APPENDIX IV.M
Transportation

IV.M.1

Traffic Impact Analysis prepared by Fehr & Peers dated March 2021

Integral Communities
River Park Residential Project

Traffic Impact Analysis *2nd Draft*

Prepared for: Integral Partners, LLC

Prepared by

FEHR & PEERS

100 Oceangate, Suite 1425
Long Beach, CA 90802
562.294.5848

April 2021

LB20-0009

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Table of Contents

Appendices

List of Figures

List of Tables

1. Executive Summary

Fehr & Peers has completed a transportation impact analysis (TIA) for the Integral Communities River Park Residential Project (Project) in the City of Long Beach, California. The Project consists of the following:

- A total of 226 dwelling units: 53 Carriage Townhouses, 99 Row Townhouses, and 74 Individual Condominium Units. The total site area is 20.34 acres, which includes 15.53 acres of developed area and 4.81 acres of open space.

The Project site is located in the Wrigley Heights community. This study was completed in support of the City's preparation of an Environmental Impact Report (EIR). Provided below is a description of metrics and scenarios analyzed in this study in coordination with the City of Long Beach and consistent with the TIA guidelines adopted by the City in July 2020. Fehr & Peers recognizes the importance of this TIA as it represents one of the first studies in the City to apply the Project's vehicle miles traveled (VMT) as the new CEQA evaluation metric for determining a transportation impact in accordance with the updated TIA guidelines.

CEQA checklist

- Project consistency with City transportation-related plans, programs, ordinances, and policies
- Residential VMT per Capita of the Project compared to the existing regional baseline
- Review of the site access and circulation plan to assess potential geometric hazards
- Emergency access evaluation

Non-CEQA

- **Existing Baseline (2020) Conditions** – This constitutes the environmental setting for a traffic analysis. The most recent available traffic conditions and physical geometry were used to determine existing baseline conditions.

- **Opening Year (2026) No Project** – Traffic conditions at the proposed opening year of the project without the project. This scenario includes traffic generated by other proposed and/or pending projects in the study area. The Baseline Conditions traffic volumes were adjusted to account for ambient growth using a 0.4 percent annual growth rate (per the City's TIA guidelines), followed by the inclusion of additional volumes generated by pending and approved projects proposed in the study area.

- **Opening Year (2026) Plus Project** – Traffic generated from the proposed Project was added onto the Opening Year 2026 No Project conditions to estimate Opening Year 2026 Plus Project conditions. This scenario was then compared to Opening Year 2026 No Project conditions to identify potential traffic effects resulting from the addition of the Project.

1.1 Major Findings

CEQA Project VMT

The Project site is located within 0.5-mile of the major transit stop at Wardlow Road & Pacific Place; the LA Metro Blue Line (or "A" Line) Wardlow station. The Project VMT impact would therefore be presumed insignificant, and no further analysis would be required according to the City's TIA guidelines. However, given the secondary conditions, the Project includes more parking for use by residents and visitors than required (by 5 parking spaces). As a result, the Project cannot be presumed to have a less than significant impact due to the Project's proximity to a major transit station.

The Project residential VMT per capita metric is estimated to be 10.2 VMT per capita, which is below the City's significance threshold of 11.8. Therefore, the Project is presumed to create a **less than significant VMT impact** and no further VMT analysis is required.

The Project has the following characteristics that make it perform well from a VMT impact analysis perspective:

- The proposed residential land use matches the surrounding land uses of single-family and multifamily housing;
- The Project's proximity to the Wardlow LA Metro light-rail station;
- The inclusion of affordable housing units; &
- The traffic analysis zone is already a borderline low-VMT area based on the City's VMT mapping.

Given the above finding of less than significant Project VMT impact, the identification of VMT mitigation measures is not required.

Other CEQA Project Findings

The Project features, location, and design generally support multimodal transportation options and would be consistent with policies, plans, and programs that support alternative transportation, including the *Mobility Element 2035*, the *Housing Element* and the *Safe Streets Action Plan*. Additionally, the Project would not substantially increase hazards or conflicts, and would contribute to overall walkability and bike-ability through enhancements to the Project site. Finally, the proposed Project site access would not result in inadequate emergency access. All access driveways will be designed according to City standards.

Non-CEQA Traffic Analysis

The Project is estimated to generate 1,688 daily vehicle trips, 119 AM peak hour vehicle trips (29 inbound/90 outbound), and 149 PM peak hour vehicle trips (93 inbound/56 outbound). These trips were evaluated to assess network capacity and level of service (LOS) for informational (non-CEQA) purposes only. Under existing Baseline (2020) Conditions, all study intersections operate at LOS D or better, except

for Santa Fe Avenue & Wardlow Road in the PM peak hour, Long Beach Boulevard & Wardlow Road in the PM peak hour, and Atlantic Avenue & Wardlow Road in the PM peak hour.

Opening Year (2026) No Project Traffic Level of Service

Four of the seven study intersections are projected to operate at LOS D or better during the morning and afternoon peak hours under Opening Year No Project conditions. The following signalized intersections are projected to operate at LOS E or F under Opening Year (2026) No Project conditions:

- Santa Fe Avenue & Wardlow Road – PM peak hour only
- Long Beach Boulevard & Wardlow Road – AM and PM peak hours
- Atlantic Avenue & Wardlow Road – PM peak hour only

Opening Year (2026) Plus Project Traffic Analysis

Four of the seven study intersections are projected to operate at LOS D or better during the morning and afternoon peak hours under Opening Year (2026) Plus Project conditions. The following signalized intersections are projected to operate at LOS E or F under Opening Year (2026) Plus Project conditions:

- Santa Fe Avenue & Wardlow Road – PM peak hour only
- Long Beach Boulevard & Wardlow Road – AM and PM peak hours
- Atlantic Avenue & Wardlow Road – PM peak hour only

Per the City's intersection performance criteria and LOS thresholds, the addition of project traffic would be responsible for LOS deficiencies if a signalized intersection would degrade from LOS D or better under baseline conditions to LOS E or LOS F with the addition of project trips in the opening year. None of the study intersections are projected to degrade from LOS D or better with the addition of Project peak hour trips. Furthermore, at locations already operating with LOS E or LOS F under opening year baseline conditions, the average delay increases by less than 2.5 seconds with the addition of Project trips. Additionally, six of the seven study locations are projected to experience at least one deficient queuing movement at the turn bays under Project conditions per the City's performance criteria.. The majority of the deficient turning movements are projected to occur in the Opening Year without Project traffic. Potential roadway improvements were identified for two of the seven study locations by extending the northbound left-turn storage bays to equal the projected 95th percentile queue length under Project conditions. Given these two locations already experience deficient turning movements in the Opening Year without the Project, a fair share contribution to implement these roadway improvements should be applied.

2. Introduction

Fehr & Peers has completed a transportation impact analysis (TIA) for the Integral Communities River Park Residential Project (Project) in the City of Long Beach, California. This report summarizes the methodology, findings, and conclusions of the analysis. This chapter outlines the transportation characteristics of the Project and the study area.

2.1 Project Description

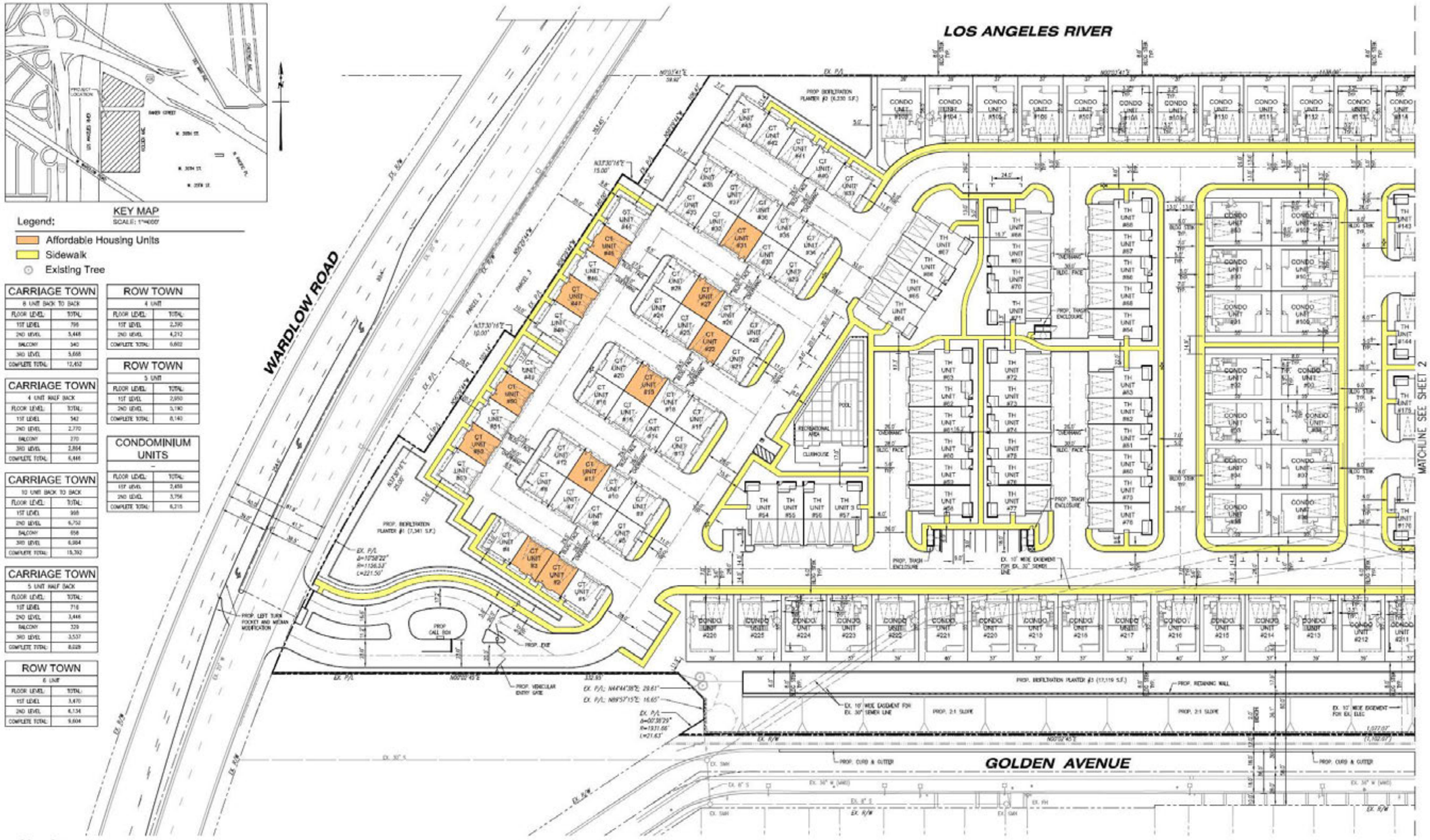
The Project includes 226 dwelling units, comprised of 53 Carriage Townhouses, 99 Row Townhouses, and 74 Individual Condominium Units. The total site area is 20.34 acres, which includes 15.53 acres of developed area and 4.81 acres of open space. The Project is located in the Wrigley Heights community, and is bounded by Wardlow Road to the south, the Los Angeles River to the west, the I-405 (San Diego) freeway to the north and Golden Avenue to the east. Access to the Project will be provided via a primary entrance on Wardlow Road. A second north driveway is provided on Baker Street – west of Golden Avenue – which will be gated/closed and accessed occasionally by City maintenance vehicles. The north Baker Street driveway is also designated as an additional access point for emergency vehicles.

The Project is located approximately 0.5-mile from the LA Metro Wardlow Blue Line (or "A" Line) light-rail station. The existing use is a vacant six-parcel lot.

Onsite parking access is provided by the main driveway along Wardlow Road. Vehicles are proposed to ingress the site with right-turn ins and left-turn ins at a proposed new driveway entrance along Wardlow Road, west of Magnolia Avenue. Similar, but reverse, limited patterns for egress movements are also proposed for the site, with right-turn only movements from the driveway entrance onto westbound Wardlow Road. The Project site would provide a total of 514 parking stalls, including 452 off-street parking (i.e., garage), 59 on-street parking for visitors/guests and 3 van accessible ADA (Americans with Disabilities Act) stalls. Internal circulation would be provided via several newly constructed private streets, along with pedestrian sidewalk infrastructure. The site plan is provided in **Figure 1**.

Project Phasing

The opening year of the Project is 2026. There is one phase to the Project, where all 226 dwelling units will be built, along with the on-site private streets, access driveways, sidewalks, and the layout of the open space area. Construction is expected to commence in 2022, with a total construction duration of 44 months.



Site Summary

- Existing Zoning: CS (Commercial Storage) & R-1-N (Single-Family Residential, Standard Lot)
- Proposed Zoning: Residential Planned Unit Development (PUD) Zoning District
- Flood Zone: "X" (Unshaded) Per FEMA Map Panel No. 06037C1955F (9/26/2008)
- APN 7203-002-001, 005, 007, 008, 009, & 010

- Developed Site Area = 15.53 Acres
- Open Space Site (Active) Area #1 = 4.81 Acres
- Total Site Area = 20.34 Acres

Baker Street:

- Right-of-way Dedication = 0.039 Acres (1,681.81 S.F.)
- Open Space (Active) = 0.353 Acres (15,356.33 S.F.)

Total Developed Site Area = 15.53 Acres
Condominium Units = 3.54 Acres
Carriage Townhouses = 1.02 Acres
Row Townhouses = 2.68 Acres
Clubhouse & Recreation Area = 0.09
Streets and Parking Areas = 3.94 Acres
Open Space Areas = 0.37 Acres
Open Space (Passive) Areas = 2.24 Acres
Open Space Slope = 0.91 Acres
Bio Filtration Areas = 0.74 Acres

Total Dwelling Units = 226
Carriage Townhouses (CT) = 53
Row Townhouses (TH)= 99
Condominium Units (Condo) = 74
Developed Site Density = 14.55 DU/Acres

Total Parking Required = 509
Off-Street Parking (Garage) = 452 Spaces
(At 2 Spaces/2+ Bed Room Dwelling Unit)
Required Guest Parking = 57 Spaces
(At 0.25 Spaces Per Dwelling Unit)

Total Parking Provided = 510
Off-Street Parking (Garage) = 452
On-Street Guest Parking = 59
Van Accessible ADA Stalls = 3

NOTE:

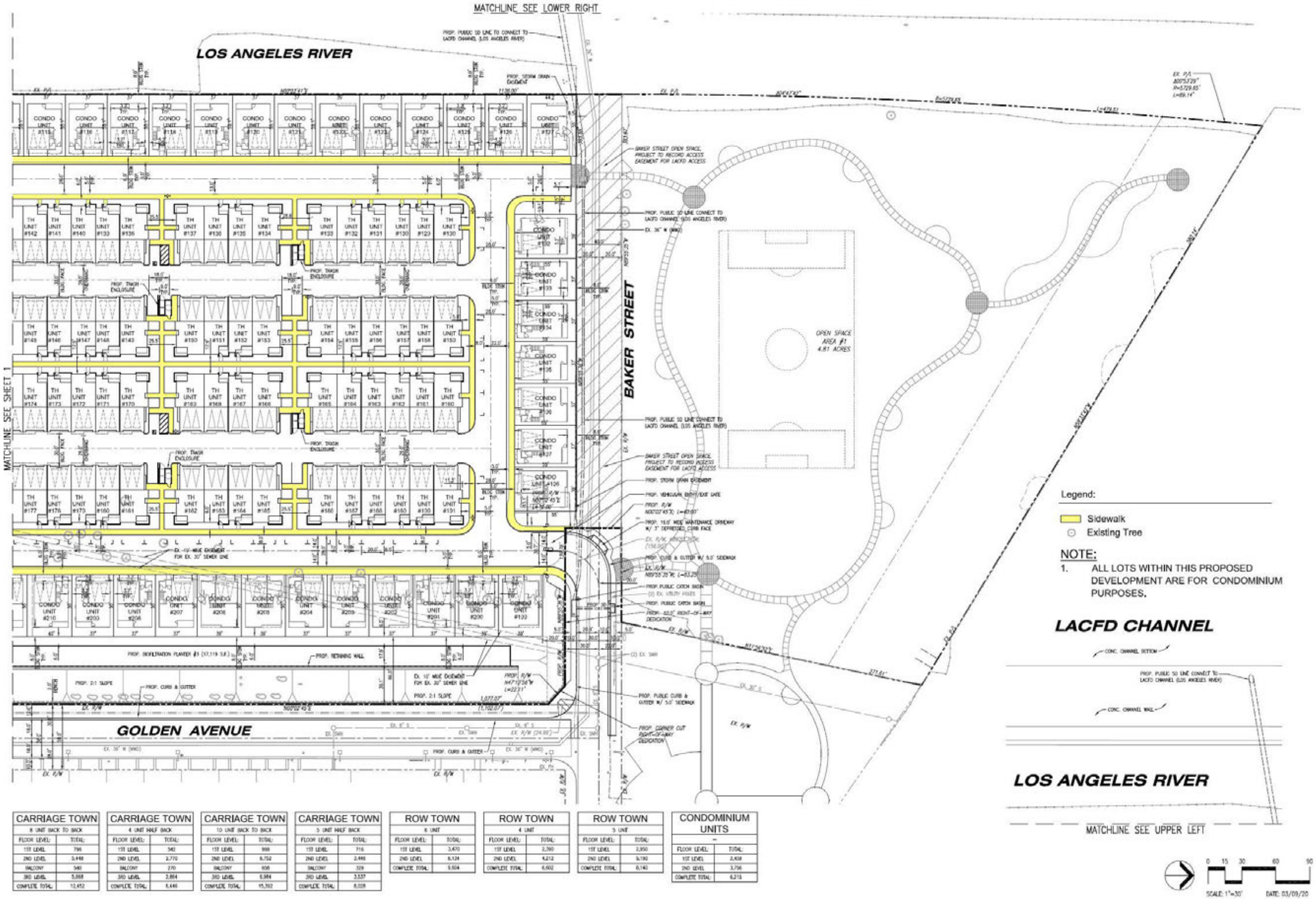
1. ALL LOTS WITHIN THIS PROPOSED DEVELOPMENT ARE FOR CONDOMINIUM PURPOSES.

