+I1), s		7.6		19.6	17.9	24.5
Green Ext Time (p_c), s		4.0		0.9	0.0	0.0

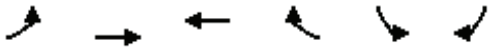
Intersection Summary		
HCM 6th Ctrl Delay		69.0
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	838	405	462	858	200
v/c Ratio	0.50	0.35	0.29	0.53	0.13
Control Delay	11.6	11.8	0.5	10.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	11.8	0.5	10.6	0.2
Queue Length 50th (ft)	50	40	0	73	0
Queue Length 95th (ft)	76	58	0	131	0
Internal Link Dist (ft)	735	442		1084	
Turn Bay Length (ft)				450	
Base Capacity (vph)	2034	1415	1583	1625	1583
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.41	0.29	0.29	0.53	0.13

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑	↱	↰↰	↱
Traffic Volume (veh/h)	0	771	373	425	789	184
Future Volume (veh/h)	0	771	373	425	789	184
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	838	405	0	858	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	2
Cap, veh/h	0	1314	914		1875	
Arrive On Green	0.00	0.51	0.26	0.00	0.54	0.00
Sat Flow, veh/h	0	5443	3647	1585	3456	1585
Grp Volume(v), veh/h	0	838	405	0	858	0
Grp Sat Flow(s),veh/h/ln	0	1702	1777	1585	1728	1585
Q Serve(g_s), s	0.0	5.3	4.3	0.0	6.8	0.0
Cycle Q Clear(g_c), s	0.0	5.3	4.3	0.0	6.8	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1314	914		1875	
V/C Ratio(X)	0.00	0.64	0.44		0.46	
Avail Cap(c_a), veh/h	0	2042	1421		1875	
HCM Platoon Ratio	1.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.92	0.66	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	9.4	14.0	0.0	6.3	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.2	0.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.4	1.5	0.0	1.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	9.9	14.2	0.0	7.1	0.0
LnGrp LOS	A	A	B		A	
Approach Vol, veh/h		838	405	A	858	A
Approach Delay, s/veh		9.9	14.2		7.1	
Approach LOS		A	B		A	

Timer - Assigned Phs		4		6	8
Phs Duration (G+Y+Rc), s		16.1		28.9	16.1
Change Period (Y+Rc), s		4.5		4.5	4.5
Max Green Setting (Gmax), s		18.0		18.0	18.0
Max Q Clear Time (g_c+I1), s		7.3		8.8	6.3
Green Ext Time (p_c), s		4.2		2.5	2.0

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	462	529	722	163	1473	1165	730
v/c Ratio	0.39	0.43	1.22	1.03	0.80	0.67	0.62
Control Delay	19.5	20.0	137.7	105.0	17.8	15.3	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.9	0.3
Total Delay	19.5	20.0	137.7	105.0	17.8	16.2	3.7
Queue Length 50th (ft)	81	97	~404	~78	263	193	0
Queue Length 95th (ft)	119	139	#610	#196	352	261	48
Internal Link Dist (ft)		442			757	336	
Turn Bay Length (ft)				120			
Base Capacity (vph)	1199	1236	592	158	1852	1733	1182
Starvation Cap Reductn	0	0	0	0	0	296	105
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.43	1.22	1.03	0.80	0.81	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	425	487	664	0	0	0	150	1110	245	15	1057	672
Future Volume (veh/h)	425	487	664	0	0	0	150	1110	245	15	1057	672
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	462	529	0				163	1207	266	16	1149	730
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	1207	1241					166	1539	336	58	1785	841
Arrive On Green	0.35	0.35	0.00				0.53	0.53	0.53	0.53	0.53	0.53
Sat Flow, veh/h	3456	3554	1585				242	2900	633	16	3365	1585
Grp Volume(v), veh/h	462	529	0				163	735	738	618	547	730
Grp Sat Flow(s),veh/h/ln	1728	1777	1585				242	1777	1756	1763	1617	1585
Q Serve(g_s), s	7.5	8.5	0.0				21.8	24.8	25.5	0.5	18.0	30.1
Cycle Q Clear(g_c), s	7.5	8.5	0.0				39.8	24.8	25.5	26.0	18.0	30.1
Prop In Lane	1.00		1.00				1.00		0.36	0.03		1.00
Lane Grp Cap(c), veh/h	1207	1241					166	943	932	985	858	841
V/C Ratio(X)	0.38	0.43					0.98	0.78	0.79	0.63	0.64	0.87
Avail Cap(c_a), veh/h	1207	1241					166	943	932	985	858	841
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	18.7	0.0				32.8	14.1	14.2	12.3	12.5	15.3
Incr Delay (d2), s/veh	0.9	1.1	0.0				64.6	6.3	6.9	3.0	3.6	11.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.5	0.0				5.9	10.3	10.5	7.2	6.5	25.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.2	19.7	0.0				97.4	20.4	21.1	15.4	16.1	27.1
LnGrp LOS	B	B					F	C	C	B	B	C
Approach Vol, veh/h		991	A					1636			1895	
Approach Delay, s/veh		19.5						28.4			20.1	
Approach LOS		B						C			C	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		44.3		30.7		44.3						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		39.8		26.2		39.8						
Max Q Clear Time (g_c+I1), s		41.8		10.5		32.1						
Green Ext Time (p_c), s		0.0		4.8		5.8						

Intersection Summary		
HCM 6th Ctrl Delay		23.0
HCM 6th LOS		C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	182	185	529	503	1108	1589	567
v/c Ratio	0.39	0.40	0.33	0.71	0.54	1.02	0.65
Control Delay	22.1	22.2	0.6	30.1	9.4	51.3	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay	22.1	22.2	0.6	30.1	9.7	51.3	5.8
Queue Length 50th (ft)	61	62	0	95	124	~234	0
Queue Length 95th (ft)	114	116	0	143	170	#337	64
Internal Link Dist (ft)		517			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	465	466	1583	713	2068	1564	879
Starvation Cap Reductn	0	0	0	0	415	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.40	0.33	0.71	0.67	1.02	0.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	336	2	487	463	1019	0	0	1462	522
Future Volume (veh/h)	0	0	0	336	2	487	463	1019	0	0	1462	522
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				366	0	0	503	1108	0	0	1589	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				987	0		718	2078	0	0	1571	
Arrive On Green				0.28	0.00	0.00	0.21	0.58	0.00	0.00	0.31	0.00
Sat Flow, veh/h				3563	0	1585	3456	3647	0	0	5274	1585
Grp Volume(v), veh/h				366	0	0	503	1108	0	0	1589	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1777	0	0	1702	1585
Q Serve(g_s), s				5.4	0.0	0.0	8.8	12.2	0.0	0.0	20.0	0.0
Cycle Q Clear(g_c), s				5.4	0.0	0.0	8.8	12.2	0.0	0.0	20.0	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				987	0		718	2078	0	0	1571	
V/C Ratio(X)				0.37	0.00		0.70	0.53	0.00	0.00	1.01	
Avail Cap(c_a), veh/h				987	0		718	2078	0	0	1571	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				18.9	0.0	0.0	23.9	8.1	0.0	0.0	22.5	0.0
Incr Delay (d2), s/veh				1.1	0.0	0.0	5.6	1.0	0.0	0.0	25.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.2	0.0	0.0	3.9	4.0	0.0	0.0	11.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				20.0	0.0	0.0	29.5	9.1	0.0	0.0	48.0	0.0
LnGrp LOS				C	A		C	A	A	A	F	
Approach Vol, veh/h					366	A		1611			1589	A
Approach Delay, s/veh					20.0			15.5			48.0	
Approach LOS					C			B			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	42.5		18.0	24.5		22.5						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	38.0		13.5	20.0		18.0						
Max Q Clear Time (g_c+I1), s	14.2		10.8	22.0		7.4						
Green Ext Time (p_c), s	8.9		0.6	0.0		1.0						

Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBT
Lane Group Flow (vph)	8	1433	986	75	1248	17	67	4
v/c Ratio	0.03	1.22	0.71	0.61	0.33	0.05	0.20	0.04
Control Delay	8.1	128.3	5.5	68.3	4.8	38.4	11.2	0.0
Queue Delay	0.0	0.7	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	8.1	129.0	5.5	68.3	5.1	38.4	11.2	0.0
Queue Length 50th (ft)	2	~1244	113	55	82	10	0	0
Queue Length 95th (ft)	8	#1505	203	m82	125	30	39	0
Internal Link Dist (ft)		1202			351			58
Turn Bay Length (ft)	45			50			660	
Base Capacity (vph)	249	1177	1383	123	3770	310	332	104
Starvation Cap Reductn	0	0	0	0	1595	0	0	0
Spillback Cap Reductn	0	175	0	0	0	0	5	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	1.43	0.71	0.61	0.57	0.05	0.20	0.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1318	907	69	1130	18	16	0	62	0	0	4
Future Volume (veh/h)	7	1318	907	69	1130	18	16	0	62	0	0	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	0	1870			
Adj Flow Rate, veh/h	8	1433	986	75	1228	20	17	0	67			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	0	2			
Cap, veh/h	347	1182	1280	125	3844	63	313	0	278			
Arrive On Green	0.63	0.63	0.63	0.14	1.00	1.00	0.18	0.00	0.18			
Sat Flow, veh/h	445	1870	1585	1781	5175	84	1781	0	1585			
Grp Volume(v), veh/h	8	1433	986	75	808	440	17	0	67			
Grp Sat Flow(s),veh/h/ln	445	1870	1585	1781	1702	1855	1781	0	1585			
Q Serve(g_s), s	0.7	69.5	34.9	4.3	0.0	0.0	0.9	0.0	4.0			
Cycle Q Clear(g_c), s	0.7	69.5	34.9	4.3	0.0	0.0	0.9	0.0	4.0			
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00			
Lane Grp Cap(c), veh/h	347	1182	1280	125	2528	1378	313	0	278			
V/C Ratio(X)	0.02	1.21	0.77	0.60	0.32	0.32	0.05	0.00	0.24			
Avail Cap(c_a), veh/h	347	1182	1280	125	2528	1378	313	0	278			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	7.6	20.3	5.4	45.9	0.0	0.0	37.8	0.0	39.0			
Incr Delay (d2), s/veh	0.1	103.7	4.5	19.6	0.3	0.6	0.3	0.0	2.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	60.9	23.4	2.5	0.1	0.2	0.4	0.0	1.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.7	123.9	9.9	65.5	0.3	0.6	38.1	0.0	41.1			
LnGrp LOS	A	F	A	E	A	A	D	A	D			
Approach Vol, veh/h		2427			1323			84				
Approach Delay, s/veh		77.2			4.1			40.5				
Approach LOS		E			A			D				

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		23.8	12.2	74.0				86.2				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		19.3	7.7	69.5				81.7				
Max Q Clear Time (g_c+I1), s		6.0	6.3	71.5				2.0				
Green Ext Time (p_c), s		0.2	0.0	0.0				12.1				

Intersection Summary												
HCM 6th Ctrl Delay			51.2									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	152	1365	32	714	273	72	29	53	570
v/c Ratio	0.86	0.76	0.24	0.62	0.39	0.14	0.05	0.11	0.79
Control Delay	34.2	20.6	19.0	18.4	4.1	14.0	0.1	13.7	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.2	20.6	19.0	18.4	4.1	14.0	0.1	13.7	18.3
Queue Length 50th (ft)	54	406	8	101	0	16	0	12	72
Queue Length 95th (ft)	m48	m266	27	150	41	40	0	32	#236
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	177	1797	135	1158	701	526	598	492	719
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.76	0.24	0.62	0.39	0.14	0.05	0.11	0.79