0 15 30 60 90
SCALE: 1"=30' DATE: 03/09/20

Figure 1

Site plan originally created by project team architect and provided to Fehr & Peers

River Park Site Plan



CARRIAGE TOWN	
8 UNIT BACK TO BACK	
FLOOR LEVEL:	TOTAL:
1ST LEVEL	796
2ND LEVEL	3,448
BALCONY	540
3RD LEVEL	5,668
COMPLETE TOTAL:	12,452

CARRIAGE TOWN	
4 UNIT HALF BACK	
FLOOR LEVEL:	TOTAL:
1ST LEVEL	543
2ND LEVEL	2,770
BALCONY	270
3RD LEVEL	2,864
COMPLETE TOTAL:	6,446

CARRIAGE TOWN	
10 UNIT BACK TO BACK	
FLOOR LEVEL:	TOTAL:
1ST LEVEL	998
2ND LEVEL	6,752
BALCONY	608
3RD LEVEL	6,984
COMPLETE TOTAL:	15,392

CARRIAGE TOWN	
5 UNIT HALF BACK	
FLOOR LEVEL:	TOTAL:
1ST LEVEL	716
2ND LEVEL	2,446
BALCONY	329
3RD LEVEL	3,537
COMPLETE TOTAL:	8,028

ROW TOWN	
6 UNIT	
FLOOR LEVEL:	TOTAL:
1ST LEVEL	3,470
2ND LEVEL	6,124
COMPLETE TOTAL:	9,594

ROW TOWN	
4 UNIT	
FLOOR LEVEL:	TOTAL:
1ST LEVEL	2,390
2ND LEVEL	4,212
COMPLETE TOTAL:	6,602

ROW TOWN	
5 UNIT	
FLOOR LEVEL:	TOTAL:
1ST LEVEL	2,950
2ND LEVEL	5,190
COMPLETE TOTAL:	8,140

CONDOMINIUM UNITS	
-	
FLOOR LEVEL:	TOTAL:
1ST LEVEL	2,459
2ND LEVEL	3,756
COMPLETE TOTAL:	6,215

Figure 1

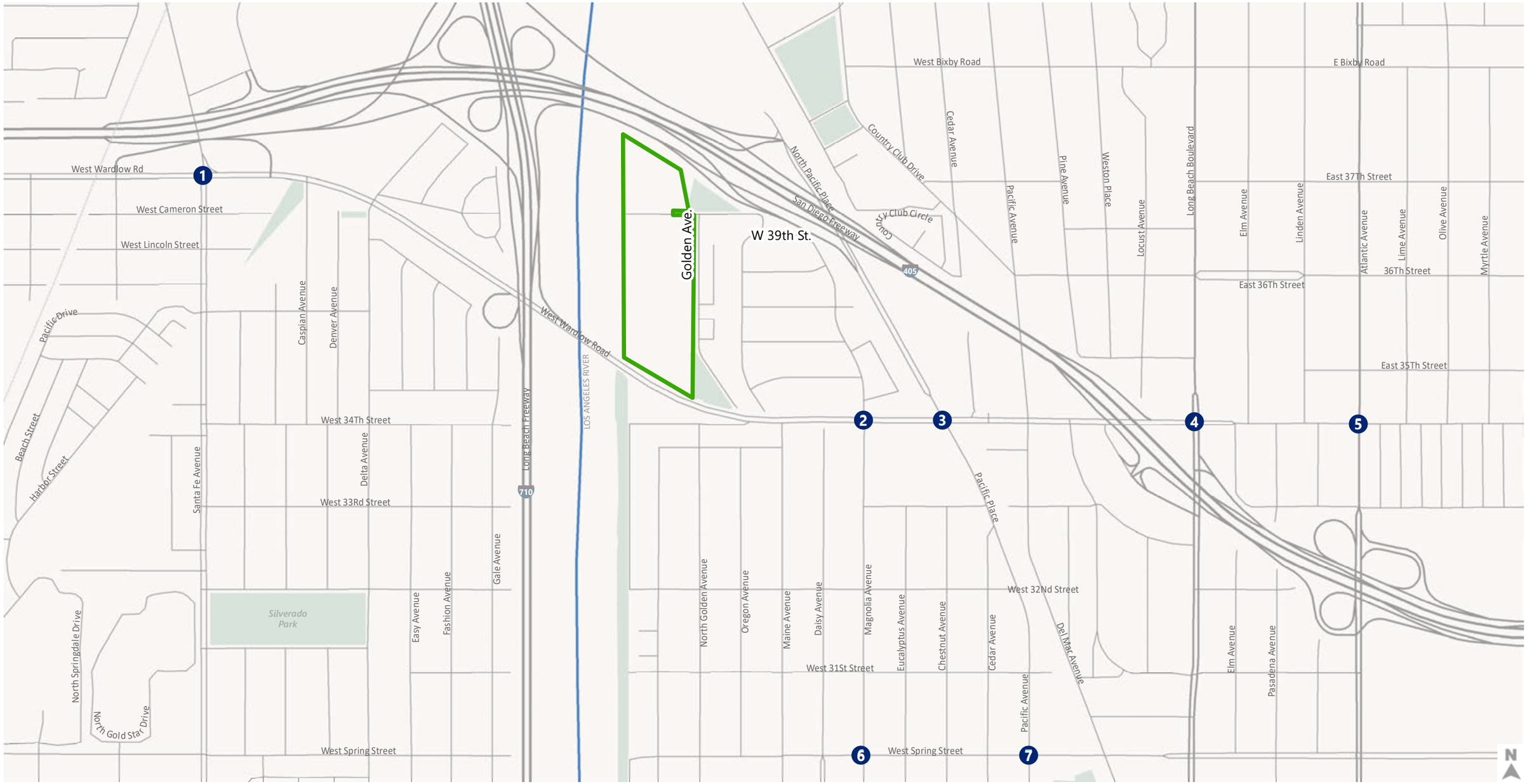
Site plan originally created by project team architect and provided to Fehr & Peers

River Park Site Plan

2.2 Project Location

The Project is located in the Wrigley Heights community, in north Long Beach, and adjacent to the Los Angeles River, and the I-710 and I-405 freeways. The study area and analyzed intersections were determined based on trip generation, trip distribution, and trip assignment estimates developed for the Project. Traffic operations were evaluated, for site access and circulation purposes, at the following seven intersections in the vicinity of the Project site, as shown on **Figure 2**. The study locations were selected in consultation with the City of Long Beach staff (please see **Appendix A** for the TIA Scoping Agreement).

1. Santa Fe Avenue and Wardlow Road (signalized)
2. Magnolia Avenue and Wardlow Road (signalized)
3. Pacific Place and Wardlow Road (signalized)
4. Long Beach Boulevard and Wardlow Road (signalized)
5. Atlantic Avenue and Wardlow Road (signalized)
6. Magnolia Avenue and Spring Street (signalized)
7. Pacific Avenue and Spring Street (signalized)



Project Site

1. Santa Fe Ave. and Wardlow Rd.
2. Magnolia Ave. and Wardlow Rd.
3. Pacific Pl. and Warldlow Rd.
4. Long Beach Blvd. and Warldlow Rd.
5. Atlantic Ave. and Wardlow Rd.
6. Magnolia Ave. and Spring St.
7. Pacific Ave. and Spring St.

Figure 2

River Park Study Locations

3. Environmental Setting

This chapter discusses the environmental setting of the Project, as outlined in the *City of Long Beach Traffic Impact Analysis (TIA) Guidelines*. It includes a description of the existing roadway configuration, as well as public transit, bicycle, and pedestrian facilities in the vicinity of the Project. The chapter also presents baseline traffic volumes at the study locations, as well as a cumulative list of related projects provided by the City.

3.1 Roadway Configuration

The Project site is bounded by I-405 on the north, Golden Avenue on the east, the Los Angeles River on the west and Wardlow Road on the south. Land uses surrounding the Project site include residential, with some commercial. Regional access to the site is provided by Interstate 405 (I-405) and Interstate 710 (I-710). Local access to the site is provided by Wardlow Road. The following discusses the roadways that would provide access to the site and are most likely to experience the potential for traffic operational effects if any, from the proposed Project.

Interstate 405 (I-405) is a major north-south highway that extends for seventy-two miles through Los Angeles and Orange Counties from Irvine to the south and San Fernando to the north. It's also known as the northern portion of the San Diego Freeway. The number of lanes on the I-405 varies between 4 and 5 travel lanes in each direction. The facility serves several major airports, including Los Angeles International Airport (LAX), Long Beach Airport (LGB) and Orange County's John Wayne Airport (SNA). Access to the Project site from I-405 is provided via North Pacific Place.

Interstate 710 (I-710) is a major north-south highway that extends for approximately 23 miles through Los Angeles County from the Port of Long Beach to the south and Alhambra/Pasadena to the north. It's also known as the Los Angeles River Freeway. The number of lanes on the I-710 varies between 3 and 4 travel lanes in each direction. The facility serves a large number of trucks and freight facilities, including the Ports of Los Angeles and Long Beach (or the San Pedro Bay Ports). Access to the Project site from I-710 is provided via Wardlow Road.

Wardlow Road is a four-lane undivided roadway west of Cherry Avenue and a four-lane divided roadway east of Cherry Avenue. Wardlow Road provides east–west connectivity between Cherry Avenue and Walnut Avenue. Wardlow Road also extends to the eastern portion of the Project site, and bisects buildings 1 and 2, and terminates at the LGB airport. However, Wardlow Road continues just east of the Lakewood Boulevard. On-street parking is generally permitted on both sides of the street west of Cherry Avenue, but is not allowed in front of the Project site. The posted speed limit on Wardlow Road is 35 mph west of Cherry Avenue and 30 mph east of Cherry Avenue. In front of the Project site the posted speed limit is 40 mph. Sidewalks are generally provided on both sides of the roadway within the Projects' vicinity. There is no sidewalk fronting the Project on Wardlow Road. A sidewalk is provided on the southern side of Wardlow Road across from the Project. Crosswalks are generally provided at all signalized intersections.

The nearest available crosswalk is located at Magnolia Avenue. The City's Mobility Element designates Wardlow Road as a Major and Minor Avenue.

Protected (Class IV) bicycle lane on Wardlow Road, west of Pacific Place (westbound direction). (Photo Credit: Fehr & Peers, September 2020.)

Magnolia Avenue is a two-lane, north/south running avenue, with a shared left-turn center median. Magnolia Avenue, which provides on-street parking south of Wardlow Road, connects to the Wrigley Heights neighborhood north of Wardlow Road. The posted speed limit along Magnolia Avenue, south of Wardlow Road, is 35 mph. The adjacent land use of this section of Magnolia Avenue is primarily residential. The City's Mobility Element designates Magnolia Avenue as a Neighborhood Connector and Minor Avenue.

Magnolia Avenue southbound at Wardlow Road. (Photo Credit: Fehr & Peers, September 2020 and March 2021.)

Pacific Place/Pacific Avenue is a minor avenue that extends from Spring Street in the South (where it converts to Pacific Avenue) to the I-405/I-710 on-off ramps in the north. Pacific Place/Pacific Avenue is a four-lane roadway that runs parallel with the LA Metro light-rail Blue Line (or A Line). On-street parking is provided along some of the segments, with a posted speed limit is 40 mph. At Wardlow Road, Pacific Place runs in a northwest/southeast diagonal direction, with a horizontal roadway curvature as it approaches Spring Street to the south. The City's Mobility Element designates Pacific Place/Pacific Avenue as a Major and Minor Avenue.

LA Metro Wardlow Blue Line/A Line station on east Pacific Place, north of Wardlow Road (Photo Credit: Fehr & Peers, March 2021).

Spring Street is a neighborhood connector west of Pacific Avenue, a minor avenue between Pacific Avenue and Long Beach Boulevard, and a major avenue east of Long Beach Boulevard. Between Long Beach Boulevard and Pacific Avenue there is an at-grade rail crossing for the LA Metro Blue Line/A Line with gates that stop traffic along Spring Street. The City's Mobility Element designates Spring Street as a Neighborhood Connector and Minor Avenue.

Spring Street westbound at the LA Metro Blue Line/A Line rail crossing (Photo Credit: Fehr & Peers, September, 2020).

Long Beach Boulevard is a Regional Truck Route that runs adjacent to the I-710 corridor from Downtown Long Beach in the south to the 91 and 105 freeways in the north. There are on/off ramps for the I-405 freeway at Long Beach Boulevard & Wardlow Road. Long Beach Boulevard is primarily a four-lane Boulevard, that opens up to a six-lane roadway for a short section south and north of Wardlow Road. The City's Mobility Element designates Long Beach Boulevard as a Boulevard.

Atlantic Avenue is a four-lane Boulevard that extends from Downtown Long Beach in the south to the 91 and 105 freeways in the north. There are on/off ramps for the I-405 freeway on Atlantic Avenue, south of Wardlow Road. The adjacent land uses along Atlantic Avenue in the study area is primarily commercial. The City's Mobility Element designates Atlantic Avenue as a Major Avenue.

3.2 Existing Public Transit, Bicycle Facilities, and Pedestrian Facilities

Public Transit Facilities

The existing transit services in the vicinity of the Project Site are described below.

Bus Transit

Long Beach Transit (LBT) and LA Metro provide public transit services in the vicinity of the proposed Project site. Although Wardlow Road is classified as a Secondary Transit Route, there are no stops or routes fronting the Project site. The nearest bus stop could be found east of the Project site at southeast Magnolia Avenue & Wardlow Road, where LBT Route 181 operates.

Near the proposed Project, at the Wardlow Metro Station on Pacific Place, is the Wardlow Station Bay 3. Bus Routes 181 and 182 operate at this Bay. **Figure 3** illustrates the transit routes of LBT and LA Metro within the vicinity of the proposed Project site.

LBT Bus Stop at Wardlow Road & Magnolia Avenue, east of the Project Site (Photo Credit: Fehr & Peers, March 2021).

Long Beach Transit (LBT) bus routes that serve routes in the vicinity of Project site include the following:

- Route 192: This route operates daily via Santa Fe Avenue
- Route 131: This route operates daily along Wardlow Road, east of Pacific Place
- Route 181: This route operates daily via Magnolia Avenue

Los Angeles (LA) Metro provides bus and rail service in the vicinity of the Project Site. LA Metro bus routes 60 and 2020, as well as the LA Metro Blue/A Rail line. LA Metro Rail provides a connection between Downtown Long Beach and Downtown Los Angeles. The Wardlow Blue line/A line station is approximately 0.5-mile east of the Project site at Pacific Place & Wardlow Road. There are 16 enclosed bike lockers available for rent at the station.

Enclosed Bicycle Parking at Wardlow Station (Photo Credit: Fehr & Peers, March 2021).

Figure 3 shows the LBT and LA Metro transit routes in operation within the vicinity of the Project Site.

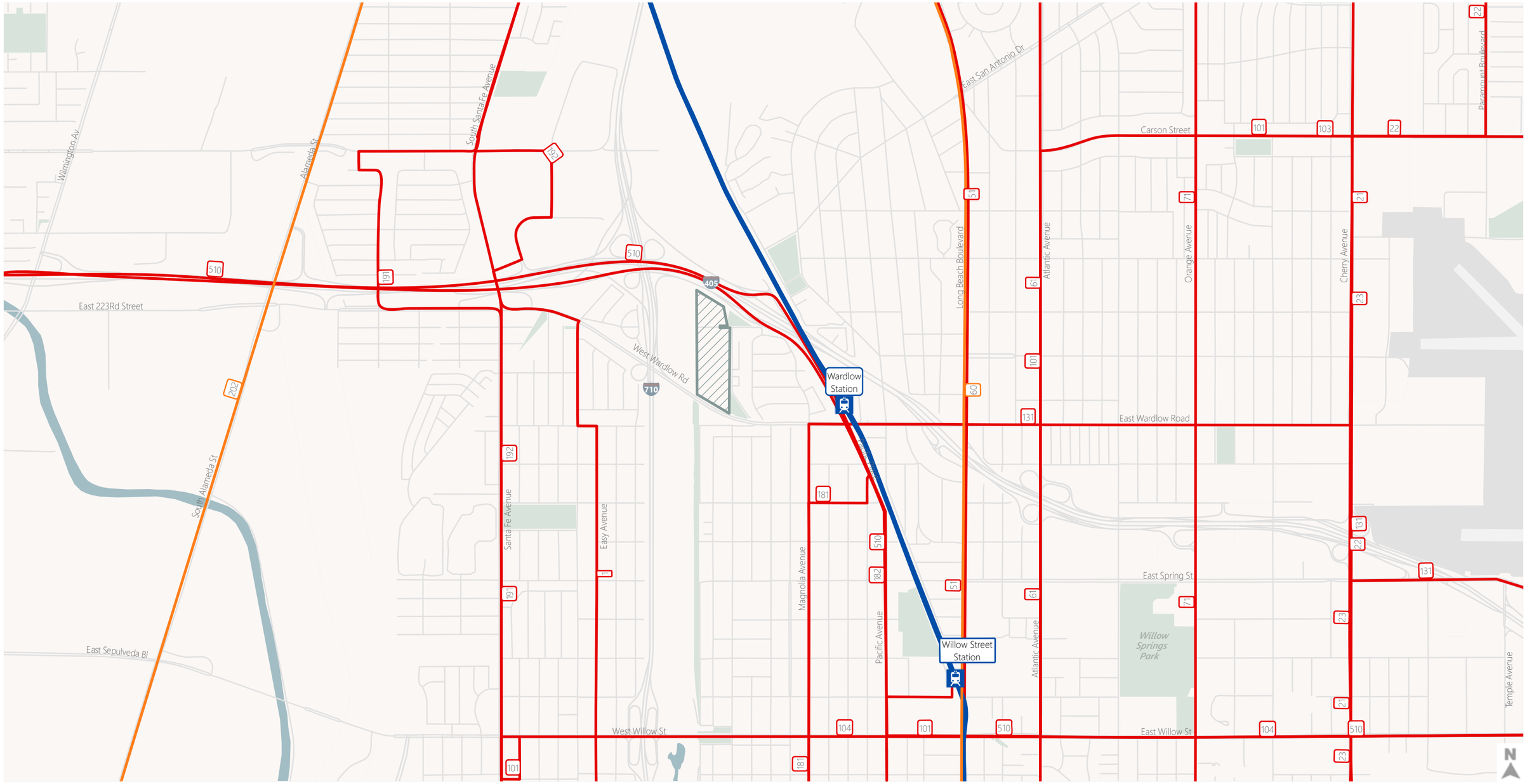


Figure 3

River Park Existing Transit

Bicycle Facilities

The City has an extensive network of bicycle facilities consisting of 15 miles of bike routes, 19 miles of bike lanes, and 29 miles of bike paths. The City also has priority "8-to-80" bike facilities. Per the City's 2040 Bicycle Master plan, these bikeways are designed so that anyone between the ages of 8 and 80 years of age can ride in the facility safely and comfortably. In addition to the on-street bicycle network, the City of Long Beach has over 60 miles of off-street bike and pedestrian paths within its boundaries. In total, the city has approximately 156 miles of bikeways.