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1226	29	29	657	251	35	31	27	37	12	524
Future Volume (veh/h)	140	1226	29	29	657	251	35	31	27	37	12	524
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	1333	32	32	714	273	38	34	29	40	13	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	1806	43	237	1163	519	348	283	519	441	128	
Arrive On Green	0.13	0.68	0.68	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.00
Sat Flow, veh/h	1781	3547	85	398	3554	1585	757	863	1585	997	392	1585
Grp Volume(v), veh/h	152	667	698	32	714	273	72	0	29	53	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1855	398	1777	1585	1621	0	1585	1388	0	1585
Q Serve(g_s), s	4.6	13.3	13.4	3.5	9.3	7.7	0.0	0.0	0.7	0.6	0.0	0.0
Cycle Q Clear(g_c), s	4.6	13.3	13.4	6.9	9.3	7.7	1.5	0.0	0.7	2.1	0.0	0.0
Prop In Lane	1.00		0.05	1.00		1.00	0.53		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	178	905	944	237	1163	519	630	0	519	569	0	
V/C Ratio(X)	0.85	0.74	0.74	0.14	0.61	0.53	0.11	0.00	0.06	0.09	0.00	
Avail Cap(c_a), veh/h	178	905	944	237	1163	519	630	0	519	569	0	
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.4	6.5	6.5	16.1	15.6	15.0	12.9	0.0	12.7	13.1	0.0	0.0
Incr Delay (d2), s/veh	37.5	5.4	5.2	1.2	2.4	3.8	0.4	0.0	0.2	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	4.0	4.2	0.4	3.7	3.0	0.6	0.0	0.2	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.9	11.9	11.7	17.3	18.0	18.8	13.3	0.0	12.9	13.4	0.0	0.0
LnGrp LOS	E	B	B	B	B	B	B	A	B	B	A	
Approach Vol, veh/h		1517			1019			101			53	A
Approach Delay, s/veh		16.7			18.2			13.2			13.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5		32.5		22.5	10.0	22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0		28.0		18.0	5.5	18.0				
Max Q Clear Time (g_c+I1), s		3.5		15.4		4.1	6.6	11.3				
Green Ext Time (p_c), s		0.3		7.4		0.1	0.0	3.4				

Intersection Summary												
HCM 6th Ctrl Delay			17.1									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

FUTURE BASE

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	1339	42	954	1393
v/c Ratio	1.40dr	0.26	0.53	1.18
Control Delay	123.3	27.4	10.4	110.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	123.3	27.4	10.4	110.6
Queue Length 50th (ft)	~284	13	100	~297
Queue Length 95th (ft)	#402	37	144	#417
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	1108	164	1801	1182
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.21	0.26	0.53	1.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	87	388	756	39	878	0	0	1117	165
Future Volume (veh/h)	0	0	0	87	388	756	39	878	0	0	1117	165
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				95	422	822	42	954	0	0	1214	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				111	495	519	165	1809	0	0	1189	
Arrive On Green				0.33	0.33	0.33	0.09	0.51	0.00	0.00	0.33	0.00
Sat Flow, veh/h				341	1513	1585	1781	3647	0	0	3741	0
Grp Volume(v), veh/h				517	0	822	42	954	0	0	1214	0
Grp Sat Flow(s),veh/h/ln				1853	0	1585	1781	1777	0	0	1777	0
Q Serve(g_s), s				14.3	0.0	18.0	1.2	9.9	0.0	0.0	18.4	0.0
Cycle Q Clear(g_c), s				14.3	0.0	18.0	1.2	9.9	0.0	0.0	18.4	0.0
Prop In Lane				0.18		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				607	0	519	165	1809	0	0	1189	
V/C Ratio(X)				0.85	0.00	1.58	0.25	0.53	0.00	0.00	1.02	
Avail Cap(c_a), veh/h				607	0	519	165	1809	0	0	1189	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				17.3	0.0	18.5	23.2	9.1	0.0	0.0	18.3	0.0
Incr Delay (d2), s/veh				14.1	0.0	272.2	3.7	1.1	0.0	0.0	31.6	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.7	0.0	44.9	0.6	3.3	0.0	0.0	11.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.4	0.0	290.7	26.9	10.2	0.0	0.0	49.9	0.0
LnGrp LOS				C	A	F	C	B	A	A	F	
Approach Vol, veh/h					1339			996			1214	A
Approach Delay, s/veh					190.6			10.9			49.9	
Approach LOS					F			B			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	32.5		9.6	22.9		22.5						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	28.0		5.1	18.4		18.0						
Max Q Clear Time (g_c+I1), s	11.9		3.2	20.4		20.0						
Green Ext Time (p_c), s	6.2		0.0	0.0		0.0						

Intersection Summary		
HCM 6th Ctrl Delay	92.0	
HCM 6th LOS	F	

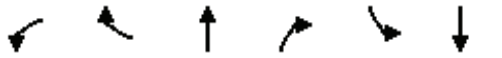
Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	1052	440	111	143	865
v/c Ratio	0.77	0.59	0.15	0.20	1.47dl
Control Delay	16.6	9.5	9.3	3.0	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	9.5	9.3	3.0	25.1
Queue Length 50th (ft)	114	42	17	0	102
Queue Length 95th (ft)	#174	108	40	23	#201
Internal Link Dist (ft)	790		525		404
Turn Bay Length (ft)	350	20			
Base Capacity (vph)	1373	750	745	719	995
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.77	0.59	0.15	0.20	0.87

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	968	405	102	132	691	105
Future Volume (veh/h)	968	405	102	132	691	105
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1052	440	111	143	751	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1382	634	748	634	568	647
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	3456	1585	1870	1585	1019	1702
Grp Volume(v), veh/h	1052	440	111	143	751	114
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	1019	1617
Q Serve(g_s), s	11.8	10.4	1.7	2.7	16.3	2.0
Cycle Q Clear(g_c), s	11.8	10.4	1.7	2.7	18.0	2.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	1382	634	748	634	568	647
V/C Ratio(X)	0.76	0.69	0.15	0.23	1.32	0.18
Avail Cap(c_a), veh/h	1382	634	748	634	568	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.6	11.2	8.6	8.9	16.6	8.7
Incr Delay (d2), s/veh	4.0	6.2	0.4	0.8	157.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	3.9	0.6	0.9	30.3	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.6	17.4	9.0	9.7	174.0	9.3
LnGrp LOS	B	B	A	A	F	A
Approach Vol, veh/h	1492		254			865
Approach Delay, s/veh	16.2		9.4			152.3
Approach LOS	B		A			F

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		22.5			22.5	22.5
Change Period (Y+Rc), s		4.5			4.5	4.5
Max Green Setting (Gmax), s		18.0			18.0	18.0
Max Q Clear Time (g_c+I1), s		4.7			20.0	13.8
Green Ext Time (p_c), s		0.8			0.0	2.4

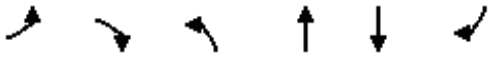
Intersection Summary		
HCM 6th Ctrl Delay		60.6
HCM 6th LOS		E

Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	1630	800	820	570	203
v/c Ratio	1.66	1.02	0.40	0.57	0.34
Control Delay	326.1	64.4	8.1	22.5	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	326.1	64.4	8.1	22.5	5.0
Queue Length 50th (ft)	~497	~168	82	100	0
Queue Length 95th (ft)	#624	#278	115	146	42
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	979	786	2063	1007	595
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.66	1.02	0.40	0.57	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



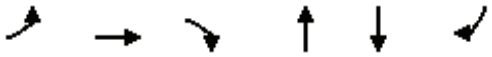
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1162	338	736	754	524	187
Future Volume (veh/h)	1162	338	736	754	524	187
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	815	847	800	820	570	203
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	496	441	792	2072	1011	451
Arrive On Green	0.28	0.28	0.23	0.58	0.28	0.28
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	815	847	800	820	570	203
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	18.1	18.1	14.9	8.1	8.9	6.8
Cycle Q Clear(g_c), s	18.1	18.1	14.9	8.1	8.9	6.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	496	441	792	2072	1011	451
V/C Ratio(X)	1.64	1.92	1.01	0.40	0.56	0.45
Avail Cap(c_a), veh/h	496	441	792	2072	1011	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	23.5	25.1	7.3	19.8	19.1
Incr Delay (d2), s/veh	298.4	421.9	34.4	0.6	2.3	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	48.1	65.4	9.5	2.6	3.7	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	321.8	445.3	59.5	7.9	22.1	22.3
LnGrp LOS	F	F	F	A	C	C
Approach Vol, veh/h	1662			1620	773	
Approach Delay, s/veh	384.8			33.4	22.1	
Approach LOS	F			C	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		42.4		22.6	19.4	23.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		37.9		18.1	14.9	18.5
Max Q Clear Time (g_c+I1), s		10.1		20.1	16.9	10.9
Green Ext Time (p_c), s		6.5		0.0	0.0	2.8

Intersection Summary		
HCM 6th Ctrl Delay		175.3
HCM 6th LOS		F

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	448	18	708	1970	877	226
v/c Ratio	0.35	0.01	1.11	1.31	0.74	0.27
Control Delay	12.4	10.1	88.7	160.9	16.0	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	10.1	88.7	160.9	16.0	2.5
Queue Length 50th (ft)	46	1	~232	~408	103	0
Queue Length 95th (ft)	76	6	#408	#535	163	28
Internal Link Dist (ft)		442		757	336	
Turn Bay Length (ft)						
Base Capacity (vph)	1270	1309	638	1509	1189	836
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.01	1.11	1.31	0.74	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	412	17	651	0	0	0	9	1474	329	11	796	208
Future Volume (veh/h)	412	17	651	0	0	0	9	1474	329	11	796	208
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	448	18	0				10	1602	358	12	865	226
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	1279	1315					75	1277	273	74	1312	713
Arrive On Green	0.37	0.37	0.00				0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	3456	3554	1585				5	2837	608	0	2916	1585
Grp Volume(v), veh/h	448	18	0				1032	0	938	392	485	226
Grp Sat Flow(s),veh/h/ln	1728	1777	1585				1857	0	1593	1299	1617	1585
Q Serve(g_s), s	4.7	0.2	0.0				6.3	0.0	22.5	0.0	11.8	4.6
Cycle Q Clear(g_c), s	4.7	0.2	0.0				22.5	0.0	22.5	22.5	11.8	4.6
Prop In Lane	1.00		1.00				0.01		0.38	0.03		1.00
Lane Grp Cap(c), veh/h	1279	1315					908	0	717	659	728	713
V/C Ratio(X)	0.35	0.01					1.14	0.00	1.31	0.59	0.67	0.32
Avail Cap(c_a), veh/h	1279	1315					908	0	717	659	728	713
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00				1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.4	10.0	0.0				14.6	0.0	13.8	10.0	10.8	8.8
Incr Delay (d2), s/veh	0.8	0.0	0.0				74.7	0.0	149.0	3.9	4.8	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.1	0.0				27.2	0.0	35.8	3.1	4.3	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	10.0	0.0				89.3	0.0	162.8	14.0	15.6	10.0
LnGrp LOS	B	A					F	A	F	B	B	A
Approach Vol, veh/h		466	A					1970			1103	
Approach Delay, s/veh		12.1						124.3			13.9	
Approach LOS		B						F			B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	27.0	23.0	27.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.5	18.5	22.5
Max Q Clear Time (g_c+I1), s	24.5	6.7	24.5
Green Ext Time (p_c), s	0.0	1.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	75.1
HCM 6th LOS	E

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	113	112	536	712	1325	890	260
v/c Ratio	0.22	0.22	0.34	1.19	0.68	0.58	0.40
Control Delay	17.3	17.2	0.6	126.7	12.0	19.7	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	17.3	17.2	0.6	126.7	12.4	19.7	4.6
Queue Length 50th (ft)	31	31	0	~164	162	98	0
Queue Length 95th (ft)	67	67	0	#259	226	135	44
Internal Link Dist (ft)		517			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	504	506	1583	600	1946	1525	656
Starvation Cap Reductn	0	0	0	0	230	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.22	0.34	1.19	0.77	0.58	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	204	3	493	655	1219	0	0	819	239
Future Volume (veh/h)	0	0	0	204	3	493	655	1219	0	0	819	239
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				224	0	0	712	1325	0	0	890	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1069	0		605	1955	0	0	1532	
Arrive On Green				0.30	0.00	0.00	0.17	0.55	0.00	0.00	0.30	0.00
Sat Flow, veh/h				3563	0	1585	3456	3647	0	0	5274	1585
Grp Volume(v), veh/h				224	0	0	712	1325	0	0	890	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1777	0	0	1702	1585
Q Serve(g_s), s				2.8	0.0	0.0	10.5	16.1	0.0	0.0	8.9	0.0
Cycle Q Clear(g_c), s				2.8	0.0	0.0	10.5	16.1	0.0	0.0	8.9	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1069	0		605	1955	0	0	1532	
V/C Ratio(X)				0.21	0.00		1.18	0.68	0.00	0.00	0.58	
Avail Cap(c_a), veh/h				1069	0		605	1955	0	0	1532	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.7	0.0	0.0	24.8	9.7	0.0	0.0	17.8	0.0
Incr Delay (d2), s/veh				0.4	0.0	0.0	96.2	1.9	0.0	0.0	1.6	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.1	0.0	0.0	12.1	5.4	0.0	0.0	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				16.1	0.0	0.0	120.9	11.6	0.0	0.0	19.4	0.0
LnGrp LOS				B	A		F	B	A	A	B	
Approach Vol, veh/h					224	A		2037			890	A
Approach Delay, s/veh					16.1			49.8			19.4	
Approach LOS					B			D			B	

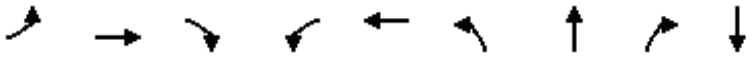
Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	37.5		15.0	22.5		22.5						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	33.0		10.5	18.0		18.0						
Max Q Clear Time (g_c+I1), s	18.1		12.5	10.9		4.8						
Green Ext Time (p_c), s	8.5		0.0	3.4		0.6						

Intersection Summary	
HCM 6th Ctrl Delay	38.8
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	5	803	670	78	1402	53	8	221	3
v/c Ratio	0.04	0.70	0.69	0.35	0.53	0.09	no cap	0.33	0.02
Control Delay	15.0	21.6	6.0	29.0	10.2	14.7		4.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	15.0	21.6	6.0	29.0	10.2	14.7	Error	4.2	0.0
Queue Length 50th (ft)	1	131	0	26	110	13	0	0	0
Queue Length 95th (ft)	8	187	65	62	145	34	0	39	0
Internal Link Dist (ft)		1202			351		1055		58
Turn Bay Length (ft)	45		160	50				660	
Base Capacity (vph)	124	1150	966	221	2668	575	1	663	191
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.70	0.69	0.35	0.53	0.09	8.00	0.33	0.02

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	739	616	72	1277	13	49	7	203	0	0	3
Future Volume (veh/h)	5	739	616	72	1277	13	49	7	203	0	0	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	5	803	670	78	1388	14	53	8	221			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2			
Cap, veh/h	245	1155	515	223	2736	28	579	0	515			
Arrive On Green	0.32	0.32	0.32	0.13	0.52	0.52	0.32	0.32	0.32			
Sat Flow, veh/h	384	3554	1585	1781	5212	53	1781	0	1585			
Grp Volume(v), veh/h	5	803	670	78	906	496	53	0	221			
Grp Sat Flow(s),veh/h/ln	384	1777	1585	1781	1702	1861	1781	0	1585			
Q Serve(g_s), s	0.5	11.8	19.5	2.4	10.3	10.3	1.2	0.0	6.6			
Cycle Q Clear(g_c), s	0.5	11.8	19.5	2.4	10.3	10.3	1.2	0.0	6.6			
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00			
Lane Grp Cap(c), veh/h	245	1155	515	223	1787	977	579	0	515			
V/C Ratio(X)	0.02	0.70	1.30	0.35	0.51	0.51	0.09	0.00	0.43			
Avail Cap(c_a), veh/h	245	1155	515	223	1787	977	579	0	515			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	13.8	17.7	20.2	24.0	9.2	9.2	14.1	0.0	15.9			
Incr Delay (d2), s/veh	0.2	3.5	149.0	4.3	1.0	1.9	0.3	0.0	2.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	4.9	27.7	1.2	3.4	3.9	0.5	0.0	2.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.0	21.1	169.3	28.3	10.3	11.1	14.4	0.0	18.5			
LnGrp LOS	B	C	F	C	B	B	B	A	B			
Approach Vol, veh/h		1478			1480			274				
Approach Delay, s/veh		88.2			11.5			17.7				
Approach LOS		F			B			B				

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		24.0	12.0	24.0				36.0				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		19.5	7.5	19.5				31.5				
Max Q Clear Time (g_c+I1), s		8.6	4.4	21.5				12.3				
Green Ext Time (p_c), s		0.7	0.0	0.0				9.7				

Intersection Summary												
HCM 6th Ctrl Delay			47.1									
HCM 6th LOS			D									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	134	893	20	948	317	12	14	36	533
v/c Ratio	0.76	0.35	0.11	0.82	0.43	0.02	0.02	0.07	0.76
Control Delay	54.4	8.3	14.8	24.7	4.2	12.8	0.1	13.2	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.4	8.3	14.8	24.7	4.2	12.8	0.1	13.2	17.0
Queue Length 50th (ft)	44	56	4	146	0	3	0	8	68
Queue Length 95th (ft)	#121	79	18	#240	44	12	0	24	#219
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	177	2580	187	1158	731	524	598	553	701
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.35	0.11	0.82	0.43	0.02	0.02	0.07	0.76

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	784	38	18	872	292	10	1	13	17	17	490
Future Volume (veh/h)	123	784	38	18	872	292	10	1	13	17	17	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	852	41	20	948	317	11	1	14	18	18	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	2541	122	335	1163	519	552	45	519	331	301	
Arrive On Green	0.10	0.51	0.51	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.00
Sat Flow, veh/h	1781	4992	240	623	3554	1585	1303	137	1585	711	919	1585
Grp Volume(v), veh/h	134	580	313	20	948	317	12	0	14	36	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1827	623	1777	1585	1440	0	1585	1630	0	1585
Q Serve(g_s), s	4.0	5.5	5.6	1.2	13.5	9.2	0.0	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.0	5.5	5.6	1.2	13.5	9.2	0.2	0.0	0.3	0.7	0.0	0.0
Prop In Lane	1.00		0.13	1.00		1.00	0.92		1.00	0.50		1.00
Lane Grp Cap(c), veh/h	178	1733	930	335	1163	519	597	0	519	632	0	
V/C Ratio(X)	0.75	0.33	0.34	0.06	0.82	0.61	0.02	0.00	0.03	0.06	0.00	
Avail Cap(c_a), veh/h	178	1733	930	335	1163	519	597	0	519	632	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.1	8.0	8.0	12.9	17.0	15.6	12.5	0.0	12.6	12.7	0.0	0.0
Incr Delay (d2), s/veh	25.1	0.5	1.0	0.3	6.3	5.3	0.1	0.0	0.1	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	1.7	2.0	0.2	5.8	3.7	0.1	0.0	0.1	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.1	8.5	9.0	13.2	23.3	20.8	12.6	0.0	12.7	12.9	0.0	0.0
LnGrp LOS	D	A	A	B	C	C	B	A	B	B	A	
Approach Vol, veh/h		1027			1285			26			36	A
Approach Delay, s/veh		14.0			22.5			12.6			12.9	
Approach LOS		B			C			B			B	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5		32.5		22.5	10.0	22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0		28.0		18.0	5.5	18.0				
Max Q Clear Time (g_c+I1), s		2.3		7.6		2.7	6.0	15.5				
Green Ext Time (p_c), s		0.0		6.0		0.1	0.0	1.8				

Intersection Summary												
HCM 6th Ctrl Delay			18.6									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	992	20	965	2312
v/c Ratio	1.46dr	0.14	0.44	1.42
Control Delay	74.8	32.7	7.7	214.4
Queue Delay	0.0	0.0	0.3	0.0
Total Delay	74.8	32.7	8.0	214.4
Queue Length 50th (ft)	~229	8	99	~730
Queue Length 95th (ft)	#346	28	135	#868
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	926	139	2199	1627
Starvation Cap Reductn	0	0	605	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.07	0.14	0.61	1.42

Intersection Summary
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	78	122	712	18	888	0	1	1890	236
Future Volume (veh/h)	0	0	0	78	122	712	18	888	0	1	1890	236
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h				85	133	774	20	965	0	1	2054	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	2	2	2
Cap, veh/h				189	296	419	140	2208	0	52	1693	
Arrive On Green				0.26	0.26	0.26	0.08	0.62	0.00	0.49	0.49	0.00
Sat Flow, veh/h				715	1119	1585	1781	3647	0	0	3572	0
Grp Volume(v), veh/h				218	0	774	20	965	0	1102	953	0
Grp Sat Flow(s),veh/h/ln				1835	0	1585	1781	1777	0	1870	1617	0
Q Serve(g_s), s				6.9	0.0	18.5	0.7	9.9	0.0	4.2	34.0	0.0
Cycle Q Clear(g_c), s				6.9	0.0	18.5	0.7	9.9	0.0	34.0	34.0	0.0
Prop In Lane				0.39		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				485	0	419	140	2208	0	960	785	
V/C Ratio(X)				0.45	0.00	1.85	0.14	0.44	0.00	1.15	1.21	
Avail Cap(c_a), veh/h				485	0	419	140	2208	0	960	785	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				21.5	0.0	26.0	30.1	6.9	0.0	18.9	18.0	0.0
Incr Delay (d2), s/veh				3.0	0.0	390.6	2.1	0.6	0.0	79.1	107.6	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.2	0.0	52.0	0.4	3.2	0.0	35.1	34.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.5	0.0	416.6	32.2	7.5	0.0	98.0	125.6	0.0
LnGrp LOS				C	A	F	C	A	A	F	F	
Approach Vol, veh/h					992			985			2055	A
Approach Delay, s/veh					330.4			8.0			110.8	
Approach LOS					F			A			F	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	47.5		9.5	38.0		22.5						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	43.0		5.0	33.5		18.0						
Max Q Clear Time (g_c+I1), s	11.9		2.7	36.0		20.5						
Green Ext Time (p_c), s	8.2		0.0	0.0		0.0						

Intersection Summary		
HCM 6th Ctrl Delay	139.7	
HCM 6th LOS	F	

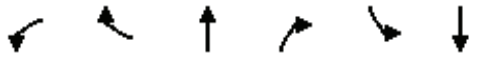
Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	476	207	63	501	1479
v/c Ratio	0.60	0.47	0.05	0.41	1.51dl
Control Delay	31.0	19.1	4.7	1.6	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	19.1	4.7	1.6	19.4
Queue Length 50th (ft)	109	49	9	0	273
Queue Length 95th (ft)	157	112	21	28	#488
Internal Link Dist (ft)	790		525		404
Turn Bay Length (ft)	350	20			
Base Capacity (vph)	798	436	1243	1223	1668
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.60	0.47	0.05	0.41	0.89

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	438	190	58	461	1235	126
Future Volume (veh/h)	438	190	58	461	1235	126
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	476	207	63	501	1342	137
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	803	369	1248	1058	645	1079
Arrive On Green	0.23	0.23	0.67	0.67	0.67	0.67
Sat Flow, veh/h	3456	1585	1870	1585	832	1702
Grp Volume(v), veh/h	476	207	63	501	1342	137
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	832	1617
Q Serve(g_s), s	9.8	9.2	0.9	12.3	52.5	2.5
Cycle Q Clear(g_c), s	9.8	9.2	0.9	12.3	53.4	2.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	803	369	1248	1058	645	1079
V/C Ratio(X)	0.59	0.56	0.05	0.47	2.08	0.13
Avail Cap(c_a), veh/h	803	369	1248	1058	645	1079
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	27.1	4.6	6.5	17.4	4.8
Incr Delay (d2), s/veh	3.2	6.1	0.1	1.5	491.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	4.0	0.3	3.7	100.5	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.5	33.2	4.7	8.0	508.7	5.1
LnGrp LOS	C	C	A	A	F	A
Approach Vol, veh/h	683		564			1479
Approach Delay, s/veh	31.3		7.6			462.0
Approach LOS	C		A			F

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		57.4			57.4	22.6
Change Period (Y+Rc), s		4.5			4.5	4.5
Max Green Setting (Gmax), s		52.9			52.9	18.1
Max Q Clear Time (g_c+I1), s		14.3			55.4	11.8
Green Ext Time (p_c), s		2.4			0.0	1.5

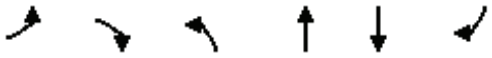
Intersection Summary		
HCM 6th Ctrl Delay	260.1	
HCM 6th LOS	F	

Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	1237	797	562	908	282
v/c Ratio	1.25	1.01	0.27	0.86	0.42
Control Delay	144.3	61.3	6.8	31.5	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	144.3	61.3	6.8	31.5	4.8
Queue Length 50th (ft)	~320	~164	50	176	0
Queue Length 95th (ft)	#439	#276	73	#275	48
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	991	792	2096	1061	672
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.25	1.01	0.27	0.86	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