Bicycle facilities in the City of Long Beach are classified as follows:

Class I Bikeways (Bike Paths)

Class I bicycle facilities are bicycle trails or paths that are off-street and separated from automobiles. They are a minimum of eight feet in width for two-way travel and include bike lane signage and designated street crossings where needed. A Class I Bike Path may parallel a roadway (within the parkway) or may be a separate right-of-way that meanders through a neighborhood or along a flood control channel or utility right-of-way.

Class II Bikeways (Bike Lanes)

Class II bicycle facilities are striped lanes that provide bike travel and can be either located next to a curb or parking lane. If located next to a curb, a minimum width of five feet is recommended. However, a bike lane adjacent to a parking lane can be four feet in width. Bike lanes are exclusively for the use of bicycles and include bike lane signage, special lane lines, and pavement markings.

Class III (Bike Routes)

Class III Bikeways are streets providing for shared use by motor vehicles and bicyclists. While bicyclists have no exclusive use or priority, signage both by the side of the street and stenciled on the roadway surface alerts motorists to bicyclists sharing the roadway space and denotes that the street is an official bike route.

Class IV Bikeways (Cycle Tracks)

Class IV bicycle facilities, sometimes called cycle tracks or separated bikeways, provide a right-of-way designated exclusively for bicycle travel adjacent to a roadway and are protected from vehicular traffic via separations (e.g. grade separation, flexible posts, inflexible physical barriers, on-street parking). California Assembly Bill 1193 (AB 1193) legalized and established design standards for Class IV bikeways in 2015.

Figure 4 shows the City of Long Beach's existing and proposed bikeway network. There currently exists Class IV protected bike lane facilities along Wardlow Road, in both directions, east of the Project Site. The bike lane on the south side of Wardlow Road, in the eastbound direction, begins east of the Project's main

driveway -east of 34th Street and continues east past Wardlow Road. The bike lane on the north side of Wardlow Road, in the westbound direction, begins east of Pacific Place and ends at Magnolia Avenue. There is currently a Class I bike path that runs parallel to the LA River and the Project site. Within the study area, Class II bikeways are planned along Wardlow Road, fronting the Project Site, per the City's Bike Master Plan. Other bike facilities are planned for Magnolia Avenue, but the type of classification is still too be determined. (*City of Long Beach Mobility Element, October 2013*).

Protected (Class IV) bicycle lane on Wardlow Road, west of Pacific Place (westbound direction) (Photo Credit: Fehr & Peers, September 2020).

Bike Share Program

The City of Long Beach launched the "Long Beach Bike Share Program" in March 2016 as part of its effort to enhance mobility options and bicycle infrastructure. The bike share program includes approximately 472 bikes and 82 stations. The nearest station is located approximately one-half mile east of the Project on Wardlow Road, at Pacific Avenue. There are two additional bike share stations located approximately one mile east of the Project site on Bixby Road and on Atlantic Avenue.

Long Beach Bike Share Station on Wardlow Road, east of the Wardlow Metro Station at Pacific Avenue (Photo Credit: Fehr & Peers, March 2021).

Users have the option of renting the bike on an hourly basis for $7.00 or purchasing either of the following plans – a membership monthly plan for $15 which includes 90 minutes of daily use time or an annual plan for $120 which includes 90 minutes of daily use. Up to six persons can share one membership account. Prospective users can assess availability of bicycles at a station via a mobile phone app. Within the vicinity of the Project, stations are located at the following intersections:

- Wardlow Road & Pacific Avenue
- Bixby Road & Long Beach Boulevard
- Atlantic Avenue & Carson Street

Pedestrian Facilities

The City of Long Beach has goals, policies, and implementation measures designed to create a system of complete streets that support and encourage all mobility users, regardless of age or ability including pedestrians, bicyclists and transit riders. Pedestrian facilities in the study area include sidewalks, crosswalks, and pedestrian signals. The major streets that provide access to the Project include Wardlow Road, Magnolia Avenue, and Baker Street. These roadways have well-connected and maintained sidewalk networks near the Project Site. Sidewalks are provided on both sides of these streets, except for portions of Wardlow Road (between Magnolia Avenue and the Project site). Although, this section does have an adjacent local access road with sidewalk that is separated by a concrete, landscaped median, as well as a sidewalk on the south side of Wardlow Road between Maine Avenue and the Project Site. At the signalized intersections in the area, crosswalks and pedestrian push-button actuated signals are provided.

The Project is located immediately east of the LA River, which provides an eastern walking path and hiking trail adjacent to the river itself. These facilities provide pedestrian access to local greenspace amenities (for example, the Dominguez Gap Wetlands located approximately one-half mile north of the Project). There are no walking trails on the western side of the LA River, which is parallel to the 710 freeway. The closest existing pedestrian entrance to the LA River Trail (via Wrigley Greenbelt) is situated at the northwestern corner of De Forest Avenue and West 34th Street, located south of the Project and Wardlow Road. Pedestrians departing from the Project must walk approximately 0.7 miles to reach the Wrigley Greenbelt entrance, crossing at Magnolia Avenue (east of the Project and the LA River).

LA River Access Point/Wrigley Greenbelt, south of Wardlow Road and the Project Site (Photo Credit: Fehr & Peers, March 2021).

Other pedestrian access points within approximately a mile of the Project site include: the Del Mar Avenue & North Virginia Avenue entrance (north of the Project and the 405 freeway) and the De Forest Avenue and 26th Way entrance (south of the Project, immediately north of Willow Street). Within the Project site, there is an informal path along Baker Street that provides direct access to the LA River walking path. There is an additional informal path on the Project site connecting the north Wardlow bridge sidewalk to a path that parallels the LA River Trail.

There also currently exists a public dog park on the north side of Wardlow Road, adjacent to the Project Site. The Wrigley Heights dog park, located at 3401 Golden Avenue, is approximately two acres in size and can be accessed via Golden Avenue. Existing mulch makes up the surface material, while the perimeter and division of the site is identified by painted chain link fencing. The park is separated by Wardlow Road by an enclosed chain link fence. There is no existing sidewalk on the north side of Wardlow Road at this location. The dog park is accessed via the Golden Avenue south parking driveway, which parallels Wardlow Road. Additionally, a second gated pedestrian access point is provided to the north, along Golden Avenue -approximately at the mid-point of the dog park. There are no existing sidewalks along Golden Avenue that connect the two separate dog park entrances. The existing neighborhood Baker Street park at Baker Street & Golden Avenue is located east of the Project, adjacent to the proposed open space portion of the Project.

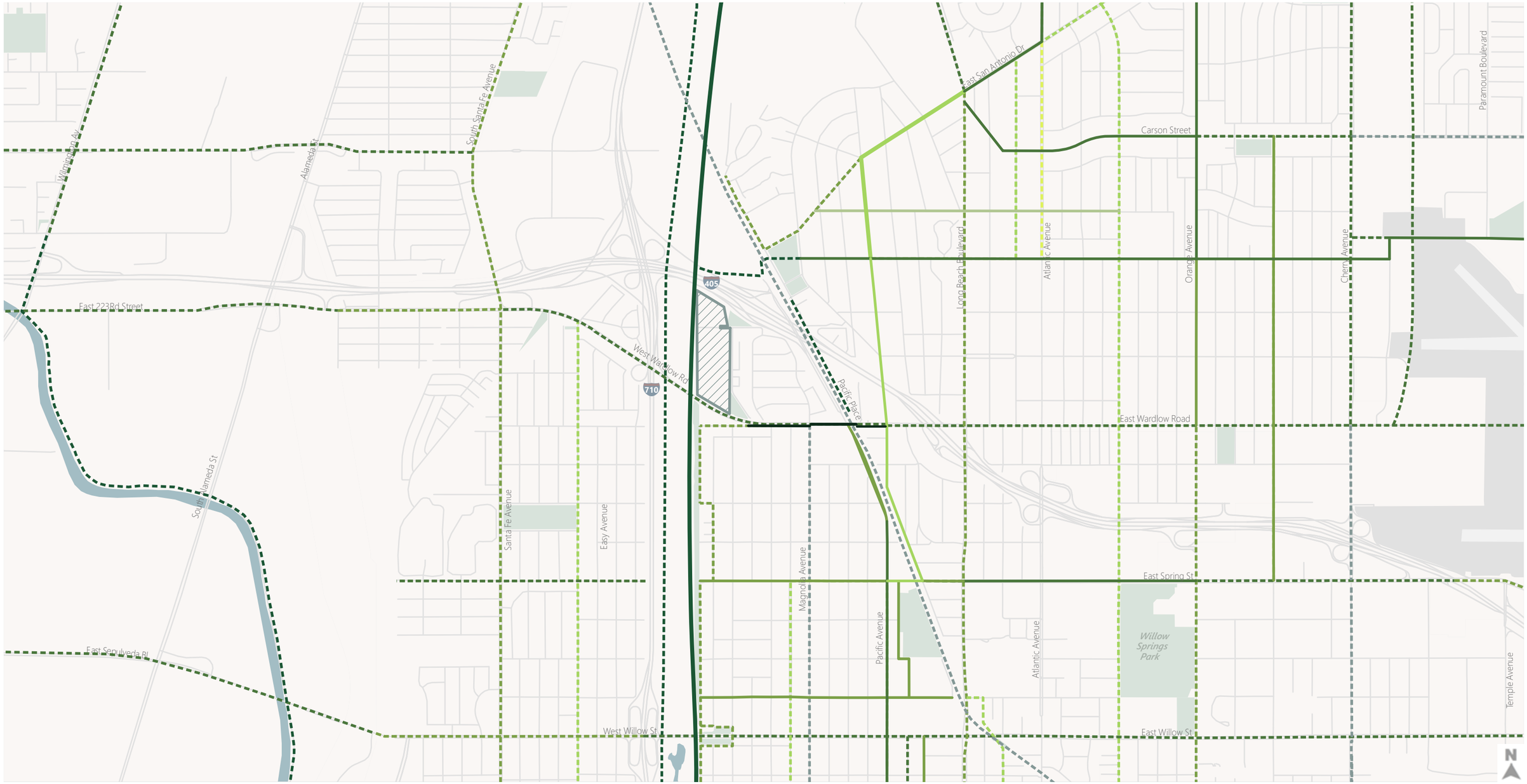


Figure 4

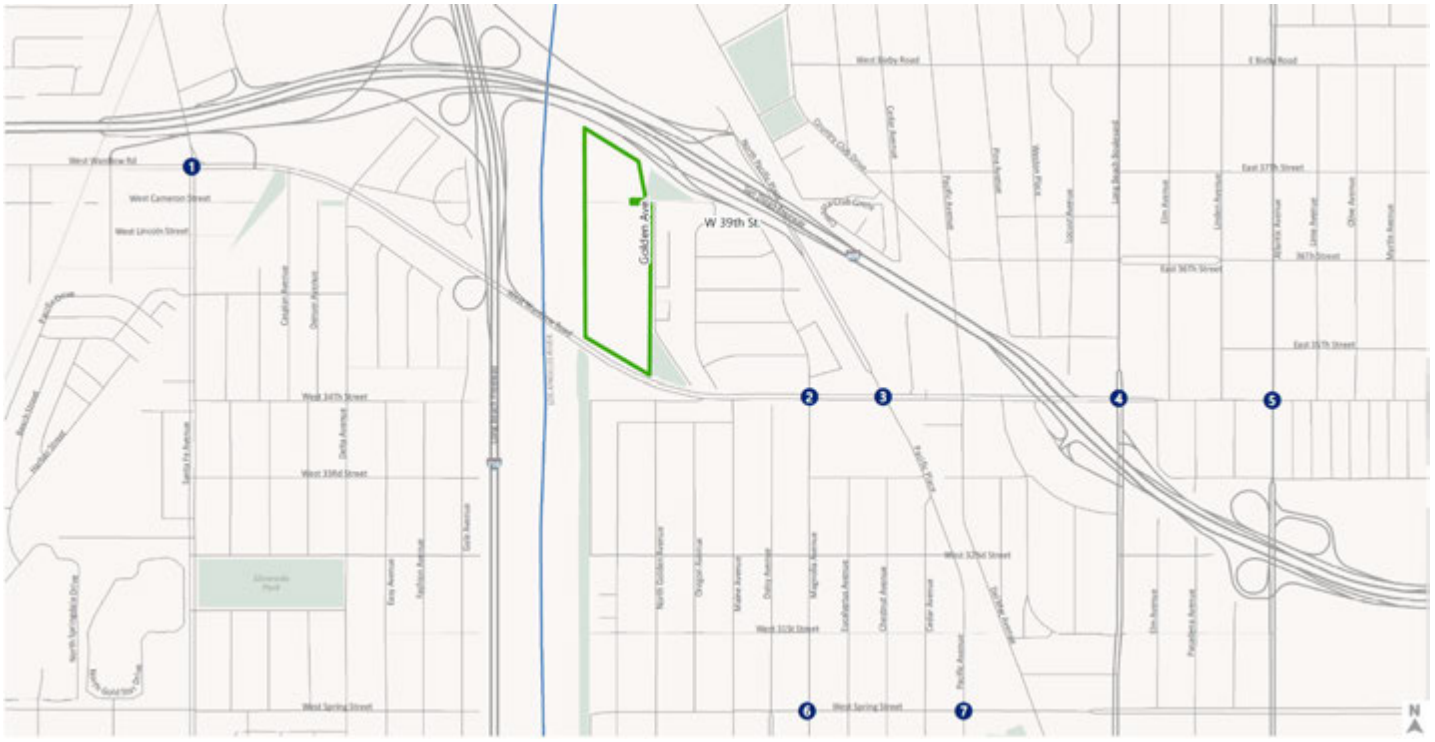
River Park Existing & Proposed Bicycle Facilities

3.6 Baseline Traffic Volumes

Per the City's TIA guidelines, the most recent available traffic conditions and physical geometry are used to determine existing conditions. Due to the COVID-19 pandemic occurring during the time of this study, a combination of existing and historical traffic count volumes were used to evaluate baseline traffic conditions at the study intersections, in consultation with the City. Turning movement intersection counts for the AM and PM peak periods were collected at the 7 study intersections as follows:

- Intersection #1 – Santa Fe Avenue & Wardlow Road on May 23, 2018
- Intersection #2 – Magnolia Avenue & Wardlow Road on September 23, 2020
- Intersection #3 – Pacific Place & Wardlow Road on September 23, 2020
- Intersection #4 – Long Beach Boulevard & Wardlow Road on May 10, 2018
- Intersection #5 – Atlantic Avenue & Wardlow Road on September 23, 2020
- Intersections #6 – Magnolia Avenue & Spring Street on September 23, 2020
- Intersections #7 – Pacific Avenue & Spring Street on September 23, 2020

While the counts conducted in September of 2020 are not representative of typical weekday peak period traffic conditions, it provided a reasonable picture of the relative percentage distribution of turning movement volumes at these locations. The 2020 intersection counts were also adjusted accordingly by applying a growth factor, based on pre-COVID, historical counts taken along Wardlow Road, adjacent to the Project Site – which were collected as part of the traffic signal warrant analysis for the Project driveway. The 2018 counts at intersections #1 and #4 were also factored up to year 2020 using an annual growth factor of 0.4%, per the City's guidelines. Baseline (2020) Conditions peak hour traffic volumes for the study intersections are shown on **Figure 5**. The traffic count sheets are provided in **Appendix B**.