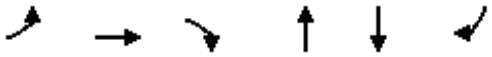
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	929	209	733	517	835	259
Future Volume (veh/h)	929	209	733	517	835	259
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1222	0	797	562	908	282
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1014	439	797	2105	1066	476
Arrive On Green	0.28	0.00	0.23	0.59	0.30	0.30
Sat Flow, veh/h	3563	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	1222	0	797	562	908	282
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	18.5	0.0	15.0	5.0	15.6	9.8
Cycle Q Clear(g_c), s	18.5	0.0	15.0	5.0	15.6	9.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	1014	439	797	2105	1066	476
V/C Ratio(X)	1.21	0.00	1.00	0.27	0.85	0.59
Avail Cap(c_a), veh/h	1014	439	797	2105	1066	476
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	25.0	6.4	21.4	19.4
Incr Delay (d2), s/veh	101.8	0.0	31.7	0.3	8.6	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.4	0.0	9.2	1.6	7.2	4.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	125.0	0.0	56.7	6.7	30.0	24.7
LnGrp LOS	F	A	E	A	C	C
Approach Vol, veh/h	1222			1359	1190	
Approach Delay, s/veh	125.0			36.0	28.7	
Approach LOS	F			D	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		42.5		22.5	19.0	23.5
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		38.0		18.0	14.5	19.0
Max Q Clear Time (g_c+I1), s		7.0		20.5	17.0	17.6
Green Ext Time (p_c), s		4.2		0.0	0.0	0.9

Intersection Summary		
HCM 6th Ctrl Delay		62.6
HCM 6th LOS		E

Notes

User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	249	263	701	1976	1544	488
v/c Ratio	0.23	0.23	1.35	1.08	0.97	0.45
Control Delay	15.8	15.8	192.9	62.3	21.2	1.1
Queue Delay	0.0	0.0	0.0	0.0	3.1	0.0
Total Delay	15.8	15.8	192.9	62.3	24.3	1.1
Queue Length 50th (ft)	33	36	~341	~425	89	0
Queue Length 95th (ft)	57	61	#529	#557	m#112	m1
Internal Link Dist (ft)		442		757	336	
Turn Bay Length (ft)						
Base Capacity (vph)	1087	1120	519	1830	1596	1090
Starvation Cap Reductn	0	0	0	0	33	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.23	1.35	1.08	0.99	0.45

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	242	645	0	0	0	6	1376	435	5	1416	449
Future Volume (veh/h)	229	242	645	0	0	0	6	1376	435	5	1416	449
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	249	263	0				7	1496	473	5	1539	488
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	1094	1125					62	1441	431	60	1700	872
Arrive On Green	0.32	0.32	0.00				0.55	0.55	0.54	0.73	0.73	0.73
Sat Flow, veh/h	3456	3554	1585				3	2621	784	0	3091	1585
Grp Volume(v), veh/h	249	263	0				1035	0	941	737	807	488
Grp Sat Flow(s),veh/h/ln	1728	1777	1585				1847	0	1561	1474	1617	1585
Q Serve(g_s), s	3.2	3.3	0.0				8.1	0.0	33.0	0.0	23.9	8.4
Cycle Q Clear(g_c), s	3.2	3.3	0.0				33.0	0.0	33.0	33.0	23.9	8.4
Prop In Lane	1.00		1.00				0.01		0.50	0.01		1.00
Lane Grp Cap(c), veh/h	1094	1125					1076	0	858	871	889	872
V/C Ratio(X)	0.23	0.23					0.96	0.00	1.10	0.85	0.91	0.56
Avail Cap(c_a), veh/h	1094	1125					1076	0	858	871	889	872
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	0.00				1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.1	15.1	0.0				13.6	0.0	13.6	9.0	6.8	4.8
Incr Delay (d2), s/veh	0.5	0.5	0.0				19.6	0.0	60.5	9.9	14.7	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.3	0.0				16.6	0.0	23.3	6.2	6.8	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.6	15.6	0.0				33.2	0.0	74.1	18.9	21.6	7.3
LnGrp LOS	B	B					C	A	F	B	C	A
Approach Vol, veh/h		512	A					1976			2032	
Approach Delay, s/veh		15.6						52.7			17.2	
Approach LOS		B						D			B	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	37.0	23.0	37.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	32.5	18.5	32.5
Max Q Clear Time (g_c+I1), s	35.0	5.3	35.0
Green Ext Time (p_c), s	0.0	2.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	197	200	515	503	1182	1699	587
v/c Ratio	0.38	0.39	0.33	0.97	0.60	0.98	0.63
Control Delay	18.9	19.0	0.5	42.6	13.7	39.7	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	18.9	19.0	0.5	42.6	14.0	39.7	5.2
Queue Length 50th (ft)	57	58	0	105	177	217	0
Queue Length 95th (ft)	109	111	0	m99	m172	#324	59
Internal Link Dist (ft)		517			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	518	519	1583	520	1975	1728	925
Starvation Cap Reductn	0	0	0	0	218	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.39	0.33	0.97	0.67	0.98	0.63

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	363	2	474	463	1087	0	0	1563	540
Future Volume (veh/h)	0	0	0	363	2	474	463	1087	0	0	1563	540
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				396	0	0	503	1182	0	0	1699	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1098	0		524	1984	0	0	1736	
Arrive On Green				0.31	0.00	0.00	0.15	0.56	0.00	0.00	0.34	0.00
Sat Flow, veh/h				3563	0	1585	3456	3647	0	0	5274	1585
Grp Volume(v), veh/h				396	0	0	503	1182	0	0	1699	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1777	0	0	1702	1585
Q Serve(g_s), s				5.2	0.0	0.0	8.7	13.2	0.0	0.0	19.7	0.0
Cycle Q Clear(g_c), s				5.2	0.0	0.0	8.7	13.2	0.0	0.0	19.7	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1098	0		524	1984	0	0	1736	
V/C Ratio(X)				0.36	0.00		0.96	0.60	0.00	0.00	0.98	
Avail Cap(c_a), veh/h				1098	0		524	1984	0	0	1736	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				16.1	0.0	0.0	25.3	8.8	0.0	0.0	19.6	0.0
Incr Delay (d2), s/veh				0.9	0.0	0.0	30.5	1.3	0.0	0.0	17.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.1	0.0	0.0	5.5	4.3	0.0	0.0	9.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				17.1	0.0	0.0	55.8	10.1	0.0	0.0	36.7	0.0
LnGrp LOS				B	A		E	B	A	A	D	
Approach Vol, veh/h					396	A		1685			1699	A
Approach Delay, s/veh					17.1			23.7			36.7	
Approach LOS					B			C			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	37.5		13.1	24.4		22.5						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	33.0		8.6	19.9		18.0						
Max Q Clear Time (g_c+I1), s	15.2		10.7	21.7		7.2						
Green Ext Time (p_c), s	8.4		0.0	0.0		1.1						

Intersection Summary	
HCM 6th Ctrl Delay	28.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBT
Lane Group Flow (vph)	8	1395	1042	77	1249	39	70	4
v/c Ratio	0.06	1.08	0.89	0.44	0.46	0.07	0.12	0.02
Control Delay	13.7	69.7	14.2	30.6	8.7	14.1	2.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.7	69.7	14.2	30.6	8.7	14.1	2.1	0.0
Queue Length 50th (ft)	2	~305	24	30	78	9	0	0
Queue Length 95th (ft)	10	#424	#316	m42	135	27	12	0
Internal Link Dist (ft)		1202			351			58
Turn Bay Length (ft)	45		160	50			660	
Base Capacity (vph)	144	1297	1175	177	2706	590	600	191
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	1.08	0.89	0.44	0.46	0.07	0.12	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1283	959	71	1130	19	36	0	64	0	0	4
Future Volume (veh/h)	7	1283	959	71	1130	19	36	0	64	0	0	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	0	1870			
Adj Flow Rate, veh/h	8	1395	1042	77	1228	21	39	0	70			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	0	2			
Cap, veh/h	283	1303	581	178	2757	47	594	0	528			
Arrive On Green	0.37	0.37	0.37	0.20	1.00	1.00	0.33	0.00	0.33			
Sat Flow, veh/h	445	3554	1585	1781	5170	88	1781	0	1585			
Grp Volume(v), veh/h	8	1395	1042	77	808	441	39	0	70			
Grp Sat Flow(s),veh/h/ln	445	1777	1585	1781	1702	1854	1781	0	1585			
Q Serve(g_s), s	0.7	22.0	22.0	2.3	0.0	0.0	0.9	0.0	1.8			
Cycle Q Clear(g_c), s	0.7	22.0	22.0	2.3	0.0	0.0	0.9	0.0	1.8			
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00			
Lane Grp Cap(c), veh/h	283	1303	581	178	1815	989	594	0	528			
V/C Ratio(X)	0.03	1.07	1.79	0.43	0.45	0.45	0.07	0.00	0.13			
Avail Cap(c_a), veh/h	283	1303	581	178	1815	989	594	0	528			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	12.3	19.0	19.0	22.5	0.0	0.0	13.6	0.0	13.9			
Incr Delay (d2), s/veh	0.2	46.2	363.7	7.5	0.8	1.5	0.2	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	16.2	65.7	1.2	0.2	0.4	0.4	0.0	0.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.4	65.2	382.7	30.0	0.8	1.5	13.8	0.0	14.5			
LnGrp LOS	B	F	F	C	A	A	B	A	B			
Approach Vol, veh/h		2445			1326			109				
Approach Delay, s/veh		200.3			2.7			14.2				
Approach LOS		F			A			B				

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		24.0	10.0	26.0				36.0				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		19.5	5.5	21.5				31.5				
Max Q Clear Time (g_c+I1), s		3.8	4.3	24.0				2.0				
Green Ext Time (p_c), s		0.2	0.0	0.0				10.3				

Intersection Summary												
HCM 6th Ctrl Delay			127.6									
HCM 6th LOS			F									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	173	1309	33	664	283	74	30	54	622
v/c Ratio	0.65	0.48	0.27	0.59	0.41	0.14	0.05	0.11	0.79
Control Delay	34.7	11.1	22.1	19.9	4.4	14.9	0.1	14.6	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	11.1	22.1	19.9	4.4	14.9	0.1	14.6	16.0
Queue Length 50th (ft)	71	88	9	104	0	18	0	13	65
Queue Length 95th (ft)	m70	m84	30	153	45	44	0	34	#246
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	265	2706	124	1120	694	537	600	502	787
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.48	0.27	0.59	0.41	0.14	0.05	0.11	0.79

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	1174	30	30	611	260	36	32	28	38	12	572
Future Volume (veh/h)	159	1174	30	30	611	260	36	32	28	38	12	572
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	173	1276	33	33	664	283	39	35	30	41	13	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	2730	71	253	1125	502	347	285	528	439	125	
Arrive On Green	0.30	1.00	1.00	0.32	0.32	0.32	0.33	0.33	0.33	0.33	0.33	0.00
Sat Flow, veh/h	1781	5118	132	420	3554	1585	766	856	1585	1000	376	1585
Grp Volume(v), veh/h	173	849	460	33	664	283	74	0	30	54	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1847	420	1777	1585	1622	0	1585	1376	0	1585
Q Serve(g_s), s	5.1	0.0	0.0	3.5	9.4	8.9	0.0	0.0	0.8	0.8	0.0	0.0
Cycle Q Clear(g_c), s	5.1	0.0	0.0	3.5	9.4	8.9	1.6	0.0	0.8	2.4	0.0	0.0
Prop In Lane	1.00		0.07	1.00		1.00	0.53		1.00	0.76		1.00
Lane Grp Cap(c), veh/h	267	1815	985	253	1125	502	632	0	528	564	0	
V/C Ratio(X)	0.65	0.47	0.47	0.13	0.59	0.56	0.12	0.00	0.06	0.10	0.00	
Avail Cap(c_a), veh/h	267	1815	985	253	1125	502	632	0	528	564	0	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.6	0.0	0.0	15.2	17.2	17.1	13.9	0.0	13.6	14.1	0.0	0.0
Incr Delay (d2), s/veh	11.5	0.9	1.6	1.1	2.3	4.5	0.4	0.0	0.2	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.2	0.4	0.4	3.8	3.6	0.7	0.0	0.3	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	0.9	1.6	16.3	19.5	21.6	14.3	0.0	13.8	14.4	0.0	0.0
LnGrp LOS	C	A	A	B	B	C	B	A	B	B	A	
Approach Vol, veh/h		1482			980			104			54	A
Approach Delay, s/veh		4.6			20.0			14.1			14.4	
Approach LOS		A			B			B			B	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		24.0		36.0		24.0	13.0	23.0				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.5		31.5		19.5	8.5	18.5				
Max Q Clear Time (g_c+I1), s		3.6		2.0		4.4	7.1	11.4				
Green Ext Time (p_c), s		0.3		11.0		0.2	0.1	3.4				