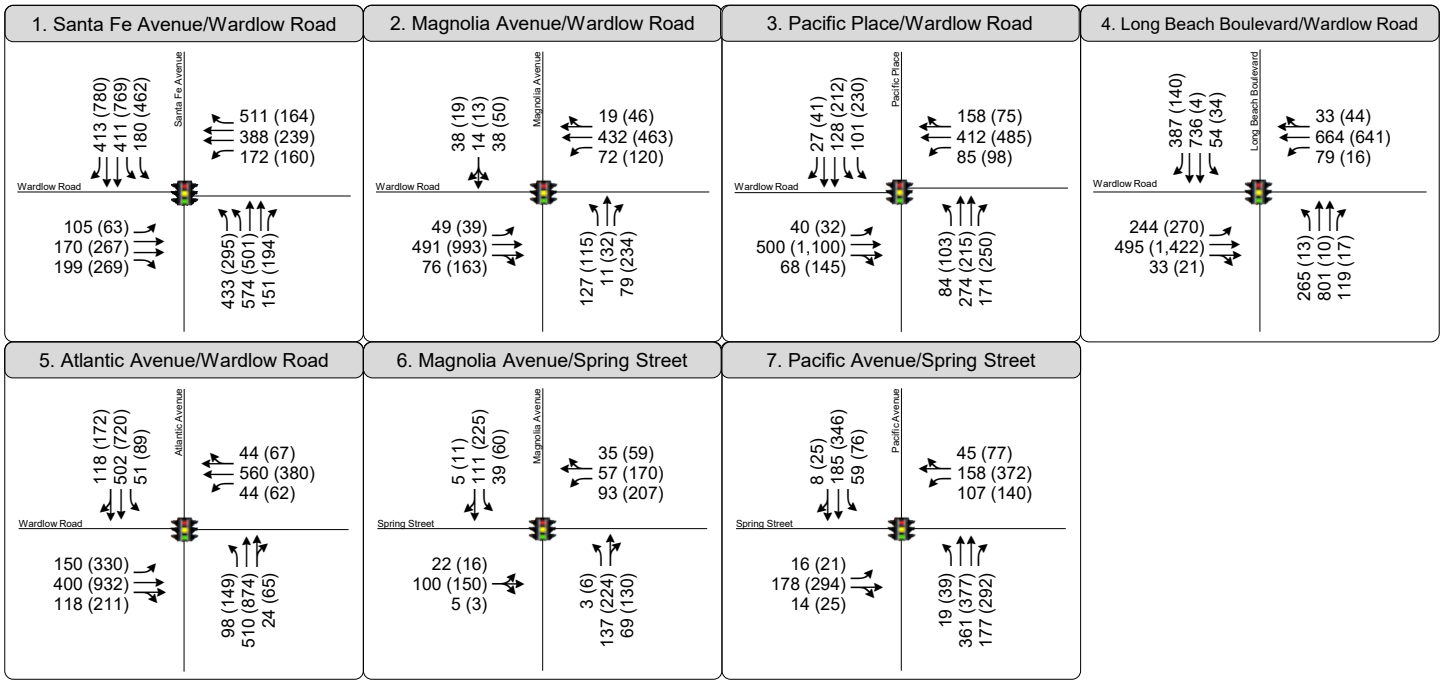


Figure 5

Peak Hour Traffic Volumes and Lane Configurations
Existing Baseline (2020) Conditions

3.7 Cumulative Project List

In coordination with the City two proposed development projects were identified for inclusion in the opening year analysis. A four-story, mixed-use office building is planned for 3435 Long Beach Boulevard, east of the Project. The related project is approximately 35,000 square feet and is expected to generate 341 average daily trips, based on ITE's *Trip Generation 10th Edition*. Additionally, the proposed self-storage and RV storage facility at 3701 Pacific Place, north of the I-405 freeway and former site of the Long Beach Golf Learning Center. This related project will construct a 150,000-gross-square-foot building with 1,100 self-storage units and 580 RV storage spaces on the currently vacant property. Based on the analysis included in the trip generation memorandum[1] it was estimated that the self-storage and RV storage facility project would generate fewer than 50 weekday trips per peak hour; approximately 16 trips in the AM peak hour and 31 trips in the PM peak hour during the weekday. There are no transportation system infrastructure changes in the study area planned for implementation by year 2026 per confirmation by City staff. Therefore, network changes were not included in the analysis.

Per the City's *Mobility Element 2035*, the following capital improvement projects are under consideration by the City in the vicinity of the Project. However, because none of the identified improvements are included in the City's Fiscal Year 2021 Capital Improvement Program, they were not included in the Opening Year (2026) analysis.

1. **The Metro Blue Line (or A Line) Wardlow Station Park and Ride** capital project would develop increased vehicle capacity at the station to encourage ridesharing, transit use, and multimodal connectivity.
2. **Signal improvements along Magnolia Avenue**, including video detection, signal coordination, and wireless communications; from Wardlow Road to Ocean Boulevard.
3. **Long Beach Boulevard/Wardlow Road and the I-405 ramps**. This project includes ramp reconfiguration to improve connections to Long Beach Boulevard and reduce congestion at Pacific Place & Wardlow Road.
4. **Wardlow Road Corridor Improvements**. Design and implement corridor improvements on Wardlow Road between Long Beach Boulevard and Cherry Avenue, including freeway ramp access configuration, sidewalk improvements, and signal system upgrades.
5. **Santa Fe Avenue Streetscape Enhancements**. Design and implement streetscape enhancements on Santa Fe Avenue from Pacific Coast Highway to Wardlow Road.

[1] http://www.longbeach.gov/globalassets/lbds/media-library/documents/planning/environmental/environmental-reports/pending/pacific-place-project-3701-pacific-place/appendix_i1_-_trip_generation_analysis

3.8 Existing Roadway Safety Conditions

Using data collected from the Statewide Integrated Traffic Records System (SWITRS) and the UC Berkeley Transportation Injury Mapping System (TIMS), a collision history analysis was conducted for the study intersections surrounding the Project. In addition to study intersections, reported collisions that occurred immediately adjacent to the Project were also evaluated. The most recently available five-year collision data were analyzed, from 2014 to 2018 (2019 collision data are still provisional). **Figure 6** indicates the concentration of all reported historical collisions within 100 feet of the study intersections, along with all collisions involving pedestrians and bicyclists by injury type.

Between 2014 and 2018, 97 reported collisions occurred within the study intersections and within the immediate vicinity of the Project site. Of the total number of collisions, six resulted in severe injury (6%) and one resulted in a fatality (1%) (see **Table 1**). Immediately next to the Project site, there was one collision reported on Baker Street. There were no reported collisions on Wardlow Road immediately in front of the Project. The top three primary factors for collisions within the analysis area were: vehicle right of way violations (22%),[2] improper turning (15%)[3] and unsafe speed (14%).[4] The top three types of collisions were: broadside (60%), rear end (13%) and head-on (9%).

In total, between 2014 and 2018, there were 15 collisions that involved people walking or biking within the study intersections or immediately adjacent to the Project. Amongst these collisions, 5 (33%) resulted in serious injury and 1 (6%) resulted in death. The fatal collision, at Atlantic Avenue & East Wardlow Road, involved a pedestrian. Immediately next to the Project on Baker Street, there was one pedestrian-involved collision that resulted in a minor injury.

TABLE 1: TOTAL HISTORICAL COLLISIONS 2014-2018

Collision Type	Total Collisions	Fatal & Severe Injury Collisions	Fatal Collisions
Vehicle Only	82 (85%)	3 (3%)	0 (0%)
Pedestrian-Involved	12 (12%)	3 (3%)	1 (1%)
Bicyclist-Involved	3 (3%)	1 (1%)	0 (0%)
Total	**97 (100%)**	**7 (6%)**	**1 (1%)**

Source: SWITRS TIMS, 2014-2018 Collision Data. All percentages calculated from total collisions (97).

[2] Vehicle right of way violation broadly refers to any party not yielding to the driver's right-of-way or a driver improperly observing their right-of-way.
[3] Improper turning broadly refers to turn violations at intersections and turns off and on roadways, along with improper signaling during lane changes.
[4] Unsafe speed broadly refers to people driving at a speed that is not reasonable given roadway conditions.

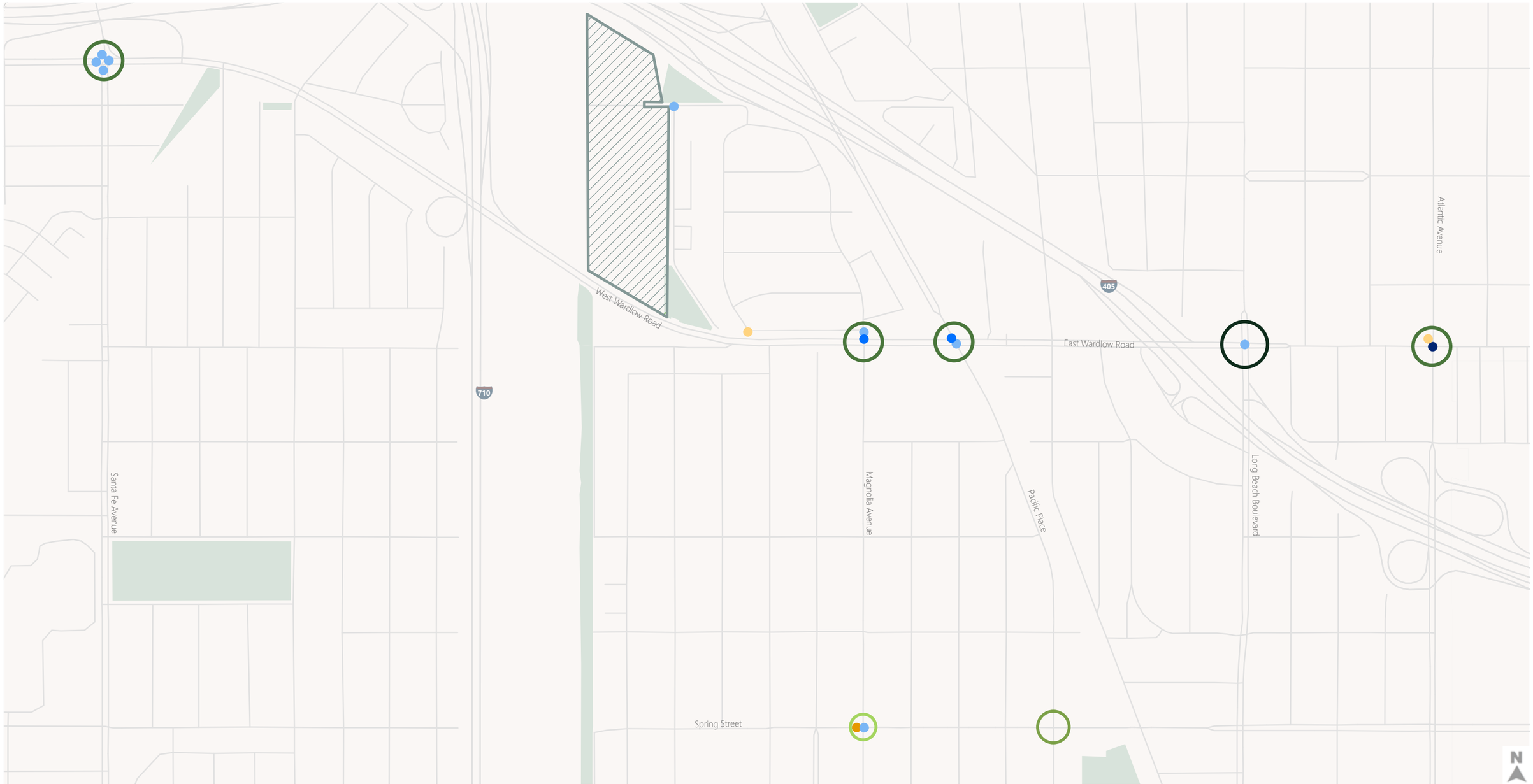


Figure 6

River Park Historical Collisions Near Project Site & Study Intersections

4. Vehicle Miles Traveled (VMT) Analysis

This chapter summarizes the methodology and analysis of the City's TIA criteria using vehicle miles traveled (VMT) as the new CEQA metric for determining a Project's potential for significant impact. The State Office of Planning and Research (OPR) finalized the revisions to the CEQA Guidelines in accordance with Senate Bill (SB) 743, which replaces automobile delay and Level of Service (LOS) with Vehicle Miles Traveled (VMT) as the new metric of analysis. The screening criteria, VMT analysis, thresholds and mitigation presented below are in accordance with the City's TIA guidelines adopted in July, 2020. Both a Project-level and cumulative assessment was performed using the Southern California Association of Governments (SCAG) adopted 2016 RTP/SCS Travel Demand Model.

4.1 Screening Thresholds

The City of Long Beach has reviewed the recommendations and examples in the OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA* and has established several screening thresholds. Land development projects that have one or more of the following attributes may be presumed to create a less than significant impact pursuant to CEQA Guidelines Section 15064.3, subdivision (b).

- Low Trip Generator, i.e., < 500 Average Daily Trips
- Low-VMT Area
- Transit Priority Area (TPA)
- Local-Serving Retail < 50 Thousand Square Feet *(not applicable)*
- 100% Affordable Housing
- Institutional/Government and Public Service Uses that Support Community, Health, Safety, and Welfare *(not applicable)*
- Harbor District *(not applicable)*

4.1.1 Presumption of Less Than Significant Impact for Small Projects

Threshold

The City of Long Beach has historically established a screening threshold of 50 peak-hour trips for requiring a TIA. For most land use types, approximately 10 percent of daily trips occur during the busiest peak hour. For most land use types, approximately 10 percent of daily trips occur during the busiest peak hour. Therefore, per the City's TIA guidelines, a project generating fewer than 50 peak-hour trips would generate approximately 500 average daily trips (ADT).

Analysis

Based on the Project's proposed residential land use and number of dwelling units, a trip generation analysis presented in the subsequent chapter shows that the Project generates greater than 500 ADT. Therefore, the Project cannot be presumed to have a less than significant impact due to project size.

4.1.2 Presumption of Less Than Significant Impact for Residential and Office Projects in Low-VMT Areas

Threshold

The OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA* states that residential and office projects that have similar density, mix of uses, and transit accessibility as surrounding similar uses will likely have similar VMT generation as those uses. Therefore, maps showing VMT-efficient areas can be used to screen residential and office projects from further analysis. **Figure 7** presents a map of residential VMT per capita for all existing Long Beach residential areas. These data were obtained from the 2016 Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) travel demand model. VMT per capita in each area is compared to the regional average VMT per capita for Los Angeles County to identify VMT-efficient areas for future residential development (shown in blue), where average VMT per capita is lower than the County average by 15 percent or more. In these blue areas, projects with similar characteristics to the surrounding development would be presumed to have a less than significant transportation impact. Areas of Long Beach shown in yellow have a VMT per capita between 15 percent below and 15 percent above the County average; therefore, project design features or mitigation may result in a less than significant impact. Red areas indicate that VMT per capita is greater than 15 percent above the County average, indicating that VMT impacts are likely to remain significant.

Analysis

According to **Figure 7**, the Project site is located in a yellow area, which indicates a VMT per capita between 15 percent below and 15 percent above the County average. Therefore, the Project cannot be presumed to have a less than significant impact due to the Project's location being in a low-VMT area.

4.1.3 Presumption of Less Than Significant Impact Near Transit Stations

Threshold

CEQA Guidelines Section 15064.3, Subsection (b), states that "generally, [land use] projects within 0.5-mile of either an existing major transit stop or an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact." Transit priority areas (TPAs) of Long Beach are based

on the California PRC definitions for major transit stops[5] or high-quality transit corridors[6]. The OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA* identifies the following four criteria for which the presumption would not apply. Any project located in a TPA will be presumed to have a less than significant transportation impact related to CEQA Guidelines Section 15064.3, subdivision (b), unless the project:

- Has an overall Floor Area Ratio (FAR) of less than 0.75;
- Includes more parking for use by residents, customers, or employees of the project than required (if parking minimums pertain to the site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the site);
- Is inconsistent with the Long Beach Land Use Element or the SCAG RTP/SCS; or
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

Analysis

According to **Figure 8**, the Project site is located within 0.5-mile of the major transit stop at Wardlow Road & Pacific Place; the LA Metro Blue Line (or "A" Line) Wardlow station. The Project VMT impact would therefore be presumed insignificant, and no further analysis would be required according to the City's TIA guidelines. However, given the secondary conditions listed above, the Project includes more parking for use by residents and visitors than required (by 5 parking spaces). As a result, the Project cannot be presumed to have a less than significant impact due to the Project's proximity to a major transit station.

4.1.4 Screening and Thresholds for Other Land Uses

Threshold

The following identifies screening criteria and thresholds of significance used to determine if other types of land uses would result in significant impacts related to VMT:

- Retail development that is 50,000 square feet (sf) or less is likely to be local-serving and tends to shorten trips within Long Beach. Therefore, any retail project 50,000 sf or less will be presumed to have a less than significant transportation impact;
- Affordable residential development in areas with inadequate affordable housing has the potential to shorten commute distances and/or increase the proportion of residents using transit, which would reduce VMT. Residential projects (or the residential portion of mixed-use projects) with 100

[5] A "major transit stop" is defined as a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods (CA Public Resource Code, § 21064.3).

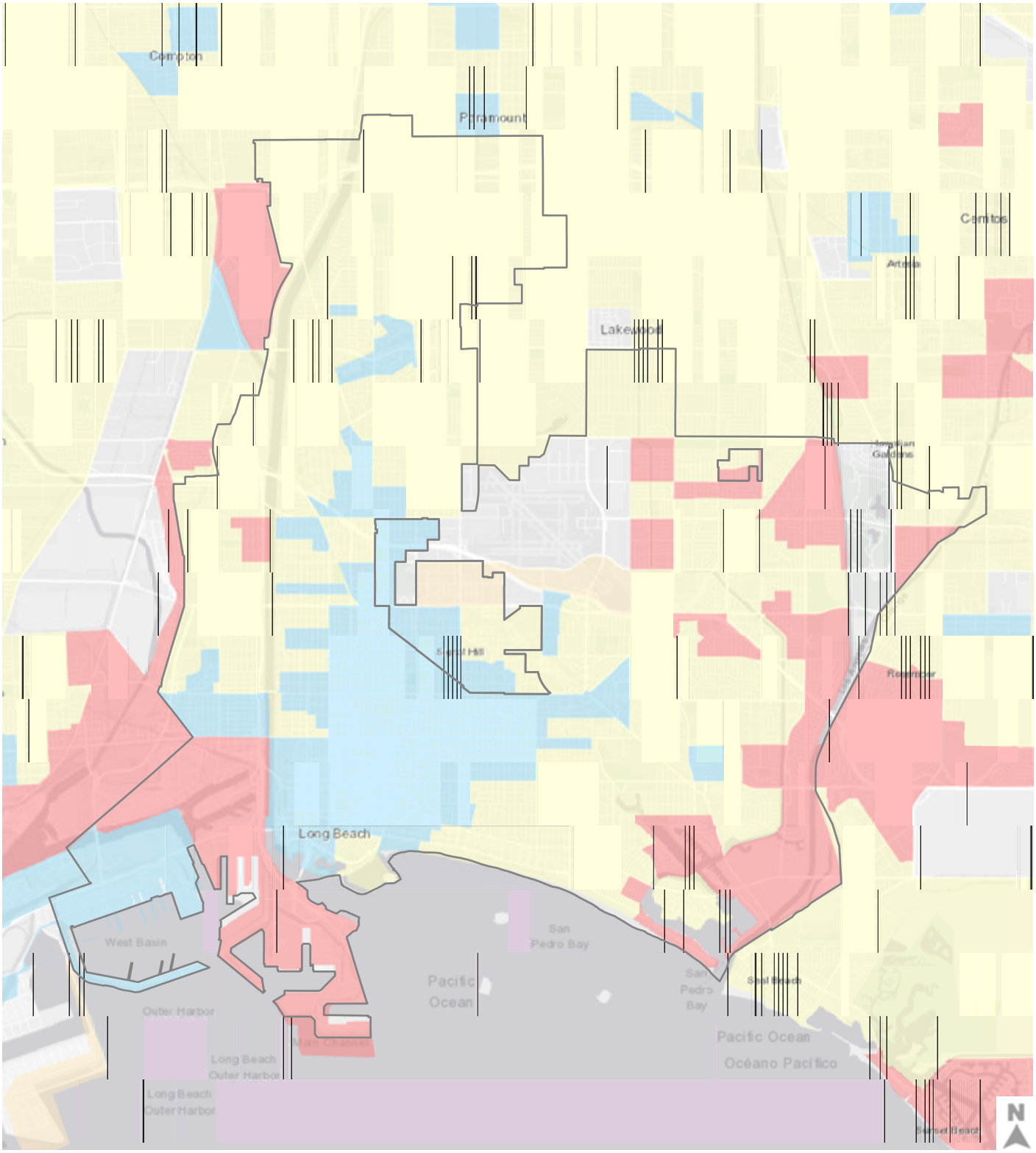
[6] "High-quality transit corridor" (HQTC) means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours (CA Public Resource Code, § 21155).

percent affordable dwelling units will be presumed to have a less than significant transportation impact;

- The development of institutional/government and public service uses that support community health, safety, and welfare will be presumed to have a less than significant transportation impact;
- The Harbor District is an area administered by the Port of Long Beach (Port). The Port has established a permitting process for projects within the Harbor District. Within this area, the Port may also be the lead agency under CEQA where the Port would be ultimately responsible for analysis, review, and approval of land development projects. However, the City remains a responsible agency and will review project analysis for consistency with the procedures outlined in this section. Projects within the Harbor District would not be subject to VMT analysis of truck trips as indicated under CEQA Guidelines §15064.3(a).

Analysis

The Project does not include local-serving retail, or institutional/governmental and public service uses. While the Project does include a portion of affordable housing units, the proposed residential land use does not comprise of 100% affordable housing units. Therefore, the Project cannot be presumed to have a less than significant impact due to the inclusion of other land use types.



No Residents

< -15% below LA County Regional Average

0 to -15% below LA County Regional Average

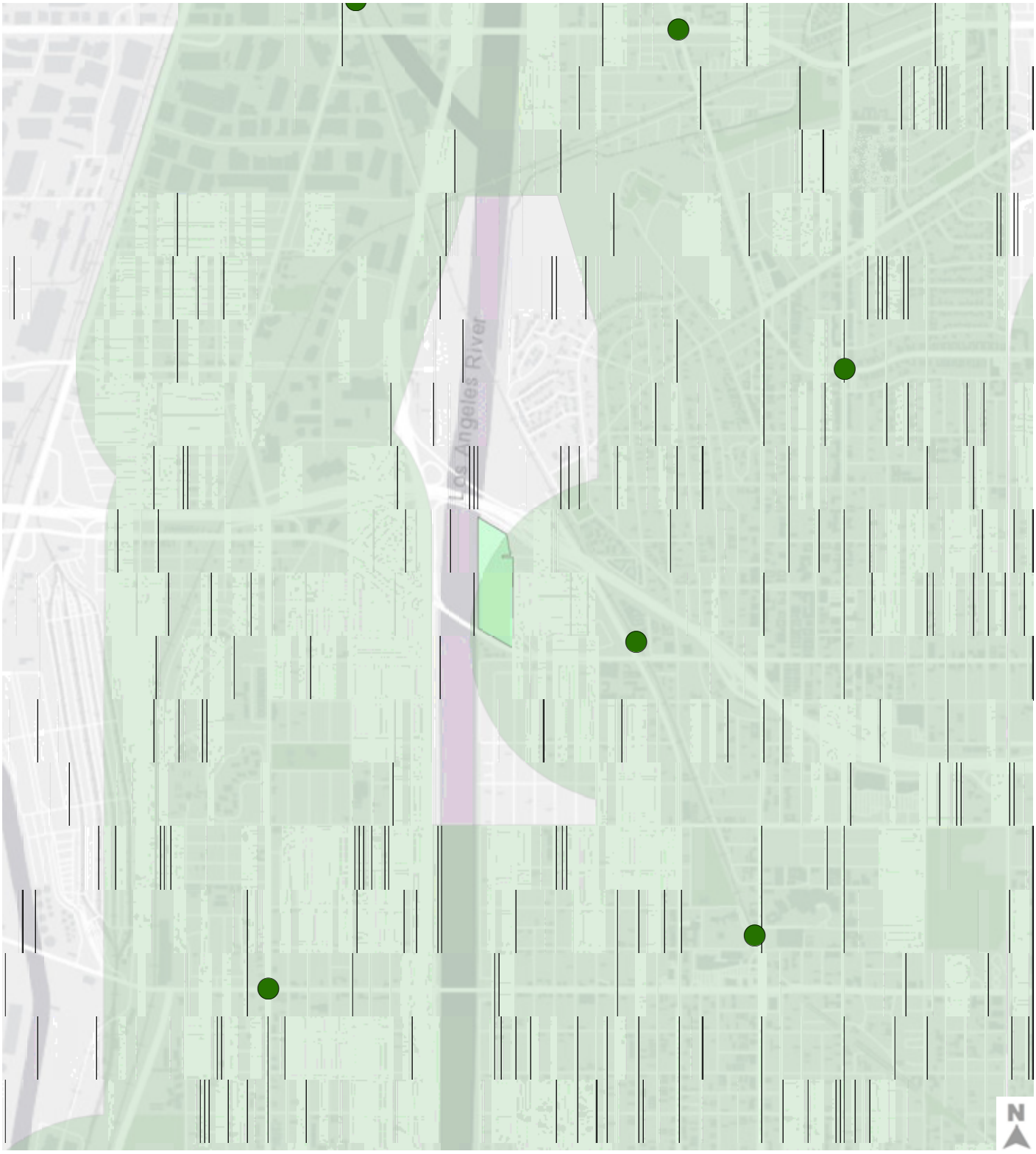
Higher than LA County Regional Average

SCAG Model 2016 RTP, 2012 Base Year, Excludes Truck

Figure 7

Low VMT Area Screening - Residential

Daily Residential Home Based VMT per Capita
Comparison to LA County Regional Average



Major Transit Stop

High Quality Transit Area

Project Site

Figure 8

Transit Priority Area

4.2 Project VMT Impact Analysis

This section includes an evaluation of the Project generated VMT, applying the same methodology outlined in Section 2 of the City's TIA guidelines. The Project VMT impact analysis includes: (1) Determining the appropriate metric and corresponding threshold of significance, (2) Calculating the Project VMT, (3) Determining the impact significance, and, if applicable, (4) Recommend appropriate mitigation measures. For the purposes of SB 743, VMT to be analyzed is generated by on-road passenger vehicles, specifically cars and light-duty trucks.

4.2.1 Determine the Metric and Threshold of Significance

Based on the proposed residential land use of the Project, the metric of analysis will include the following:

- **Residential Uses** – VMT per capita calculated as the total home-based productions VMT divided by the population of the Project.

Table 2 below shows the corresponding threshold of significance for the residential VMT per capita metric. According to the City's TIA guidelines, the VMT threshold of significance for residential uses is *15 percent below the existing regional average VMT per capita*; Or 11.8 VMT per capita. The region for Long Beach is Los Angeles County. As calculated from the 2016 SCAG RTP/SCS travel demand model, the average daily VMT per capita in Los Angeles County is 13.9.

TABLE 2: CITY OF LONG BEACH VMT THRESHOLDS OF SIGNIFICANCE

Metric	Description	VMT Threshold
Residential	**15 percent below the existing regional average VMT per capita** (or 13.9 X 0.85)	**11.8**
Office	15 percent below the existing regional average VMT per employee (or 21.2 X 0.85)	18.0
Retail	No net change in total VMT	Δ VMT = 0
Industrial	No net change in total VMT if consistent with the General Plan Land Use Element; 15 percent below the existing regional average VMT per employee if inconsistent with the General Plan Land Use Element	Δ VMT = 0; otherwise, 18.0
Other Land Uses	No net change in VMT per capita or VMT per employee if consistent with the General Plan Land Use Element; 15 percent below the regional average if seeking a General Plan Amendment	Δ VMT = 0; otherwise, 15% below regional average

Source: City of Long Beach TIA Guidelines, July 2020.

4.2.2 Calculate Project VMT

Based on the City's TIA guidance, a project generating 1,000 ADT or more should use a traffic-forecasting tool, such as the SCAG's 2016 RTP/SCS travel demand model. Such a tool can more appropriately define the select links used and the total VMT generated by the Project. For this study, the SCAG 2016 base year travel demand model was utilized to estimate the residential VMT per capita for the Project.

Project VMT Analysis

The first step for calculating the Project VMT was to update the appropriate traffic analysis zone (TAZ) within the SCAG 2016 base year travel demand model to reflect the Project land use. The travel demand model was then run to estimate home-based productions VMT generated by the Project. After the Project VMT was estimated, the total VMT was then divided by the population of the Project to determine the Project VMT metric; *Residential VMT per capita*. **Table 3** below shows the results of the Project residential VMT per capita.

TABLE 3: PROJECT RESIDENTIAL DAILY VMT PER CAPITA

Metric	Description	Project Daily VMT
Residential VMT per Capita	Home-Based Productions Daily VMT per Resident	**10.2**

Source: *Fehr & Peers, 2021.*

Next, the Project residential VMT per capita was compared to the appropriate significance threshold in Table 2. Since the Project VMT metric (10.2) is less than the significance threshold (11.8), the Project is presumed to create a **less than significant VMT impact** and no further VMT analysis is required.

To convert the Project daily VMT per capita to total annual VMT, an annualization factor was estimated using Caltrans PeMS data from year 2019 (given the pandemic in 2020). Using an annualization factor of 365 would not be appropriate since weekday VMT is typically different than weekend VMT. Based on I-405 freeway ramp data on Wardlow Road at Long Beach Boulevard, an annualization factor of 340 was estimated for the Project -after considering the relative distribution of ramp volumes on weekdays versus weekends in 2019. The total annual VMT per capita for the Project is estimated to be 6,936.

4.2.3 Project VMT Impact Determination

The Project has the following characteristics that make it perform well from a VMT impact analysis perspective:

- The proposed residential land use matches the surrounding land uses of single-family and multifamily housing;
- The Project's proximity to the Wardlow Metro light-rail station;

- The inclusion of affordable housing units; &
- The traffic analysis zone is already a borderline low-VMT area based on the City's VMT mapping.

Given the above finding of less than significant Project VMT impact, the identification of mitigation measures is not required.

4.3 Other CEQA Significance Criteria

In addition to the VMT analysis described above, pursuant to CEQA Guidelines Section 15064.3, subdivision (b), the Project may have a significant impact on transportation if it would:

- Conflict with a plan, ordinance, or policy addressing the circulation system, including transit, roadways, and bicycle and pedestrian facilities;
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Result in inadequate emergency access

4.3.1 Conflict with a Plan, Ordinance, or Policy

The purpose of this section is to determine whether the Project conflicts with a transportation-related City plan, ordinance, or policy that was adopted to protect the environment. A project would not be shown to result in an impact merely based on whether a project would not implement an adopted plan, ordinance or policy. Rather, it is the intention of this threshold test to ensure that proposed development does not conflict with nor preclude the City from implementing adopted plans, ordinances or policies. Furthermore, under CEQA, a project is considered consistent with an applicable plan if it is consistent with the overall intent of the plan and would not preclude the attainment of its primary goals. A project does not need to be in perfect conformity with each and every policy. Finally, any inconsistency with an applicable plan, ordinance or policy is only a significant impact under CEQA if the plan, ordinance, or policy was adopted for the purpose of avoiding or mitigating an environmental effect and if the inconsistency itself would result in a direct physical impact on the environment.

This evaluation was conducted by reviewing City documents such as the Long Beach *Mobility Element 2035*, the Housing Element, Safe Streets Long Beach Action Plan, and municipal code sections.

- **City of Long Beach Mobility Element 2035**[7] is the City's document to guide the operations and design of streets and other public rights of way. It lays out a vision for improving the way people, goods, and resources move from place to place. The Mobility Element addresses all modes of travel, and in addition to improving mobility and accessibility to opportunities, the plan is about enhancing the quality of life for today's generation, as well as generations to come. The Project's proposed land use and operations design features were reviewed and compared to existing and future conditions resulting from the Project, including site access, high injury corridor

[7] City of Long Beach, *Mobility Element 2035, An Element of the General Plan*, adopted October, 2013.

identification, and pedestrian, bicycle, and transit accessibility. The Project is consistent with the reviewed goals and policies of the *Mobility Element 2035*. Please refer to **Appendix D** for a detailed assessment of the transportation related goals in the Mobility Element.

- **Housing Element**[8] provides the City with a roadmap for accommodating the projected number of housing units, identified under the Regional Housing Needs Assessment (RHNA), needed to house existing and future City residents. The Housing Element also helps guide future decisions that impact housing. The plan aims to achieve a number of overarching goals, including increasing housing production, improving access to affordable housing, and promote fair housing choice for all. In the current housing and economic climate, a major focus of the 2021 Housing Element Update is on removing barriers to housing production to counter well-documented housing shortages, as well as addressing homelessness and ensuring the availability and fair distribution of affordable housing throughout the City to reverse existing patterns of segregation and concentrated poverty. The Project is consistent with the reviewed goals and policies of the Housing Element.

- **Safe Streets Long Beach**[9] is a plan that strives to eliminate traffic-related fatalities and serious injuries in Long Beach by 2026 through multiple strategies, such as modifying streets to better serve vulnerable road users. The plan uses data analysis, community input, and best practice research to identify programs and policies that can make the streets safer for everyone. The Project meets the goals and objectives set forth in the Vision Zero plan. The pedestrian points of access will be provided along Wardlow Road and Baker Street, and bicycle parking will be provided on site. The Project is located in the vicinity of the Los Cerritos safe route to school map area[10]. Projects located on the High Injury Corridor (HIC) should make improvements or fund them. The Project is not located on a High Injury Corridor, as identified in the plan. No specific Vision Zero projects are planned for Wardlow Road next to the Project, and the Project will not conflict with the implementation of future Vision Zero projects in the public right-of-way.

The Project features, location, and design generally support multimodal transportation options and would be consistent with policies, plans, and programs that support alternative transportation, including the *Mobility Element 2035*, the *Housing Element* and the *Safe Streets Action Plan*. The Project features are intended to minimize impacts to the public right-of-way and enhance the user experience by integrating multimodal transportation options, including on-site pedestrian infrastructure and trails to the 4.81 acres of dedicated open space north of the developed site area. The Project would encourage bicycle use to and from the Project Site by providing bicycle parking in accordance with the City requirements and in proximity to existing bicycle facilities along Wardlow Road, as well as future planned bicycle facilities within the vicinity of the Project, including along Magnolia Avenue south of Wardlow Road. The Project would encourage pedestrian and bicyclist activity because it concentrates the development near public transit, which provides residences and visitors access to the site that can be conveniently accessed by

[8] City of Long Beach, *2013-2021 Housing Element*, adopted January, 2014.
[9] City of Long Beach, *Safe Streets Action Plan, a Vision Zero Project*, adopted July, 2020.
[10] Tra sport action Mobility Bureau in cooperation with Long Beach Unified School District. Accessed http://www.longbeach.gov/pw/resources/general/school-walking-route/ on 9/22/2020.

walking, biking, or taking transit. The Project would also accommodate pedestrian activity with its access locations and open space, which would be designed to City standards to provide adequate sight distance and pedestrian movement controls that would meet the City's requirements to protect pedestrian safety. The Project design and features would not substantially increase hazards, conflicts, or preclude City action to fulfill or implement projects associated with these networks and will contribute to overall walkability through enhancements to the Project Site and streetscape.

4.3.2 Substantially Increase Hazards Due to a Geometric Design Feature

This section discusses impacts regarding the potential increase of hazards due to a geometric design feature that generally relates to the design of access points to and from the Project Site and may include safety, operational, or capacity impacts.

Pedestrian access to the Project Site would be provided via sidewalks around the perimeter of the Project Site. Residents and visitors arriving to the Project Site by bicycle would have the same access opportunities as pedestrians and would be able to utilize on-site bicycle parking facilities. The Project's access locations would be designed to the City standards and would provide adequate sight distance, sidewalks, crosswalks, and pedestrian movement controls that meet the City's requirements to protect pedestrian safety. Street trees and other potential impediments to adequate driver and pedestrian visibility would be minimal. Pedestrian entrances separated from vehicular driveways would provide access from the adjacent streets.

While there are two driveways proposed as part of the Project, one would be placed on a non-arterial road (Baker Street). The main access driveway would be located on Wardlow Road, with right-in/right-out and left-int movements only. The driveways would be designed to comply with City standards. The driveways would not require the removal or relocation of existing passenger transit stops and would be designed and configured to avoid or minimize potential conflicts with transit services, pedestrians, and bicyclists. The Project is not located on a High Injury Corridor (HIC) due to few collisions having occurred along and immediately adjacent to the Project site. There currently exists protected, Class IV bike lanes along Wardlow Road, in both directions, east of the Project Site. The bike lane on the north block of Wardlow Road (in the westbound direction) ends at Magnolia Avenue, approximately one-quarter mile from the Project main access driveway. Vehicles entering/exiting the Site will be concentrated along the Wardlow Road main Project driveway, and the Baker Street secondary driveway will be limited to City maintenance vehicles and emergency vehicle access.