Intersection Summary												
HCM 6th Ctrl Delay			11.0									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

FUTURE PLUS PROJECT

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	1345	42	1028	1487
v/c Ratio	1.48dr	0.28	0.54	1.11
Control Delay	157.5	31.8	9.1	80.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	157.5	31.8	9.1	80.2
Queue Length 50th (ft)	~327	17	75	~332
Queue Length 95th (ft)	#448	m27	143	#456
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	1047	150	1916	1344
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.28	0.28	0.54	1.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	93	388	756	39	946	0	0	1203	165
Future Volume (veh/h)	0	0	0	93	388	756	39	946	0	0	1203	165
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				101	422	822	42	1028	0	0	1308	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				110	461	489	151	1925	0	0	1356	
Arrive On Green				0.31	0.31	0.31	0.17	1.00	0.00	0.00	0.38	0.00
Sat Flow, veh/h				358	1495	1585	1781	3647	0	0	3741	0
Grp Volume(v), veh/h				523	0	822	42	1028	0	0	1308	0
Grp Sat Flow(s),veh/h/ln				1852	0	1585	1781	1777	0	0	1777	0
Q Serve(g_s), s				16.3	0.0	18.5	1.2	0.0	0.0	0.0	21.6	0.0
Cycle Q Clear(g_c), s				16.3	0.0	18.5	1.2	0.0	0.0	0.0	21.6	0.0
Prop In Lane				0.19		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				571	0	489	151	1925	0	0	1356	
V/C Ratio(X)				0.92	0.00	1.68	0.28	0.53	0.00	0.00	0.96	
Avail Cap(c_a), veh/h				571	0	489	151	1925	0	0	1356	
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				20.0	0.0	20.8	23.3	0.0	0.0	0.0	18.2	0.0
Incr Delay (d2), s/veh				21.7	0.0	315.7	4.5	1.1	0.0	0.0	17.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.7	0.0	49.0	0.7	0.3	0.0	0.0	10.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				41.7	0.0	336.4	27.8	1.1	0.0	0.0	35.4	0.0
LnGrp LOS				D	A	F	C	A	A	A	D	
Approach Vol, veh/h					1345			1070			1308	A
Approach Delay, s/veh					221.9			2.1			35.4	
Approach LOS					F			A			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	37.0		9.6	27.4		23.0						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	32.5		5.1	22.9		18.5						
Max Q Clear Time (g_c+I1), s	2.0		3.2	23.6		20.5						
Green Ext Time (p_c), s	8.9		0.0	0.0		0.0						

Intersection Summary	
HCM 6th Ctrl Delay	93.2
HCM 6th LOS	F

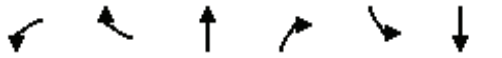
Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	1052	733	111	178	968
v/c Ratio	0.77	0.89	0.15	0.24	1.67dl
Control Delay	16.6	23.4	9.3	2.9	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	23.4	9.3	2.9	40.5
Queue Length 50th (ft)	114	86	17	0	122
Queue Length 95th (ft)	#174	#289	40	26	#236
Internal Link Dist (ft)	790		525		404
Turn Bay Length (ft)	350	20			
Base Capacity (vph)	1373	828	745	740	992
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.77	0.89	0.15	0.24	0.98

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	968	674	102	164	786	105
Future Volume (veh/h)	968	674	102	164	786	105
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1052	733	111	178	854	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1382	634	748	634	555	647
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	3456	1585	1870	1585	987	1702
Grp Volume(v), veh/h	1052	733	111	178	854	114
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	987	1617
Q Serve(g_s), s	11.8	18.0	1.7	3.4	16.3	2.0
Cycle Q Clear(g_c), s	11.8	18.0	1.7	3.4	18.0	2.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	1382	634	748	634	555	647
V/C Ratio(X)	0.76	1.16	0.15	0.28	1.54	0.18
Avail Cap(c_a), veh/h	1382	634	748	634	555	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.6	13.5	8.6	9.1	16.7	8.7
Incr Delay (d2), s/veh	4.0	87.2	0.4	1.1	251.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	20.2	0.6	1.1	44.1	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.6	100.7	9.0	10.2	268.3	9.3
LnGrp LOS	B	F	A	B	F	A
Approach Vol, veh/h	1785		289			968
Approach Delay, s/veh	50.6		9.8			237.8
Approach LOS	D		A			F

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	22.5			22.5	22.5
Change Period (Y+Rc), s	4.5			4.5	4.5
Max Green Setting (Gmax), s	18.0			18.0	18.0
Max Q Clear Time (g_c+I1), s	5.4			20.0	20.0
Green Ext Time (p_c), s	0.9			0.0	0.0

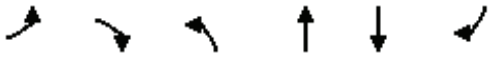
Intersection Summary	
HCM 6th Ctrl Delay	106.3
HCM 6th LOS	F

Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	1776	800	820	586	533
v/c Ratio	1.43	0.93	0.43	0.69	0.68
Control Delay	222.8	52.2	13.3	36.3	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	222.8	52.2	13.3	36.3	7.8
Queue Length 50th (ft)	~707	229	138	160	0
Queue Length 95th (ft)	#844	#342	182	218	86
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	1245	858	1907	845	783
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.43	0.93	0.43	0.69	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1256	378	736	754	539	490
Future Volume (veh/h)	1256	378	736	754	539	490
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	888	922	800	820	586	533
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	643	572	864	1915	849	379
Arrive On Green	0.36	0.36	0.25	0.54	0.24	0.24
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	888	922	800	820	586	533
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	32.5	32.5	20.3	12.4	13.5	21.5
Cycle Q Clear(g_c), s	32.5	32.5	20.3	12.4	13.5	21.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	643	572	864	1915	849	379
V/C Ratio(X)	1.38	1.61	0.93	0.43	0.69	1.41
Avail Cap(c_a), veh/h	643	572	864	1915	849	379
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	28.7	32.9	12.4	31.2	34.2
Incr Delay (d2), s/veh	180.8	282.9	17.2	0.7	4.6	198.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	45.5	68.4	10.3	4.8	6.2	28.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	209.6	311.7	50.1	13.1	35.8	232.8
LnGrp LOS	F	F	D	B	D	F
Approach Vol, veh/h	1810			1620	1119	
Approach Delay, s/veh	261.6			31.4	129.7	
Approach LOS	F			C	F	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		53.0		37.0	27.0	26.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		48.5		32.5	22.5	21.5
Max Q Clear Time (g_c+I1), s		14.4		34.5	22.3	23.5
Green Ext Time (p_c), s		6.8		0.0	0.1	0.0

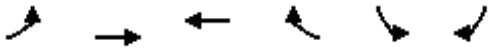
Intersection Summary	
HCM 6th Ctrl Delay	147.2
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	504	402	212	1142	196
v/c Ratio	0.42	0.48	0.13	0.59	0.12
Control Delay	11.3	16.2	0.2	8.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	16.2	0.2	8.7	0.2
Queue Length 50th (ft)	23	46	0	82	0
Queue Length 95th (ft)	27	69	0	157	0
Internal Link Dist (ft)	735	442		1084	
Turn Bay Length (ft)				450	
Base Capacity (vph)	2034	1415	1583	1927	1583
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.28	0.13	0.59	0.12

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑	↱	↰↰	↱
Traffic Volume (veh/h)	0	464	370	195	1051	180
Future Volume (veh/h)	0	464	370	195	1051	180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	504	402	0	1142	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	2
Cap, veh/h	0	1012	704		2080	
Arrive On Green	0.00	0.07	0.20	0.00	0.60	0.00
Sat Flow, veh/h	0	5443	3647	1585	3456	1585
Grp Volume(v), veh/h	0	504	402	0	1142	0
Grp Sat Flow(s),veh/h/ln	0	1702	1777	1585	1728	1585
Q Serve(g_s), s	0.0	4.3	4.6	0.0	8.8	0.0
Cycle Q Clear(g_c), s	0.0	4.3	4.6	0.0	8.8	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1012	704		2080	
V/C Ratio(X)	0.00	0.50	0.57		0.55	
Avail Cap(c_a), veh/h	0	2042	1421		2080	
HCM Platoon Ratio	1.00	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.98	0.75	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	18.9	16.3	0.0	5.3	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.5	0.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	1.7	0.0	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	19.2	16.9	0.0	6.4	0.0
LnGrp LOS	A	B	B		A	
Approach Vol, veh/h		504	402	A	1142	A
Approach Delay, s/veh		19.2	16.9		6.4	
Approach LOS		B	B		A	

Timer - Assigned Phs		4		6	8
Phs Duration (G+Y+Rc), s		13.4		31.6	13.4
Change Period (Y+Rc), s		4.5		4.5	4.5
Max Green Setting (Gmax), s		18.0		18.0	18.0
Max Q Clear Time (g_c+I1), s		6.3		10.8	6.6
Green Ext Time (p_c), s		2.6		2.9	2.0

Intersection Summary	
HCM 6th Ctrl Delay	11.6
HCM 6th LOS	B

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	583	212	852	162	1971	955	452
v/c Ratio	0.40	0.14	1.20	1.01	1.28	1.04	0.48
Control Delay	14.1	11.8	124.2	98.7	152.4	60.9	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	11.8	124.2	98.7	152.4	60.9	3.2
Queue Length 50th (ft)	79	25	~407	~61	~535	~220	0
Queue Length 95th (ft)	115	44	#614	#174	#670	#330	46
Internal Link Dist (ft)		442			757	336	
Turn Bay Length (ft)				120			
Base Capacity (vph)	1452	1497	710	161	1539	921	947
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.14	1.20	1.01	1.28	1.04	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	536	195	784	0	0	0	149	1484	329	47	832	416
Future Volume (veh/h)	536	195	784	0	0	0	149	1484	329	47	832	416
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	583	212	0				162	1613	358	51	904	452
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	1462	1503					111	1277	273	71	852	695
Arrive On Green	0.42	0.42	0.00				0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	3456	3554	1585				402	2912	623	0	1944	1585
Grp Volume(v), veh/h	583	212	0				162	960	1011	179	776	452
Grp Sat Flow(s),veh/h/ln	1728	1777	1585				402	1777	1758	327	1617	1585
Q Serve(g_s), s	7.6	2.4	0.0				0.0	28.5	28.5	0.0	28.5	14.6
Cycle Q Clear(g_c), s	7.6	2.4	0.0				28.5	28.5	28.5	28.5	28.5	14.6
Prop In Lane	1.00		1.00				1.00		0.35	0.28		1.00
Lane Grp Cap(c), veh/h	1462	1503					111	779	771	215	709	695
V/C Ratio(X)	0.40	0.14					1.46	1.23	1.31	0.83	1.09	0.65
Avail Cap(c_a), veh/h	1462	1503					111	779	771	215	709	695
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.0	11.5	0.0				32.5	18.3	18.3	15.6	18.2	14.3
Incr Delay (d2), s/veh	0.8	0.2	0.0				250.8	115.7	149.2	30.2	62.5	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.9	0.0				9.4	35.1	41.9	3.2	21.4	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.8	11.7	0.0				283.3	134.0	167.5	45.7	80.7	19.0
LnGrp LOS	B	B					F	F	F	D	F	B
Approach Vol, veh/h		795	A					2133			1407	
Approach Delay, s/veh		13.3						161.2			56.5	
Approach LOS		B						F			E	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	33.0	32.0	33.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	28.5	27.5	28.5
Max Q Clear Time (g_c+I1), s	30.5	9.6	30.5
Green Ext Time (p_c), s	0.0	3.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	100.1
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	223	227	555	847	1335	970	260
v/c Ratio	0.44	0.45	0.35	1.41	0.69	0.64	0.40
Control Delay	20.4	20.5	0.6	220.0	12.1	20.4	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	20.4	20.5	0.6	220.0	12.6	20.4	4.6
Queue Length 50th (ft)	67	69	0	~219	164	109	0
Queue Length 95th (ft)	126	127	0	#319	230	148	44
Internal Link Dist (ft)		517			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	504	505	1583	600	1946	1525	656
Starvation Cap Reductn	0	0	0	0	229	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.45	0.35	1.41	0.78	0.64	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	411	3	511	779	1228	0	0	892	239
Future Volume (veh/h)	0	0	0	411	3	511	779	1228	0	0	892	239
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				449	0	0	847	1335	0	0	970	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1069	0		605	1955	0	0	1532	
Arrive On Green				0.30	0.00	0.00	0.17	0.55	0.00	0.00	0.30	0.00
Sat Flow, veh/h				3563	0	1585	3456	3647	0	0	5274	1585
Grp Volume(v), veh/h				449	0	0	847	1335	0	0	970	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1777	0	0	1702	1585
Q Serve(g_s), s				6.1	0.0	0.0	10.5	16.2	0.0	0.0	9.8	0.0
Cycle Q Clear(g_c), s				6.1	0.0	0.0	10.5	16.2	0.0	0.0	9.8	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1069	0		605	1955	0	0	1532	
V/C Ratio(X)				0.42	0.00		1.40	0.68	0.00	0.00	0.63	
Avail Cap(c_a), veh/h				1069	0		605	1955	0	0	1532	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				16.8	0.0	0.0	24.8	9.7	0.0	0.0	18.1	0.0
Incr Delay (d2), s/veh				1.2	0.0	0.0	190.1	2.0	0.0	0.0	2.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.4	0.0	0.0	19.9	5.4	0.0	0.0	3.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				18.0	0.0	0.0	214.9	11.7	0.0	0.0	20.2	0.0
LnGrp LOS				B	A		F	B	A	A	C	
Approach Vol, veh/h					449	A		2182			970	A
Approach Delay, s/veh					18.0			90.6			20.2	
Approach LOS					B			F			C	