Traffic Signal Warrant

The main Project access driveway on Wardlow Road was shown to warrant a traffic signal per the Caltrans standards and the California Manual of Uniform Traffic Control Devices (MUTCD) warrant analysis worksheets. A line of sight analysis was also conducted for vehicles exiting the Site onto Wardlow Road using the California Highway Design Manual. A common concern with road geometrics is sight distance. When adequate sight distance to perceive a gap in traffic is not available (due to

horizontal/vertical curvature, or other obstructions), traffic controls can be utilized. In this case, a traffic signal is proposed to assign rights of way.

The line-of-sight analysis indicated that the recommended minimum corner sight distance for vehicles exiting the proposed Project roadway (i.e., looking easterly for oncoming westbound traffic on Wardlow Road) is 382 feet. This minimum distance is not met for either the Number 1 or Number 2 lanes on westbound Wardlow Road. A traffic signal may serve as mitigation for the insufficient line of sight. Heading eastbound on the Wardlow Road bridge, the visibility is open. If the new main Project entrance driveway does become signalized, and if right turn on red is going to be allowed, sight distance is still a consideration. This would be looked at during future phases of signal design if this moves forward, including an assessment of continuous visibility of the signal heads as vehicles approach. If it is determined to be an issue, then the right-out turning movement could of course be prohibited, or mitigated through the removal of fences/obstructions and providing additional advanced warning signage. Furthermore, the limited movements that would be served by this signal helps to mitigate potential conflicts since left turns out are not allowed.

As a result, the Project would not substantially increase hazards or conflicts due to a geometric design feature. Additionally, there are no nearby related projects with access points proposed along the same block(s) as the proposed Project. Accordingly, no significant cumulative impacts are anticipated to which both the Project and other nearby related projects would substantially increase hazards due to a geometric design feature or incompatible use.

4.3.3 Result in Inadequate Emergency Access

The proposed Project site access would not result in inadequate emergency access. All access driveways will be designed according to City standards. As part of this review, the proposed Project site plans were analyzed to identify potential constraints. The Project is situated east of the LA River and south of the I-405 Freeway, immediately adjacent to residential land uses to the south and east. Emergency vehicles can access the Project site at the two Project driveways:

1) Wardlow Road Driveway

Wardlow Road is a major arterial immediately south of the Project, with no on-street parking. The Project driveway is situated at the southeastern corner of the Project site and provides right-turn in and left-turn in access from Wardlow Road. The driveway entrance contains two travel lanes for inbound vehicles, with vehicular entry gates, along with one travel lane for outbound vehicles. At its narrowest point, the driveway is 20 feet wide for both lanes..

2) Baker Street Driveway

Baker Street is a residential street spanning across the northern portion of the Project site, and is currently used intermittently by City maintenance vehicles. The Baker Street driveway is situated at the northeastern corner of the Project site and is accessible via Golden Avenue or Baker Street. The driveway entrance contains one travel lane for each approach and has vehicular entry gates.

At its narrowest point, the driveway lane is 14 feet wide. This driveway would be gated, and only accessible by City maintenance vehicles, as well as emergency vehicles, with the Project.

Within the Project site, the narrowest streets are 26 feet wide, accounting for building overhangs. Not accounting for overhangs, the streets are 30 feet wide. There are 59 designated on-street parking stalls provided for guests, while the remainder of parking is off-street, thus limiting potential conflicts with emergency vehicles.

The Project is close to several emergency service providers, as measured from the proposed Wardlow Road Driveway. The nearest fire station (Long Beach Fire Department Station 9) is located approximately 2.6 miles northeast of the Project on Long Beach Boulevard. The nearest police station (Signal Hill Police Department) is located approximately 3.5 miles southeast of the Project on Walnut Avenue. Long Beach Memorial Medical Center is the closest hospital, which is approximately 2.7 miles southeast of the Project. The Project is well-served by nearby emergency service providers and grants adequate emergency vehicle access to, from, and within the Project site.

5. Traffic Analysis

5.1 Project Trip Generation

This section of the Traffic Impact Analysis (TIA) applies traditional practices of assessing safety, capacity and level of service (LOS) for informational purposes only. It is important to note that with new California Environmental Quality Act (CEQA) Guidelines to include alternative criteria for significant impacts (vehicle miles traveled [VMT]), auto delay is no longer considered a significant impact under CEQA (Id. at subd. (b)(2)). Transportation impacts related to air quality, noise, and safety must still be analyzed under CEQA where appropriate (Id. at subd. (b)(3)). With implementation of the Senate Bill (SB) 743 guidelines, the LOS analysis requirements will not affect the CEQA transportation impacts analysis previously presented and will be fully separate from CEQA.

The development of peak hour vehicular traffic estimates for the Project involves the use of a three-step process: trip generation, trip distribution, and traffic assignment.

Project Trip Generation

The proposed Project includes the development of a residential and open space site plan with the following land uses:

- A total of 226 dwelling units: 53 Carriage Townhouses, 99 Row Townhouses, and 74 Individual Condominium Units. The total site area is 20.34 acres, which includes 15.53 acres of developed area and 4.81 acres of open space.
- A total of 514 parking stalls will provided, including 452 off-street parking (i.e., garage), 59 on-street parking for visitors/guests and 3 van accessible ADA (Americans with Disabilities Act) stalls. Internal circulation would be provided via several newly constructed private streets, along with pedestrian sidewalk infrastructure.

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the local roadway network. For this analysis, trip generation was estimated for typical daily, weekday AM peak and PM peak hours. Trip generation rates from Trip Generation, 10th Edition (Institute of Transportation Engineers [ITE], 2017) were used to estimate the number of peak hour trips associated with the Project and are presented in **Table 4**. The ITE 10th edition introduces and defines the geographic setting for four different settings/locations: Rural, General Urban/Suburban, Dense Multi-Use Urban, and City Core. In many instances, trip generation rates are provided for each land use by geographic setting. The Project is in an area that meets the General Urban/Suburban ITE definitions; therefore, the trip generation rates for General Urban/Suburban were used when available with a sufficient number of survey sites in the ITE database per ITE guidance.

The total number of trips generated by the new development were adjusted to account for transit, given the Project's close proximity (0.5-mile) to the LA Metro Wardlow Blue Line/A Line station. Discussion of this adjustment is summarized below.

Transit/Walk Adjustment

The Project Site is located within walking distance to the Metro Blue Line/A Line station at Wardlow Road & Pacific Place, as well as other local bus routes. Assuming that a percentage of residents and visitors may take transit and walk to the Project, the transit adjustment accounts for trips made to and from the Project Site using modes other than automobiles. These include trips on rail and bus transit, bicycle, and walking.

The specific trip generation rates and adjustments used for each land use type are summarized as follows, in coordination with City staff:

Residential

- Peak Hour – The ITE 10th edition peak hour trip generation rates for General Urban/Suburban were used.
- Transit Adjustment – A transit adjustment of 5% was applied to the peak hour trip generation for the residential use of the Project.

As summarized in **Table 4**, the Project is estimated to generate 1,688 daily vehicle trips, 119 AM peak hour vehicle trips (29 inbound/90 outbound), and 149 PM peak hour vehicle trips (93 inbound/56 outbound). For the purposes of this transportation impact analysis study, these trips will be evaluated to assess network capacity and level of service (LOS) for informational (non-CEQA) purposes only.

TABLE 4: ESTIMATED PROJECT PEAK HOUR TRIP GENERATION

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]						Estimated Trip Generation					
			AM Peak Hour			PM Peak Hour			AM Peak Hour Trips			PM Peak Hour Trips		
			Rate	In%	Out%	Rate	In%	Out%	In	Out	Total	In	Out	Total
PROPOSED PROJECT														
Multifamily Housing (Low-Rise)	220	141 DU	0.46	23%	77%	0.56	63%	37%	15	50	65	50	29	79
Less: Transit Credit [b]			*5%*			*5%*			*(1)*	*(3)*	*(4)*	*(3)*	*(1)*	*(4)*
Net External Vehicle Trips									14	47	61	47	28	75
Single-Family Detached Housing	210	74 DU	0.74	25%	75%	0.99	63%	37%	14	41	55	46	27	73
Less: Transit Credit [b]			*5%*			*5%*			*(1)*	*(2)*	*(3)*	*(2)*	*(1)*	*(3)*
Net External Vehicle Trips									13	39	52	44	26	70
Multifamily Affordable Housing	[c]	11 DU	0.52	38%	62%	0.38	55%	45%	2	4	6	2	2	4
Less: Transit Credit [b]			*5%*			*5%*			*0*	*0*	*0*	*0*	*0*	*0*
Net External Vehicle Trips									2	4	6	2	2	4
Total Project External Vehicle Trips									29	90	119	93	56	149
NET INCREMENTAL EXTERNAL TRIPS									29	90	119	93	56	149

Source: *Fehr & Peers, 2021*.

Notes:

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

[b]. A 5% Transit Credit was used based on the site's proximity to the Metro Blue Line (or A Line) Wardlow Station.

[c]. ITE does not provide trip generation rates for affordable housing units. Locally derived affordable housing trip generation rates were used from LADOT's Transportation Assessment Guidelines, July 2019 - Table 3.3-2.

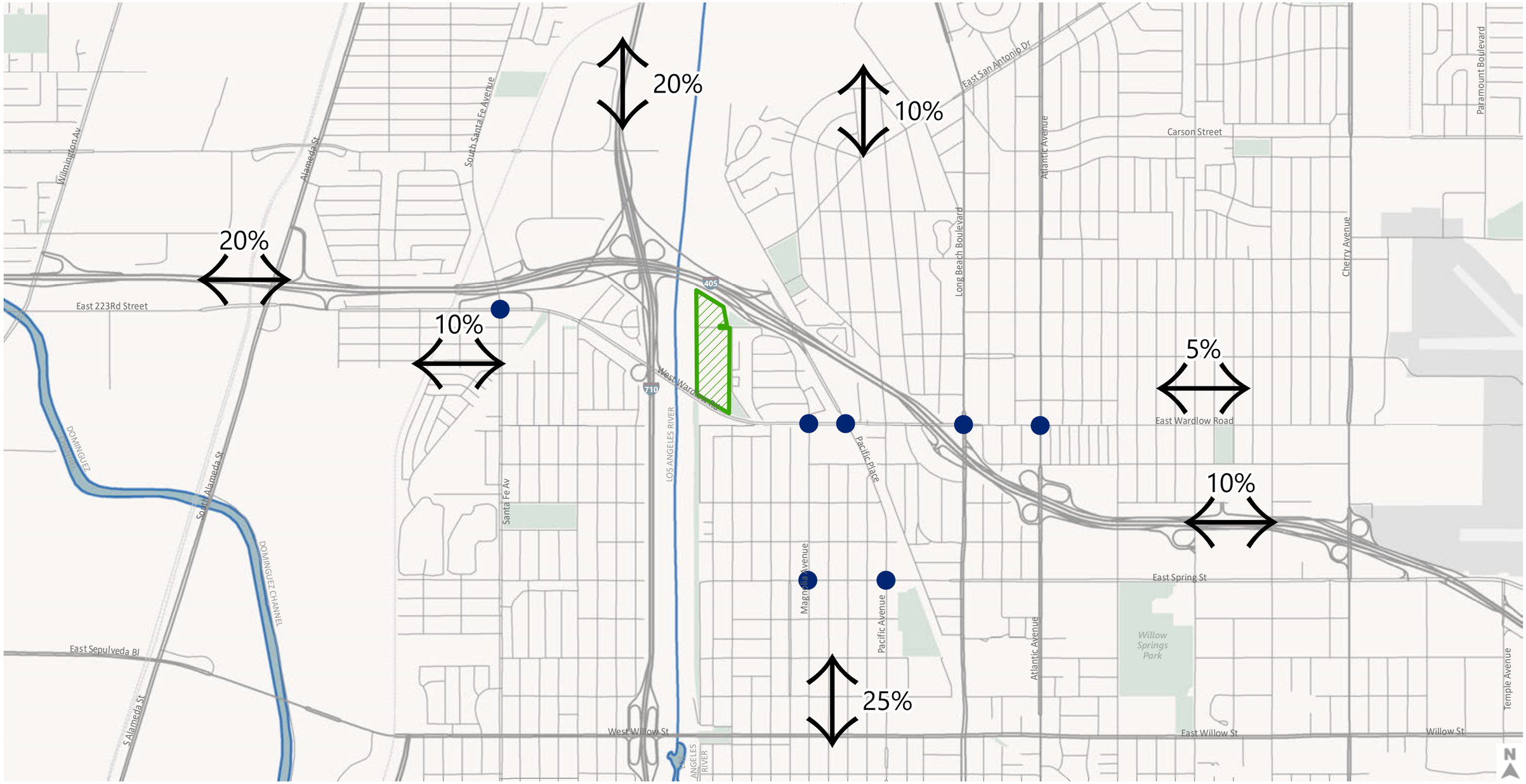
5.2 Project-Generated Trip Distribution and Assignment

Project Traffic Distribution

The geographic distribution of trips generated by the proposed Project is dependent on characteristics of the street system serving the Project Site; the level of accessibility of routes to and from the proposed Project Site; and locations of employment areas for which residents of the housing units would be drawn. A select zone analysis was conducted for the proposed uses using a sub-area travel demand model derived from the SCAG 2016 RTP/SCS model to inform the general distribution pattern for this study. The estimated distribution of Project trips is illustrated in **Figure 9**.

Project Traffic Assignment

The traffic to be generated by the proposed Project was assigned to the street network using the distribution patterns described in Figure 9. The road network assignment of Project traffic volumes took into consideration the locations of the proposed Project driveways on Wardlow Road and Baker Street, which are confined to the Wardlow Road driveway only. The north Baker Street driveway will be gated/closed, and access occasionally by City maintenance vehicles. Additionally, this driveway is designated for emergency vehicle access.



Trip Distribution

Study Intersections

Project Site

Figure 9

River Park Trip Distribution

5.3 Traffic Analysis

5.3.1 Baseline (2020) Conditions

Traffic Volumes and Configurations

Per the City's TIA guidelines, the most recent available traffic conditions and physical geometry are used to determine existing conditions. Given the COVID-19 pandemic, and stay-at-home orders from the County, historical traffic counts were retrieved for several of the study intersections in coordination with the City. Turning movement intersection counts for the AM and PM peak periods were collected at the 7 study intersections as follows:

- Intersection #1 – Santa Fe Avenue & Wardlow Road on May 23, 2018
- Intersection #2 – Magnolia Avenue & Wardlow Road on September 23, 2020
- Intersection #3 – Pacific Place & Wardlow Road on September 23, 2020
- Intersection #4 – Long Beach Boulevard & Wardlow Road on May 10, 2018
- Intersection #5 – Atlantic Avenue & Wardlow Road on September 23, 2020
- Intersections #6 – Magnolia Avenue & Spring Street on September 23, 2020
- Intersections #7 – Pacific Avenue & Spring Street on September 23, 2020

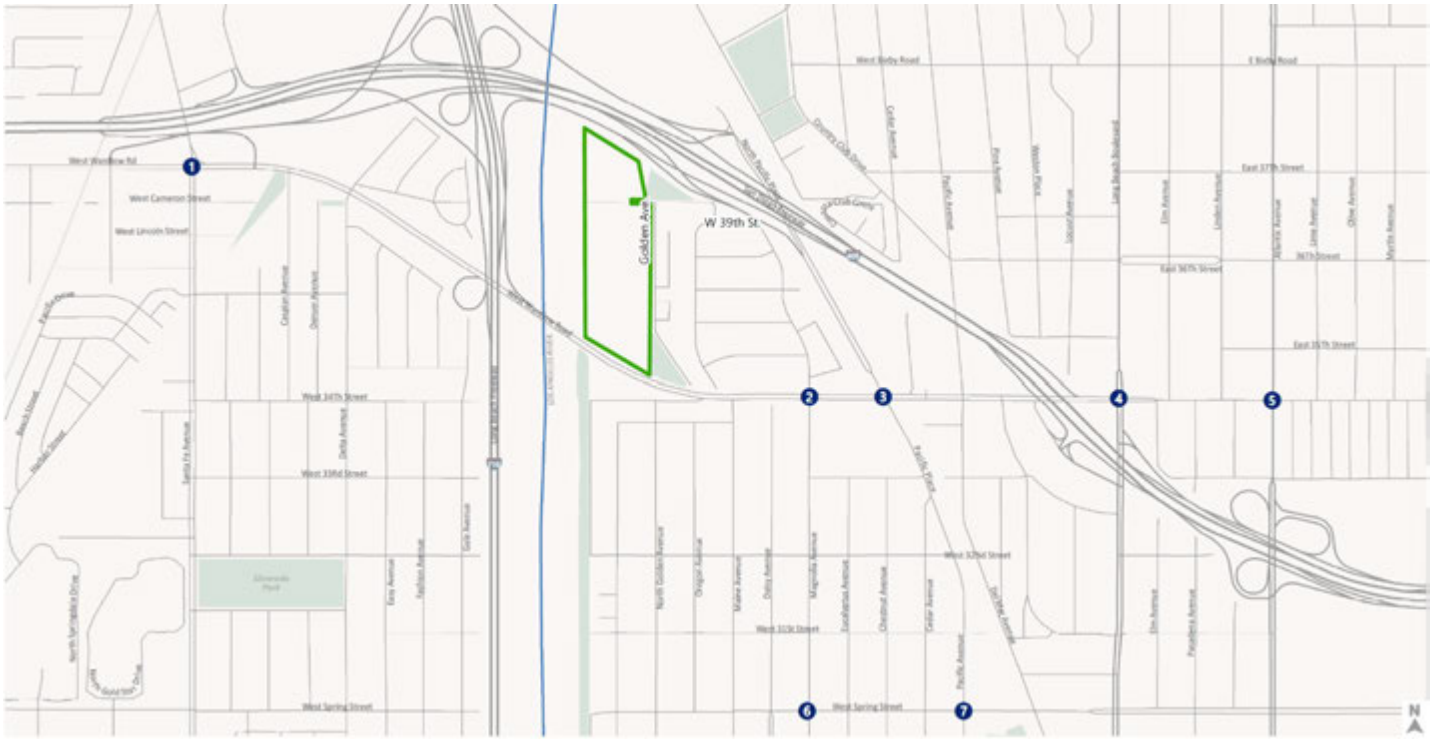
While the counts conducted in September of 2020 are not representative of typical weekday peak period traffic conditions, it provided a reasonable picture of the relative distribution of turning movement volumes at these locations. The 2020 counts were also adjusted accordingly by balancing the through movement volumes along Wardlow Road to match the observed through movements in 2018 (pre-COVID) at Long Beach Boulevard. A 0.4% annual growth rate factor was also applied to the 2018 counts at intersections #1 and #4 to reflect a 2020 existing baseline condition. The Baseline (2020) Conditions peak hour traffic volumes for the study intersections are shown on Figure 5. The traffic count sheets are provided in **Appendix B**.

As part of the field inventory of the study area, Fehr & Peers also collected the following information:

- Lane configurations and signal phasing
- Adjacent land uses, as well existing pedestrian and bicycle facilities, including transit service

Baseline Traffic Level of Service

Traffic volumes, existing lane configurations, and signal timings were used to evaluate operations at the study intersections for Baseline AM and PM peak hour conditions. The results are summarized in **Table 5**, showing LOS and average delay per vehicle at the study intersections. All intersections operate at LOS D or better, except for Santa Fe Avenue & Wardlow Road in the PM peak hour (intersection #1), Long Beach Boulevard & Wardlow Road in the PM peak hour (intersection #4), and Atlantic Avenue & Wardlow Road in the PM peak hour (intersection #5). LOS calculation worksheets, including vehicle queues by lane group, are provided in **Appendix C**.



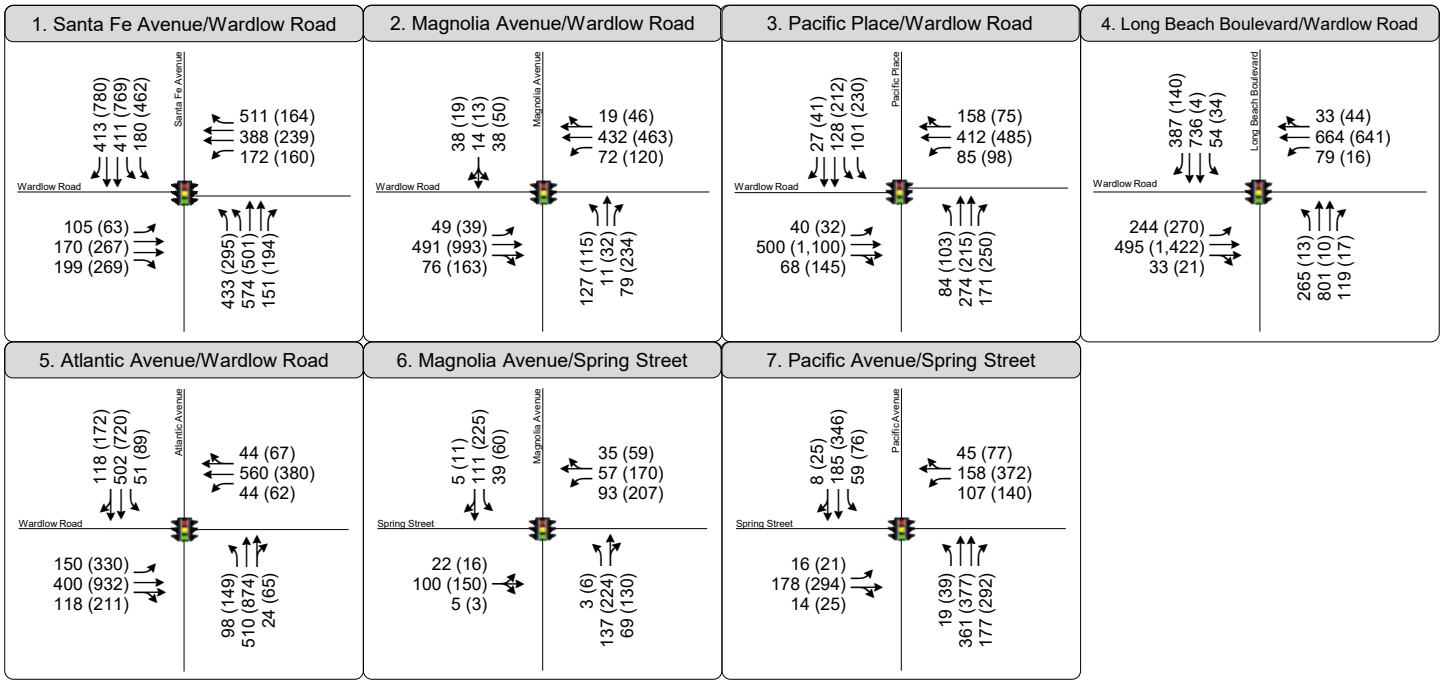


Figure 5

Peak Hour Traffic Volumes and Lane Configurations
Existing Baseline (2020) Conditions

TABLE 5: EXISTING BASELINE CONDITIONS INTERSECTION LEVELS OF SERVICE

No.	Study Intersection	Peak Hour	Existing Baseline (2020)	
			Delay[1]	LOS
1	Santa Fe Avenue & Wardlow Road	AM	31.8	C
		PM	76.6	**E**
2	Magnolia Avenue & Wardlow Road	AM	13.6	B
		PM	16.4	B
3	Pacific Place & Wardlow Road	AM	18.6	B
		PM	35.3	D
4	Long Beach Boulevard & Wardlow Road	AM	52.7	D
		PM	57.7	**E**
5	Atlantic Avenue & Wardlow Road	AM	32.6	C
		PM	>120	**F**
6	Magnolia Avenue & Spring Street	AM	15.5	B
		PM	19.0	B
7	Pacific Avenue & Spring Street	AM	12.2	B
		PM	17.0	B

Notes: Intersection operations below LOS D are shown in **bold**.
[1]Delay (second per vehicle) and LOS estimated using HCM 6th Edition.
Source: *Fehr & Peers, 2021.*

According to Table 2 of the City's Mobility Element 2035, Santa Fe Avenue & Wardlow Road (intersection #1) operates with LOS E during the PM peak hour. Moreover, the intersections specified in the City of Long Beach General Plan Mobility Element already operating at LOS E/F will be allowed to operate at existing levels.

5.3.2 Cumulative Conditions

Opening Year Traffic Volumes

To evaluate the potential effects of the proposed Project on opening year (2026) conditions, it was necessary to develop estimates of future traffic conditions in the area both without and with Project traffic. First, estimates of traffic growth were developed for the study area to forecast future conditions without the Project. These forecasts included traffic increases as a result of both regional ambient traffic growth and traffic generated by specific developments in the vicinity of the Project (related projects).

These projected traffic volumes, identified herein as the Opening Year No Project conditions, represent the future baseline conditions without the proposed Project. The traffic generated by the proposed Project was then estimated and assigned to the surrounding street system. Project traffic was added to the Opening Year No Project conditions to form Opening Year Plus Project traffic conditions, which were analyzed to determine the incremental traffic effects attributable to the Project itself.

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

Background or Ambient Growth

Based on the direction of City's TIA guidelines, an ambient growth factor of 0.4% per year was applied to adjust the baseline year traffic volumes to reflect the effects of regional growth and development. This adjustment was applied to the baseline year (2020) traffic volume data to reflect the effect of ambient growth by the opening year 2026. Note, a 0.4% growth factor was also applied to the two study locations where 2018 historical counts were retrieved to adjust them to the baseline year (2020).

Related Project Traffic Generation and Assignment

Opening Year traffic forecasts include the effects of known specific projects, called related projects, expected to be implemented in the vicinity of the proposed Project Site prior to the buildout date of the proposed project. The list of related projects was prepared based on data from the City.

- Self-Storage/RV Storage Facility at 3701 Pacific Place.
- Laserfiche Office Building at 3435 Long Beach Boulevard.

Trip Distribution

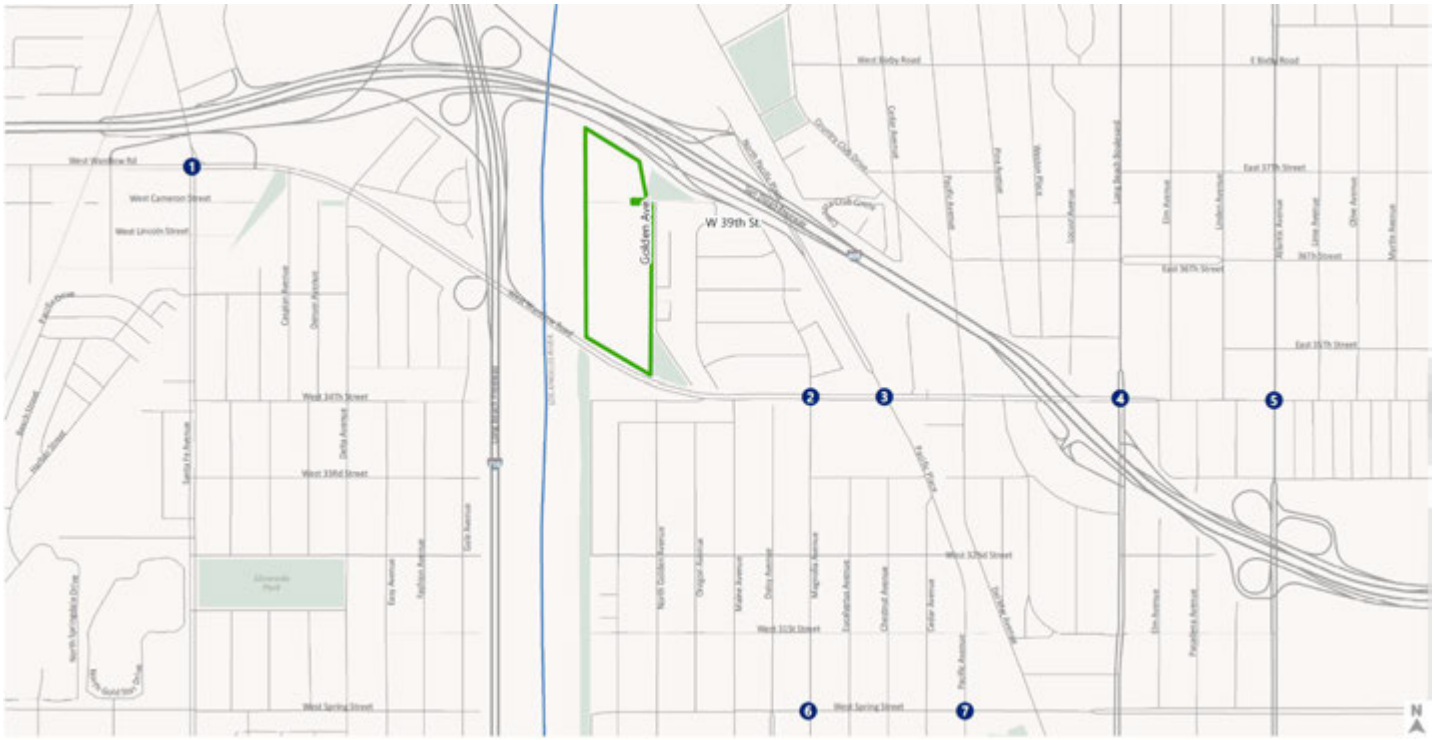
The geographic distribution of the traffic generated by the related projects is dependent on several factors. These factors include the type and density of the proposed land uses, the geographic distribution of population from which employees and potential patrons of proposed commercial developments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

Traffic Assignment

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

Opening Year No Project Traffic Volumes

Opening year 2026 base weekday AM and PM peak hour traffic volumes and lane geometries for the analyzed intersections are provided in **Figure 10**. The Opening Year No Project traffic conditions represent an estimate of future conditions without the proposed Project inclusive of the ambient background growth and related projects traffic.



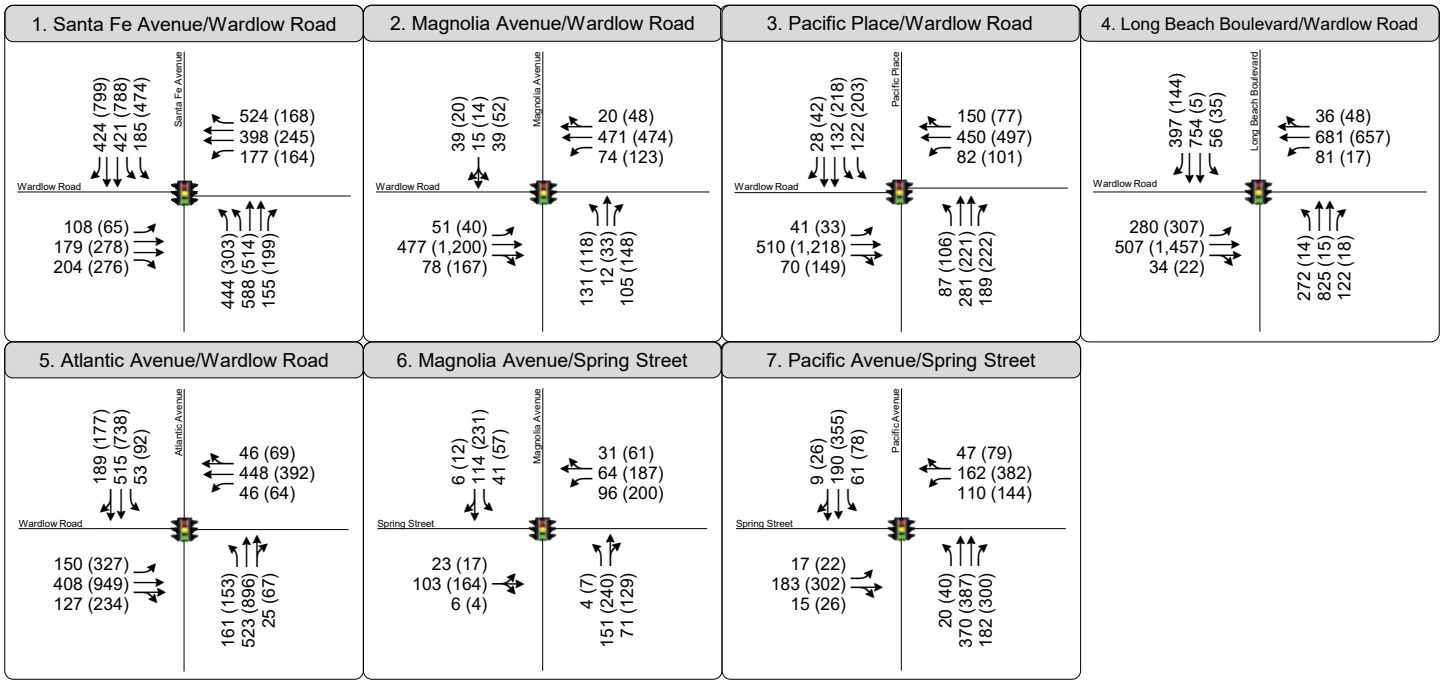


Figure 10

Peak Hour Traffic Volumes and Lane Configurations
Opening Year (2026) No Project Conditions

5.3.3 Cumulative Plus Project Conditions

Opening Year Plus Project Traffic Projections

The proposed Project traffic volumes were added to the Opening Year No Project traffic projections, resulting in Opening Year (2026) Plus Project AM and PM peak hour traffic volumes. As provided in **Figure 11**, the Opening Year (2026) Plus Project scenario presents future traffic conditions with the completion of the proposed Project.

Opening Year Plus Project Traffic Analysis Criteria

Table 6 represents the intersection level of service thresholds, as defined in the *Highway Capacity Manual, 6th Edition*, for both signalized and unsignalized intersections.

TABLE 6: INTERSECTION LEVEL OF SERVICE THRESHOLDS

Level of Service (LOS)	Signalized Intersection Average Control Delay (sec/veh)	Unsignalized Intersection Average Control Delay (sec/veh)
A	≤ 10.0	≤ 10.0
B	> 10.1 to 20.0	> 10.1 to 15.0
C	> 20.1 to 35.0	> 15.1 to 25.0
D	> 35.1 to 55.0	> 25.1 to 35.0
E	> 55.1 to 80.0	> 35.1 to 50.0
F	≥ 80.0	> 50.0

Source: *Highway Capacity Manual, 6th Edition.* Transportation Research Board, 2016.

Performance Criteria and LOS Acceptable Thresholds

Per the City's TIA guidelines for project traffic analysis, the City has identified LOS D as the threshold for acceptable operating conditions for intersections. The following criteria was used to determine if the addition of Project traffic would be responsible for LOS deficiencies and whether feasible roadway modifications should be identified to improve performance:

- A signalized intersection to degrade from LOS D or better under baseline conditions to LOS E or LOS F with the addition of project trips in the opening year. On occasion, LOS E may be allowed for peak periods in very dense urban conditions (according to City guidelines) per the City's discretion. The intersections specified in the City of Long Beach General Plan Mobility Element already operating at LOS E/F will be allowed to operate at existing levels, including intersection #1 -Santa Fe Avenue & Wardlow Road.

- The average delay to increase by 2.5 seconds or more at a signalized intersection operating at LOS E or LOS F under baseline conditions.
- Under project conditions, the 95th percentile queue length exceeds the available storage length at any turn bay.

Opening Year Operational Analysis

The 2026 Opening Year No Project and Plus Project peak hour traffic volumes were analyzed to determine the projected LOS and queue lengths for the turn pockets for each of the analyzed intersections. **Table 7** summarizes the projected Opening Year (2026) No Project and Plus Project LOS for the study intersections. **Table 8** summarizes the projected queue lengths for the turning movements at the study intersections.