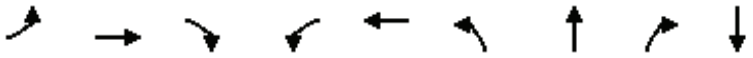
Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	37.5		15.0	22.5		22.5						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	33.0		10.5	18.0		18.0						
Max Q Clear Time (g_c+I1), s	18.2		12.5	11.8		8.1						
Green Ext Time (p_c), s	8.5		0.0	3.3		1.2						

Intersection Summary	
HCM 6th Ctrl Delay	62.6
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	5	880	670	78	1491	53	8	221	3
v/c Ratio	0.04	0.76	0.69	0.44	0.58	0.09	no cap	0.33	0.01
Control Delay	13.6	21.9	5.9	27.8	12.4	13.4		4.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	13.6	21.9	5.9	27.8	12.4	13.4	Error	4.0	0.0
Queue Length 50th (ft)	1	132	0	28	120	12	0	0	0
Queue Length 95th (ft)	8	192	62	m31	m154	31	0	37	0
Internal Link Dist (ft)		1202			351		1055		58
Turn Bay Length (ft)	45		160	50				660	
Base Capacity (vph)	135	1158	968	177	2588	579	1	666	208
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.76	0.69	0.44	0.58	0.09	8.00	0.33	0.01

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	810	616	72	1359	13	49	7	203	0	0	3
Future Volume (veh/h)	5	810	616	72	1359	13	49	7	203	0	0	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	5	880	670	78	1477	14	53	8	221			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2			
Cap, veh/h	246	1163	519	178	2655	25	583	0	519			
Arrive On Green	0.33	0.33	0.33	0.20	1.00	1.00	0.33	0.33	0.33			
Sat Flow, veh/h	353	3554	1585	1781	5216	49	1781	0	1585			
Grp Volume(v), veh/h	5	880	670	78	964	527	53	0	221			
Grp Sat Flow(s),veh/h/ln	353	1777	1585	1781	1702	1861	1781	0	1585			
Q Serve(g_s), s	0.5	12.2	18.0	2.1	0.0	0.0	1.1	0.0	6.0			
Cycle Q Clear(g_c), s	0.5	12.2	18.0	2.1	0.0	0.0	1.1	0.0	6.0			
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00			
Lane Grp Cap(c), veh/h	246	1163	519	178	1733	948	583	0	519			
V/C Ratio(X)	0.02	0.76	1.29	0.44	0.56	0.56	0.09	0.00	0.43			
Avail Cap(c_a), veh/h	246	1163	519	178	1733	948	583	0	519			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	12.6	16.5	18.5	20.6	0.0	0.0	12.8	0.0	14.5			
Incr Delay (d2), s/veh	0.2	4.6	145.1	7.6	1.3	2.4	0.3	0.0	2.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	5.1	26.6	1.2	0.3	0.6	0.5	0.0	2.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.8	21.2	163.6	28.3	1.3	2.4	13.1	0.0	17.0			
LnGrp LOS	B	C	F	C	A	A	B	A	B			
Approach Vol, veh/h		1555			1569			274				
Approach Delay, s/veh		82.5			3.0			16.3				
Approach LOS		F			A			B				

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		22.5	10.0	22.5				32.5				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		18.0	5.5	18.0				28.0				
Max Q Clear Time (g_c+I1), s		8.0	4.1	20.0				2.0				
Green Ext Time (p_c), s		0.6	0.0	0.0				12.2				

Intersection Summary	
HCM 6th Ctrl Delay	40.5
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	134	969	20	1037	317	12	14	36	533
v/c Ratio	0.76	0.38	0.12	0.90	0.43	0.02	0.02	0.07	0.76
Control Delay	51.8	10.3	15.1	30.2	4.2	12.8	0.1	13.2	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	10.3	15.1	30.2	4.2	12.8	0.1	13.2	17.4
Queue Length 50th (ft)	50	54	4	166	0	3	0	8	70
Queue Length 95th (ft)	m#79	98	18	#276	44	12	0	24	#222
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	177	2581	172	1158	731	524	598	553	697
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.38	0.12	0.90	0.43	0.02	0.02	0.07	0.76

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	854	38	18	954	292	10	1	13	17	17	490
Future Volume (veh/h)	123	854	38	18	954	292	10	1	13	17	17	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	928	41	20	1037	317	11	1	14	18	18	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	2552	113	321	1163	519	552	45	519	331	301	
Arrive On Green	0.20	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.00
Sat Flow, veh/h	1781	5013	221	580	3554	1585	1303	137	1585	711	919	1585
Grp Volume(v), veh/h	134	630	339	20	1037	317	12	0	14	36	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1831	580	1777	1585	1440	0	1585	1630	0	1585
Q Serve(g_s), s	3.9	0.0	0.0	1.3	15.2	9.2	0.0	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.9	0.0	0.0	1.3	15.2	9.2	0.2	0.0	0.3	0.7	0.0	0.0
Prop In Lane	1.00		0.12	1.00		1.00	0.92		1.00	0.50		1.00
Lane Grp Cap(c), veh/h	178	1733	932	321	1163	519	597	0	519	632	0	
V/C Ratio(X)	0.75	0.36	0.36	0.06	0.89	0.61	0.02	0.00	0.03	0.06	0.00	
Avail Cap(c_a), veh/h	178	1733	932	321	1163	519	597	0	519	632	0	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.4	0.0	0.0	12.9	17.6	15.6	12.5	0.0	12.6	12.7	0.0	0.0
Incr Delay (d2), s/veh	25.1	0.6	1.1	0.4	10.5	5.3	0.1	0.0	0.1	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.1	0.3	0.2	7.1	3.7	0.1	0.0	0.1	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	0.6	1.1	13.3	28.1	20.8	12.6	0.0	12.7	12.9	0.0	0.0
LnGrp LOS	D	A	A	B	C	C	B	A	B	B	A	
Approach Vol, veh/h		1103			1374			26			36	A
Approach Delay, s/veh		6.3			26.2			12.6			12.9	
Approach LOS		A			C			B			B	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5		32.5		22.5	10.0	22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0		28.0		18.0	5.5	18.0				
Max Q Clear Time (g_c+I1), s		2.3		2.0		2.7	5.9	17.2				
Green Ext Time (p_c), s		0.0		7.2		0.1	0.0	0.6				

Intersection Summary												
HCM 6th Ctrl Delay			17.2									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	1008	20	1099	2420
v/c Ratio	1.64dr	0.17	0.49	1.41
Control Delay	131.5	36.6	7.9	208.5
Queue Delay	0.0	0.0	0.5	0.0
Total Delay	131.5	36.6	8.5	208.5
Queue Length 50th (ft)	~286	9	122	~817
Queue Length 95th (ft)	#406	30	163	#957
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	833	118	2264	1719
Starvation Cap Reductn	0	0	674	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.21	0.17	0.69	1.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	93	122	712	18	1011	0	1	1989	236
Future Volume (veh/h)	0	0	0	93	122	712	18	1011	0	1	1989	236
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h				101	133	774	20	1099	0	1	2162	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	2	2	2
Cap, veh/h				190	250	380	119	2274	0	48	1790	
Arrive On Green				0.24	0.24	0.24	0.07	0.64	0.00	0.51	0.51	0.00
Sat Flow, veh/h				790	1041	1585	1781	3647	0	0	3572	0
Grp Volume(v), veh/h				234	0	774	20	1099	0	1160	1003	0
Grp Sat Flow(s),veh/h/ln				1831	0	1585	1781	1777	0	1870	1617	0
Q Serve(g_s), s				8.4	0.0	18.0	0.8	12.1	0.0	4.1	38.5	0.0
Cycle Q Clear(g_c), s				8.4	0.0	18.0	0.8	12.1	0.0	38.5	38.5	0.0
Prop In Lane				0.43		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				439	0	380	119	2274	0	1008	830	
V/C Ratio(X)				0.53	0.00	2.03	0.17	0.48	0.00	1.15	1.21	
Avail Cap(c_a), veh/h				439	0	380	119	2274	0	1008	830	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				24.8	0.0	28.5	33.0	7.0	0.0	19.2	18.3	0.0
Incr Delay (d2), s/veh				4.6	0.0	474.7	3.0	0.7	0.0	79.6	105.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.0	0.0	56.6	0.4	3.9	0.0	38.1	36.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				29.4	0.0	503.2	36.1	7.8	0.0	98.7	123.2	0.0
LnGrp LOS				C	A	F	D	A	A	F	F	
Approach Vol, veh/h					1008			1119			2163	A
Approach Delay, s/veh					393.2			8.3			110.1	
Approach LOS					F			A			F	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	52.5		9.5	43.0		22.5						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	48.0		5.0	38.5		18.0						
Max Q Clear Time (g_c+I1), s	14.1		2.8	40.5		20.0						
Green Ext Time (p_c), s	10.0		0.0	0.0		0.0						

Intersection Summary		
HCM 6th Ctrl Delay	150.1	
HCM 6th LOS	F	

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

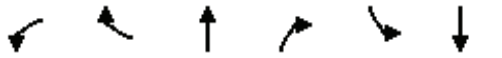
Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	476	613	63	537	1576
v/c Ratio	0.61	1.09	0.05	0.44	1.63dl
Control Delay	31.8	86.3	4.9	1.7	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	86.3	4.9	1.7	27.7
Queue Length 50th (ft)	110	~240	10	0	328
Queue Length 95th (ft)	158	#440	22	29	#548
Internal Link Dist (ft)	790		525		404
Turn Bay Length (ft)	350	20			
Base Capacity (vph)	776	560	1231	1228	1652
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	1.09	0.05	0.44	0.95

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	438	564	58	494	1324	126
Future Volume (veh/h)	438	564	58	494	1324	126
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	476	613	63	537	1439	137
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	782	359	1237	1048	622	1069
Arrive On Green	0.23	0.23	0.66	0.66	0.66	0.66
Sat Flow, veh/h	3456	1585	1870	1585	804	1702
Grp Volume(v), veh/h	476	613	63	537	1439	137
Grp Sat Flow(s),veh/h/ln	1728	1585	1870	1585	804	1617
Q Serve(g_s), s	9.9	18.1	0.9	13.9	52.0	2.5
Cycle Q Clear(g_c), s	9.9	18.1	0.9	13.9	52.9	2.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	782	359	1237	1048	622	1069
V/C Ratio(X)	0.61	1.71	0.05	0.51	2.31	0.13
Avail Cap(c_a), veh/h	782	359	1237	1048	622	1069
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	30.9	4.8	6.9	17.8	5.0
Incr Delay (d2), s/veh	3.5	330.9	0.1	1.8	596.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	39.6	0.3	4.3	115.0	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.3	361.8	4.8	8.7	614.4	5.3
LnGrp LOS	C	F	A	A	F	A
Approach Vol, veh/h	1089		600			1576
Approach Delay, s/veh	217.3		8.3			561.4
Approach LOS	F		A			F

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		57.4			57.4	22.6
Change Period (Y+Rc), s		4.5			4.5	4.5
Max Green Setting (Gmax), s		52.9			52.9	18.1
Max Q Clear Time (g_c+I1), s		15.9			54.9	20.1
Green Ext Time (p_c), s		2.6			0.0	0.0

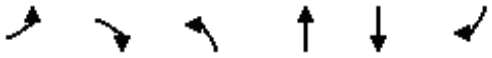
Intersection Summary		
HCM 6th Ctrl Delay		345.0
HCM 6th LOS		F

Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	1385	797	562	949	693
v/c Ratio	1.34	1.05	0.28	0.93	0.77
Control Delay	182.1	75.5	8.0	42.2	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	182.1	75.5	8.0	42.2	10.1
Queue Length 50th (ft)	~406	~196	58	207	20
Queue Length 95th (ft)	#531	#301	84	#324	#135
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	1037	760	2027	1016	903
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.34	1.05	0.28	0.93	0.77

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1029	246	733	517	873	638
Future Volume (veh/h)	1029	246	733	517	873	638
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	692	723	797	562	949	693
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	532	473	765	2036	1020	455
Arrive On Green	0.30	0.30	0.22	0.57	0.29	0.29
Sat Flow, veh/h	1781	1585	3456	3647	3647	1585
Grp Volume(v), veh/h	692	723	797	562	949	693
Grp Sat Flow(s),veh/h/ln	1781	1585	1728	1777	1777	1585
Q Serve(g_s), s	20.9	20.9	15.5	5.6	18.2	20.1
Cycle Q Clear(g_c), s	20.9	20.9	15.5	5.6	18.2	20.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	532	473	765	2036	1020	455
V/C Ratio(X)	1.30	1.53	1.04	0.28	0.93	1.52
Avail Cap(c_a), veh/h	532	473	765	2036	1020	455
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	24.5	27.3	7.6	24.3	25.0
Incr Delay (d2), s/veh	148.8	248.0	43.8	0.3	15.7	246.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.1	48.2	10.7	1.9	9.3	38.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	173.4	272.6	71.1	7.9	39.9	271.1
LnGrp LOS	F	F	F	A	D	F
Approach Vol, veh/h	1415			1359	1642	
Approach Delay, s/veh	224.1			45.0	137.5	
Approach LOS	F			D	F	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.6		25.4	20.0	24.6
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		40.1		20.9	15.5	20.1
Max Q Clear Time (g_c+I1), s		7.6		22.9	17.5	22.1
Green Ext Time (p_c), s		4.2		0.0	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay	136.8	
HCM 6th LOS	F	

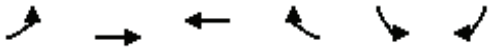
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	860	423	478	1191	211
v/c Ratio	0.51	0.36	0.30	0.74	0.13
Control Delay	11.7	11.7	0.5	15.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.7	11.7	0.5	15.5	0.2
Queue Length 50th (ft)	54	41	0	119	0
Queue Length 95th (ft)	81	61	0	#247	0
Internal Link Dist (ft)	735	442		1084	
Turn Bay Length (ft)				450	
Base Capacity (vph)	2034	1415	1583	1602	1583
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.42	0.30	0.30	0.74	0.13

Intersection Summary

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑	↱	↰↰	↱
Traffic Volume (veh/h)	0	791	389	440	1096	194
Future Volume (veh/h)	0	791	389	440	1096	194
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	860	423	0	1191	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	2
Cap, veh/h	0	1336	930		1860	
Arrive On Green	0.00	0.52	0.26	0.00	0.54	0.00
Sat Flow, veh/h	0	5443	3647	1585	3456	1585
Grp Volume(v), veh/h	0	860	423	0	1191	0
Grp Sat Flow(s),veh/h/ln	0	1702	1777	1585	1728	1585
Q Serve(g_s), s	0.0	5.4	4.5	0.0	10.9	0.0
Cycle Q Clear(g_c), s	0.0	5.4	4.5	0.0	10.9	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1336	930		1860	
V/C Ratio(X)	0.00	0.64	0.45		0.64	
Avail Cap(c_a), veh/h	0	2042	1421		1860	
HCM Platoon Ratio	1.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.92	0.47	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	9.2	13.9	0.0	7.3	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.2	0.0	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.4	1.5	0.0	3.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	9.7	14.1	0.0	9.0	0.0
LnGrp LOS	A	A	B		A	
Approach Vol, veh/h		860	423	A	1191	A
Approach Delay, s/veh		9.7	14.1		9.0	
Approach LOS		A	B		A	

Timer - Assigned Phs		4		6	8
Phs Duration (G+Y+Rc), s		16.3		28.7	16.3
Change Period (Y+Rc), s		4.5		4.5	4.5
Max Green Setting (Gmax), s		18.0		18.0	18.0
Max Q Clear Time (g_c+I1), s		7.4		12.9	6.5
Green Ext Time (p_c), s		4.3		2.4	2.1

Intersection Summary	
HCM 6th Ctrl Delay	10.1
HCM 6th LOS	B

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	472	540	1039	160	1999	1577	741
v/c Ratio	0.40	0.44	1.86	1.74	1.06	1.17	0.62
Control Delay	21.2	21.8	416.9	395.2	56.8	107.7	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.4
Total Delay	21.2	21.8	416.9	395.2	56.8	107.8	3.8
Queue Length 50th (ft)	91	108	~808	~120	~575	~503	0
Queue Length 95th (ft)	131	152	#1043	#194	#714	#635	47
Internal Link Dist (ft)		442			757	336	
Turn Bay Length (ft)				120			
Base Capacity (vph)	1180	1216	558	92	1893	1343	1198
Starvation Cap Reductn	0	0	0	0	0	54	133
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.44	1.86	1.74	1.06	1.22	0.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	434	497	956	0	0	0	147	1404	435	20	1431	682
Future Volume (veh/h)	434	497	956	0	0	0	147	1404	435	20	1431	682
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	472	540	0				160	1526	473	22	1555	741
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				2	2	2	2	2	2
Cap, veh/h	1188	1222					90	1472	433	47	1432	862
Arrive On Green	0.34	0.34	0.00				0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	3456	3554	1585				161	2707	797	0	2634	1585
Grp Volume(v), veh/h	472	540	0				160	974	1025	610	967	741
Grp Sat Flow(s),veh/h/ln	1728	1777	1585				161	1777	1727	1017	1617	1585
Q Serve(g_s), s	8.3	9.4	0.0				0.0	43.5	43.5	0.0	43.5	32.0
Cycle Q Clear(g_c), s	8.3	9.4	0.0				43.5	43.5	43.5	43.5	43.5	32.0
Prop In Lane	1.00		1.00				1.00		0.46	0.04		1.00
Lane Grp Cap(c), veh/h	1188	1222					90	966	939	600	879	862
V/C Ratio(X)	0.40	0.44					1.78	1.01	1.09	1.02	1.10	0.86
Avail Cap(c_a), veh/h	1188	1222					90	966	939	600	879	862
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00				1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	20.3	0.0				40.0	18.2	18.3	24.4	18.3	15.6
Incr Delay (d2), s/veh	1.0	1.2	0.0				390.9	30.9	57.6	41.2	61.4	10.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	3.9	0.0				11.5	23.6	29.9	16.6	29.0	26.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.9	21.5	0.0				430.9	49.2	75.9	65.6	79.6	26.6
LnGrp LOS	C	C					F	F	F	F	F	C
Approach Vol, veh/h		1012	A					2159			2318	
Approach Delay, s/veh		21.2						90.1			59.0	
Approach LOS		C						F			E	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		48.0		32.0		48.0						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		43.5		27.5		43.5						
Max Q Clear Time (g_c+I1), s		45.5		11.4		45.5						
Green Ext Time (p_c), s		0.0		5.0		0.0						

Intersection Summary		
HCM 6th Ctrl Delay		64.3
HCM 6th LOS		E

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	323	326	560	726	1212	1732	587
v/c Ratio	0.75	0.75	0.35	0.96	0.56	1.04	0.64
Control Delay	36.8	37.1	0.6	52.5	9.2	57.5	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.6	0.0	0.0
Total Delay	36.8	37.1	0.6	52.5	9.8	57.5	5.6
Queue Length 50th (ft)	134	135	0	159	141	~301	0
Queue Length 95th (ft)	#256	#258	0	#264	191	#391	65
Internal Link Dist (ft)		517			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	432	433	1583	760	2173	1670	913
Starvation Cap Reductn	0	0	0	0	526	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.75	0.35	0.96	0.74	1.04	0.64

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	595	2	515	668	1115	0	0	1593	540
Future Volume (veh/h)	0	0	0	595	2	515	668	1115	0	0	1593	540
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				648	0	0	726	1212	0	0	1732	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				916	0		765	2183	0	0	1678	
Arrive On Green				0.26	0.00	0.00	0.22	0.61	0.00	0.00	0.33	0.00
Sat Flow, veh/h				3563	0	1585	3456	3647	0	0	5274	1585
Grp Volume(v), veh/h				648	0	0	726	1212	0	0	1732	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1777	0	0	1702	1585
Q Serve(g_s), s				11.6	0.0	0.0	14.5	14.0	0.0	0.0	23.0	0.0
Cycle Q Clear(g_c), s				11.6	0.0	0.0	14.5	14.0	0.0	0.0	23.0	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				916	0		765	2183	0	0	1678	
V/C Ratio(X)				0.71	0.00		0.95	0.56	0.00	0.00	1.03	
Avail Cap(c_a), veh/h				916	0		765	2183	0	0	1678	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				23.6	0.0	0.0	26.9	7.9	0.0	0.0	23.5	0.0
Incr Delay (d2), s/veh				4.6	0.0	0.0	22.2	1.0	0.0	0.0	30.8	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.2	0.0	0.0	8.0	4.5	0.0	0.0	13.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.2	0.0	0.0	49.1	8.9	0.0	0.0	54.3	0.0
LnGrp LOS				C	A		D	A	A	A	F	
Approach Vol, veh/h					648	A		1938			1732	A
Approach Delay, s/veh					28.2			24.0			54.3	
Approach LOS					C			C			D	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	47.5		20.0	27.5		22.5						
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5						
Max Green Setting (Gmax), s	43.0		15.5	23.0		18.0						
Max Q Clear Time (g_c+I1), s	16.0		16.5	25.0		13.6						
Green Ext Time (p_c), s	10.6		0.0	0.0		1.1						

Intersection Summary	
HCM 6th Ctrl Delay	36.8
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBT
Lane Group Flow (vph)	8	1520	1042	77	1351	39	70	4
v/c Ratio	0.06	1.05	0.88	0.44	0.46	0.08	0.13	0.02
Control Delay	13.0	61.0	14.2	35.8	8.5	17.6	3.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	61.0	14.2	35.8	8.5	17.6	3.0	0.0
Queue Length 50th (ft)	2	~356	35	29	100	11	0	0
Queue Length 95th (ft)	10	#480	#359	67	129	31	16	0
Internal Link Dist (ft)		1202			351			58
Turn Bay Length (ft)	45		160	50			660	
Base Capacity (vph)	144	1442	1179	177	2930	503	522	176
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	1.05	0.88	0.44	0.46	0.08	0.13	0.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1398	959	71	1224	19	36	0	64	0	0	4
Future Volume (veh/h)	7	1398	959	71	1224	19	36	0	64	0	0	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	0	1870			
Adj Flow Rate, veh/h	8	1520	1042	77	1330	21	39	0	70			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	0	2			
Cap, veh/h	275	1449	646	178	2987	47	507	0	451			
Arrive On Green	0.41	0.41	0.41	0.10	0.58	0.58	0.28	0.00	0.28			
Sat Flow, veh/h	404	3554	1585	1781	5178	82	1781	0	1585			
Grp Volume(v), veh/h	8	1520	1042	77	874	477	39	0	70			
Grp Sat Flow(s),veh/h/ln	404	1777	1585	1781	1702	1856	1781	0	1585			
Q Serve(g_s), s	0.8	26.5	26.5	2.6	9.5	9.5	1.0	0.0	2.1			
Cycle Q Clear(g_c), s	0.8	26.5	26.5	2.6	9.5	9.5	1.0	0.0	2.1			
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00			
Lane Grp Cap(c), veh/h	275	1449	646	178	1964	1071	507	0	451			
V/C Ratio(X)	0.03	1.05	1.61	0.43	0.45	0.45	0.08	0.00	0.16			
Avail Cap(c_a), veh/h	275	1449	646	178	1964	1071	507	0	451			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	11.6	19.3	19.3	27.5	7.8	7.8	17.0	0.0	17.4			
Incr Delay (d2), s/veh	0.2	37.7	282.8	7.5	0.7	1.3	0.3	0.0	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	17.1	59.3	1.4	3.0	3.4	0.4	0.0	0.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.8	56.9	302.0	35.0	8.6	9.2	17.3	0.0	18.1			
LnGrp LOS	B	F	F	C	A	A	B	A	B			
Approach Vol, veh/h		2570			1428			109				
Approach Delay, s/veh		156.2			10.2			17.8				
Approach LOS		F			B			B				

Timer - Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		23.0	11.0	31.0				42.0				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		18.5	6.5	26.5				37.5				
Max Q Clear Time (g_c+I1), s		4.1	4.6	28.5				11.5				
Green Ext Time (p_c), s		0.2	0.0	0.0				10.8				

Intersection Summary												
HCM 6th Ctrl Delay			101.7									
HCM 6th LOS			F									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	173	1434	33	765	283	74	30	54	622
v/c Ratio	0.69	0.54	0.27	0.70	0.41	0.14	0.05	0.11	0.81
Control Delay	41.7	10.3	22.5	22.4	4.5	15.3	0.2	15.0	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	10.3	22.5	22.4	4.5	15.3	0.2	15.0	18.3
Queue Length 50th (ft)	61	113	9	126	0	19	0	13	75
Queue Length 95th (ft)	#141	148	31	182	45	44	0	35	#259
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	250	2665	123	1091	683	521	588	487	764
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.54	0.27	0.70	0.41	0.14	0.05	0.11	0.81

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	1289	30	30	704	260	36	32	28	38	12	572
Future Volume (veh/h)	159	1289	30	30	704	260	36	32	28	38	12	572
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	173	1401	33	33	765	283	39	35	30	41	13	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	2694	63	235	1096	489	340	279	515	429	122	
Arrive On Green	0.14	0.52	0.52	0.31	0.31	0.31	0.32	0.32	0.32	0.32	0.32	0.00
Sat Flow, veh/h	1781	5132	121	373	3554	1585	765	859	1585	996	377	1585
Grp Volume(v), veh/h	173	929	505	33	765	283	74	0	30	54	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1849	373	1777	1585	1623	0	1585	1373	0	1585
Q Serve(g_s), s	5.5	10.7	10.7	4.0	11.4	9.0	0.0	0.0	0.8	0.8	0.0	0.0
Cycle Q Clear(g_c), s	5.5	10.7	10.7	4.0	11.4	9.0	1.7	0.0	0.8	2.5	0.0	0.0
Prop In Lane	1.00		0.07	1.00		1.00	0.53		1.00	0.76		1.00
Lane Grp Cap(c), veh/h	252	1787	971	235	1096	489	619	0	515	552	0	
V/C Ratio(X)	0.69	0.52	0.52	0.14	0.70	0.58	0.12	0.00	0.06	0.10	0.00	
Avail Cap(c_a), veh/h	252	1787	971	235	1096	489	619	0	515	552	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.5	9.3	9.3	15.7	18.3	17.5	14.2	0.0	13.9	14.5	0.0	0.0
Incr Delay (d2), s/veh	14.1	1.1	2.0	1.2	3.7	4.9	0.4	0.0	0.2	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.5	4.0	0.4	4.8	3.6	0.7	0.0	0.3	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.6	10.4	11.3	17.0	22.0	22.4	14.6	0.0	14.1	14.8	0.0	0.0
LnGrp LOS	D	B	B	B	C	C	B	A	B	B	A	
Approach Vol, veh/h		1607			1081			104			54	A
Approach Delay, s/veh		13.7			21.9			14.5			14.8	
Approach LOS		B			C			B			B	

Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		24.0		36.0		24.0	13.0	23.0				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.5		31.5		19.5	8.5	18.5				
Max Q Clear Time (g_c+I1), s		3.7		12.7		4.5	7.5	13.4				
Green Ext Time (p_c), s		0.3		9.8		0.2	0.0	2.9				

Intersection Summary		
HCM 6th Ctrl Delay		16.9
HCM 6th LOS		B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX C2 TRUCK TRIP LENGTH ESTIMATES MEMORANDUM

FEHR PEERS

Memorandum

Date: October 17, 2021

To: Saied Naaseh
Gena Guisar
Danny Aleshire

From: Jolene Hayes, AICP
Drew Heckathorn

Subject: Carson District Project – Truck Trip Length Estimates

LB20-0018

Truck Trip Length Analysis

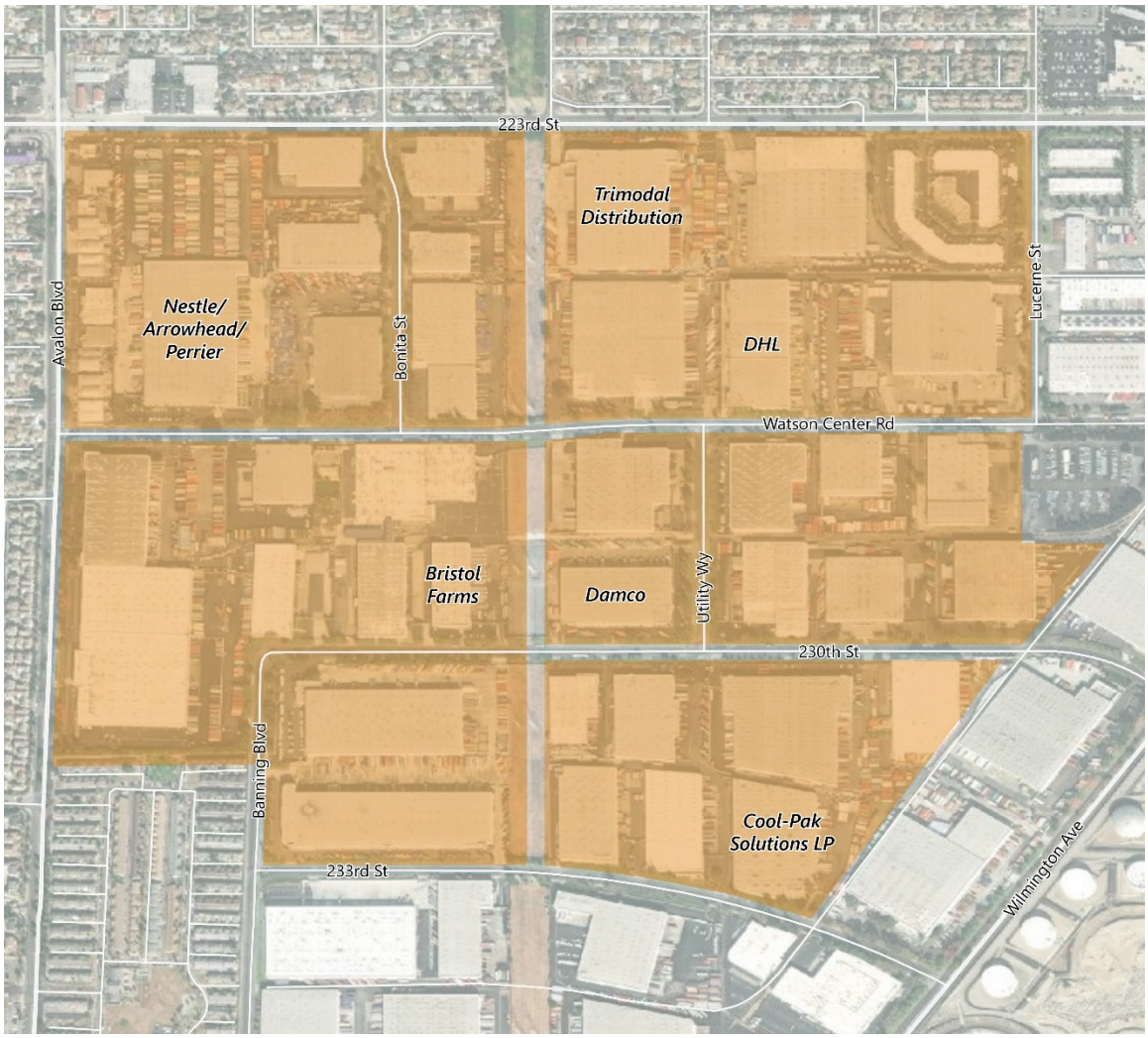
The proposed Carson District at South Bay Project will include 1,567,090 square feet of industrial warehousing to support the region's growing demand for additional fulfillment and distribution center, parcel hub, and light industrial uses. The site offers one of the few remaining vacant infill sites for industrial warehousing within close proximity to the Nation's largest to container ports – the Ports of Long Beach and Los Angeles, as well as to air cargo facilities at LAX and Long Beach Airports and five major intermodal rail yards located within 20 miles of the site. This memorandum documents the truck trip length assumptions used for estimating the Project's vehicle miles of travel (VMT) for heavy duty trucks.

Sample Area Location

To estimate the average trip length for trucks that will be serving the Project, an industrial area with similar uses located approximately one-mile south was selected for this analysis. The selected sample area is located on the south side of I-405. The selected area contains a cluster of industrial warehouses with operations similar to those anticipated at the Project, including fulfillment, distribution and other logistics-based uses. This nine-acre area was selected for this analysis due to both its proximity to the Project and the sample of similar use types located within the area. The selected sample area is generally bounded by 223rd Street to the north, Avalon Boulevard to the west, Sepulveda Boulevard to the south, and Wilmington Avenue to the East. Some major tenants at the time of this report included: third party logistics companies, such as NFI Industries,

Tri-Modal Distribution, and Damco who serve major beneficial cargo owners like Target, Home Depot, Walmart, and Lowe's; distribution centers, including Bristol Farms, David's Nursery and Nestle/Arrowhead/Perrier; cold storage, such as Cool-Pak Solutions; and parcel sortation/distribution facilities, such as DHL.

Figure 1: Sample Area Location



Truck Trip Analysis

Sample truck GPS data for January 1, 2019 to December 31, 2019 was obtained from the Streetlight data platform[1]to reflect a normal year of operations for the selected area. (Data for 2020 was not selected due to supply chain disruptions caused by the COVID-19 Pandemic.) The StreetLight sample data set consists of in-cabin GPS devices that provided data on more than

[1] https://www.streetlightdata.com/our-data/

17,000 truck trips to/from the selected analysis zone during the data collection period. The data was compared to static classification counts to determine the representativeness and reasonableness of the sample data and to develop an estimated average truck trip length.

Table 1 below shows the weighted average trip length information (origin-destination based) for the sample area zone for trucks. Trucks are classified by their on-board, navigation-GPS unit type, which is registered as a commercial use. **Table 2** shows the distribution of truck trip lengths traveling to and from the sample area.

TABLE 1: WEIGHTED AVERAGE TRIP LENGTH BY MODE FOR COMPARABLE ZONE

Travel Mode	Sample Area Average Trip Length (miles)
Trucks (i.e., heavy trucks with GVW>26,000 lbs, Medium truck with GVW between 14,000-26,000 lbs)	32.5

Source: 2019 StreetLight, Inc. Data, processed by Fehr & Peers.

Table 2: Sample Area Truck Trip Travel Distances

Sample Truck Trips by Trip Length Distribution	0-2 mi	2-5 mi	5-10 mi	10-20 mi	20-50 mi	50+ mi
Sample Area	8%	14%	14%	21%	22%	21%

Source: Fehr & Peers.

As shown in **Table 2**, the majority of trucks traveling to and/or from this area travel more than ten miles with the highest concentration of trucks traveling 20 to 50 miles. This coincides with the distance to major freight facilities in the region, including major industrial warehousing clusters in the Inland Empire.