Opening Year (2026) No Project Traffic Level of Service

Four of the seven study intersections are projected to operate at LOS D or better during the morning and afternoon peak hours under Opening Year (2026) No Project conditions. The following signalized intersections are projected to operate at LOS E or F under Opening Year (2026) No Project conditions:

1. Santa Fe Avenue & Wardlow Road – PM peak hour only

4. Long Beach Boulevard & Wardlow Road – AM and PM peak hours

5. Atlantic Avenue & Wardlow Road – PM peak hour only

Opening Year (2026) Plus Project Traffic Analysis

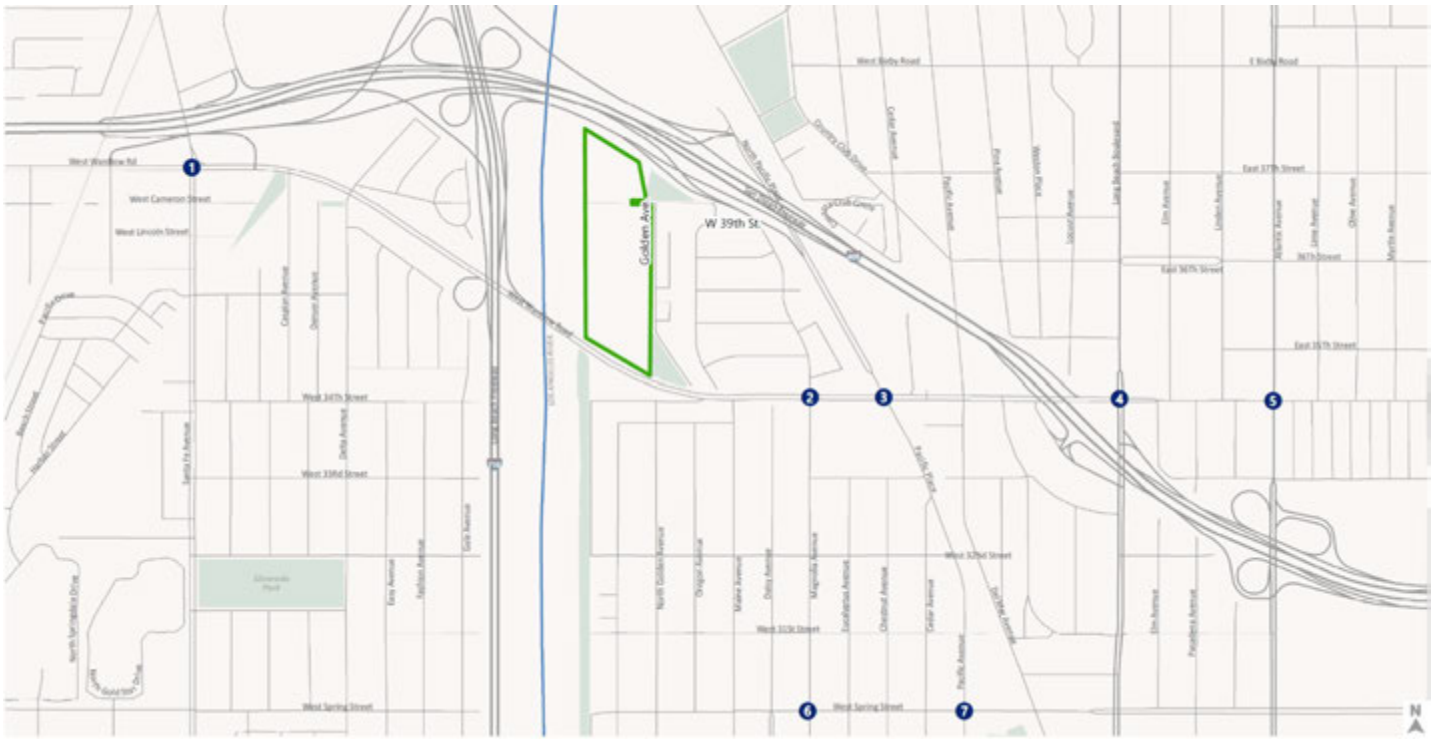
Four of the seven study intersections are projected to operate at LOS D or better during the morning and afternoon peak hours under Opening Year (2026) Plus Project conditions. The following signalized intersections are projected to operate at LOS E or F under Opening Year (2026) Plus Project conditions:

1. Santa Fe Avenue & Wardlow Road – PM peak hour only

4. Long Beach Boulevard & Wardlow Road – AM and PM peak hours

5. Atlantic Avenue & Wardlow Road – PM peak hour only

Detailed intersection LOS worksheets for the study intersections is presented in **Appendix C**.



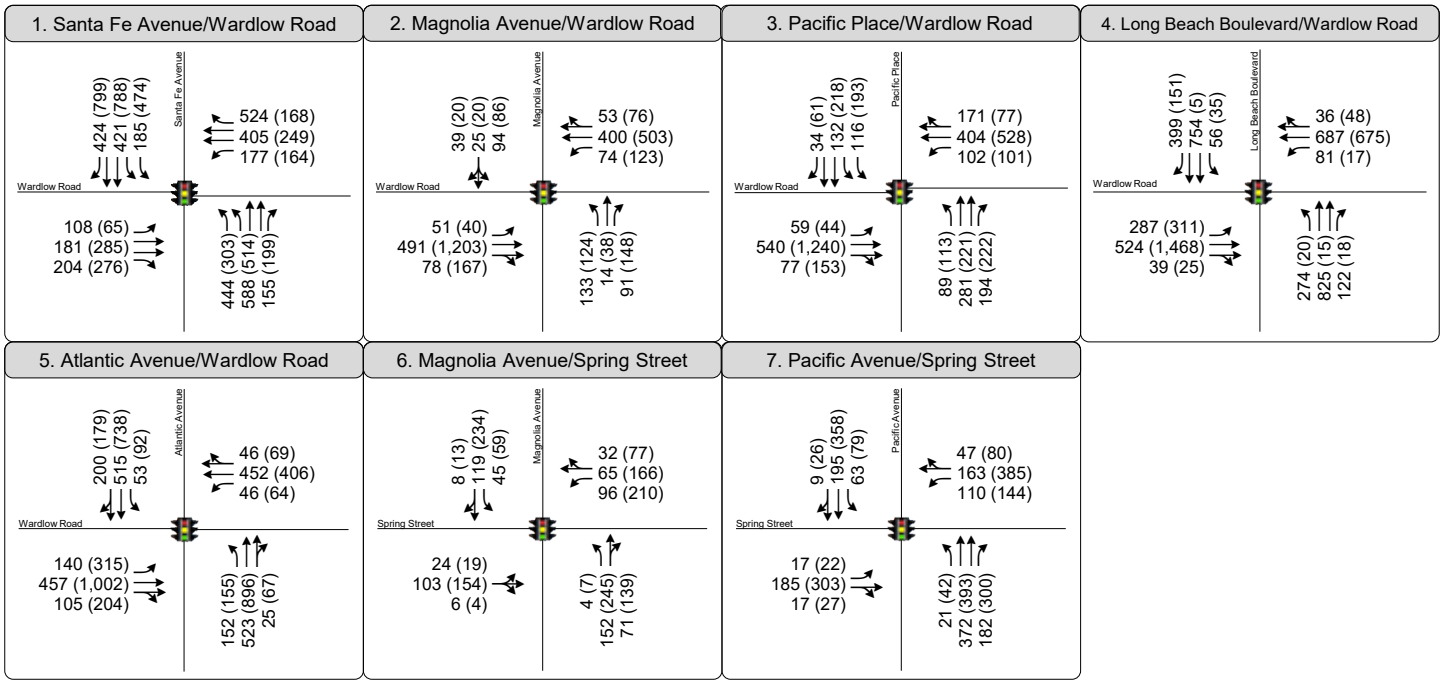


Figure 11

Peak Hour Traffic Volumes and Lane Configurations
Opening Year (2026) Plus Project Conditions

TABLE 7: OPENING YEAR (2026) WITH AND WITHOUT PROJECT INTERSECTION LEVELS OF SERVICE

No.	Study Intersection	Peak Hour	Future Base (2026)		Future Base (2026) Plus Project		LOS Deficiency?
			Delay[1]	LOS	Delay[1]	LOS	(Yes/No)[2]
1	Santa Fe Avenue & Wardlow Road	AM	30.7	C	32.1	C	No
		PM	81.0	**F**	81.5	**F**	No
2	Magnolia Avenue & Wardlow Road	AM	13.7	B	13.8	B	No
		PM	17.5	B	18.1	B	No
3	Pacific Place & Wardlow Road	AM	19.0	B	18.9	B	No
		PM	39.5	D	40.2	D	No
4	Long Beach Boulevard & Wardlow Road	AM	55.9	**E**	56.5	**E**	No
		PM	63.6	**E**	65.0	**E**	No
5	Atlantic Avenue & Wardlow Road	AM	32.9	C	33.1	C	No
		PM	137.7	**F**	137.9	**F**	No
6	Magnolia Avenue & Spring Street	AM	15.6	B	15.6	B	No
		PM	19.0	B	19.1	B	No
7	Pacific Avenue & Spring Street	AM	12.3	B	12.3	B	No
		PM	17.4	B	17.5	B	No

Notes: Intersection operations below LOS D are shown in **bold.**
[1]Delay (seconds per vehicle) and LOS estimated using HCM 6th Edition.
[2]Per the City's TIA guidelines, an LOS deficiency arises when the change in average delay increases by 2.5 seconds or more at a signalized intersection operating at LOS E or LOS F under baseline conditions.
Source: *Fehr & Peers, 2021.*

Per the City's intersection performance criteria and LOS thresholds, the addition of project traffic would be responsible for LOS deficiencies if a signalized intersection would degrade from LOS D or better under baseline conditions to LOS E or LOS F with the addition of project trips in the opening year. As shown in Table 7, none of the study intersections are projected to degrade from LOS D or better with the addition of project trips. Furthermore, at locations already operating with LOS E or LOS F under opening year baseline conditions, the average delay increases by less than 2.5 seconds with the addition of project trips. Therefore, the addition of Project traffic would not be responsible for LOS deficiencies with respect to average delay.

Table 8 summarizes the projected queue lengths for the turning movements at the study intersections for the Opening Year (2026) No Project and Plus Project scenarios. The estimated queue lengths are reported as the 95th percentile queue length, rounded up to the nearest 25 feet (assuming an equivalent car storage length of 25 feet). Per the City's TIA guidelines, project traffic would be responsible for queuing deficiencies if under project conditions, the 95th percentile queue length exceeds the available storage length at any turn bay.

INSERT TABLE 8: OPENING YEAR (2026) PLUS PROJECT INTERSECTION TURNING MOVEMENT QUEUING ANALYSIS

No.	Study Intersection	Movement	Storage Length	95th Percentile Queue				Movement Deficiency	
				Future Base (2026)		Future Base (2026) Plus Project			
				AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
1	Santa Fe Ave & Wardlow Rd	EBL	150	125	100	125	100	-	-
		EBT	775	100	300	100	300	-	-
		EBR	150	75	75	75	75	-	-
		WBL	250	200	225	225	250	-	-
		WBT	775	175	125	175	125	-	-
		WBR	225	325	75	325	75	Yes	-
		NBL	125	200	150	200	150	Yes	Yes
		NBT	975	225	200	225	200	-	-
		NBR	100	50	75	50	75	-	-
		SBL	100	100	275	100	275	-	Yes
		SBT	575	175	350	175	350	-	-
		SBR	100	175	850	175	850	-	Yes
2	Magnolia Ave & Wardlow Rd	EBL	150	50	50	50	50	-	-
		EBTR	850	200	475	200	475	-	-
		WBL	150	75	275	75	275	-	Yes
		WBTR	600	150	200	150	200	-	-
		NBL	100	175	200	200	225	Yes	Yes
		NBT	1,225	25	75	25	75	-	-
		NBR	100	50	75	50	75	-	-
		SBTLR	450	100	125	100	125	-	-
3	Pacific Pl & Wardlow Rd	EBL	150	100	100	100	100	-	-
		EBTR	600	325	925	325	925	-	Yes
		WBL	175	150	225	150	225	-	Yes
		WBTR	1,900	275	450	275	475	-	-
		NBL	100	175	250	175	275	Yes	Yes
		NBT	425	175	175	175	175	-	-
		NBR	100	50	75	50	75	-	-
		SBL	125	75	125	75	125	-	-
		SBT	750	100	175	100	175	-	-
		SBR	100	25	25	25	25	-	-
4	Long Beach Blvd & Wardlow Rd	EBL	275	575	575	575	575	Yes	Yes
		EBTR	1,900	350	575	350	575	-	-
		WBL	100	150	200	150	200	Yes	Yes
		WBTR	1,250	450	500	475	525	-	-
		NBL	200	400	500	400	525	Yes	Yes
		NBT	950	500	700	500	700	-	-
		NBR	950	75	100	75	100	-	-

		SBL	250	75	200	75	200	-	-
		SBT	1,100	550	550	550	550	-	-
		SBR	100	475	400	475	425	Yes	Yes
5	Atlantic Ave & Wardlow Rd	EBL	150	175	350	175	350	Yes	Yes
		EBTR	1,250	125	350	125	350	-	-
		WBL	150	100	150	100	150	-	-
		WBTR	1,250	150	175	150	175	-	-
		NBL	100	175	325	200	325	Yes	Yes
		NBTR	525	250	600	250	600	-	Yes
		SBL	100	100	200	100	200	-	Yes
		SBTR	1,100	350	575	350	575	-	-
6	Magnolia Ave & Spring St	EBTLR	250	75	100	75	100	-	-
		WBL	75	25	50	25	50	-	-
		WBTR	1,275	25	25	25	25	-	-
		NBL	75	25	25	25	25	-	-
		NBTR	600	175	325	175	350	-	-
		SBL	100	50	100	50	100	-	-
		SBTR	325	100	200	100	200	-	-
7	Pacific Ave & Spring St	EBL	125	25	25	25	25	-	-
		EBTR	1,275	175	300	175	300	-	-
		WBL	100	125	200	125	200	Yes	Yes
		WBTR	375	150	475	150	475	-	Yes
		NBL	100	25	50	25	50	-	-
		NBT	400	125	125	125	125	-	-
		NBR	100	50	150	50	150	-	Yes
		SBL	100	75	100	75	100	-	-
		SBTR	375	75	125	75	125	-	-

As shown in Table 8, six of the seven study locations are projected to experience at least one deficient queuing movement at the turn bays under Project conditions in the opening year per the City's performance criteria. Of the 30 identified deficient turning movements under Project conditions, 24 are deficient in the future base without the Project traffic. Four of the seven study intersections experience at least one turning movement queue length increase of 25 feet (assuming an equivalent car storage length of 25 feet) in the Opening Year (2026) Plus Project conditions at turn bays already extending beyond the available storage. For example, the northbound left-turning movements at Magnolia Avenue & Wardlow Road in the AM/PM peak hours, and Pacific Place & Wardlow Road and Long Beach Boulevard & Wardlow Road in the PM peak. Additionally, the southbound right-turning deficient movement at Long Beach Boulevard & Wardlow Road already currently behaves as an unstriped right-turning lane based on observation, where vehicles start to queue up along the curb (beyond the 100 feet storage length) to make a right turn onto westbound Wardlow Road. Lastly, the northbound left-turning movement at Atlantic Avenue & Wardlow Road is also projected to add 25 feet to the queue length with the Project traffic in the AM peak. However, in the PM peak, the queue length is projected to be nearly double the AM peak (325 feet) in both the Opening Year (2026) No Project and Plus Project conditions.

Opening Year Project Effect

The 2026 Opening Year net Project effect on the study intersections is as follows:

- None of the study intersections are projected to degrade from LOS D or better with the addition of Project trips. Furthermore, at locations already operating with LOS E or LOS F under opening year baseline conditions, the average delay increases by less than 2.5 seconds with the addition of Project trips. Additionally, per the City's Mobility Element 2035, Santa Fe Avenue & Wardlow Road (intersection #1) operates with LOS E during the PM peak. Intersections specified in the Mobility Element already operating at LOS E or F will be allowed to operate at existing levels. Therefore, the addition of Project traffic would not be responsible for LOS deficiencies with respect to average delay.
- Four of the seven study intersections experience at least one turning movement queue length increase of 25 feet (assuming an equivalent car length of 25 feet) in the Opening Year (2026) Plus Project conditions at turn bays already extending beyond the available storage in the Opening Year (2026) No Project conditions. The other deficient movements occur at the study intersections irrespective of the Project traffic.

Opening Year (2026) Plus Project Traffic with Roadway Improvements Analysis

According to the City's guidelines, a deficient movement occurs if the 95th percentile queue length exceeds the available storage length at any turn bay under Project conditions. The following study intersections are projected to experience at least one deficient turning movement queue length increase of 25 feet under Project conditions:

2. Magnolia Avenue & Wardlow Road – northbound left-turning movement in the AM and PM peak hours

3. Pacific Place & Wardlow Road – northbound left-turning movement in the PM peak

4. Long Beach Boulevard & Wardlow Road – northbound left-turning movement in the PM peak and the southbound right-turning movement in the PM peak

5. Atlantic Avenue & Wardlow Road – northbound left-turning movement in the AM peak

A potential and feasible roadway improvement for locations #2 and #3 would be to extend the northbound left-turn storage bays to equal the 95th percentile queue length under Project conditions. Given these two locations already experience deficient turning movements in the Opening Year without the Project, a fair share contribution to implement these roadway improvements should be applied.

Extending the northbound left-turn storage bay at location #4 is not feasible due to existing roadway geometrics, including the I-405 freeway columns and the westbound left-turning movement exiting the freeway. Additionally, the southbound right-turning deficient movement at this location already currently behaves as an unstriped right-turning lane based on observation, where vehicles start to queue up along the curb (beyond the 100 feet storage length) to make a right turn onto westbound Wardlow Road.

Lastly, extending the northbound left-turn storage at location #5 is not feasible due to existing roadway geometrics. However, in the PM peak, the queue length is projected to be nearly double the AM peak queue length (325 feet) in both the Opening Year (2026) No Project and Plus Project conditions. Therefore, while the Project extends the AM peak hour queue length by 25 feet, the queue length in the PM peak is longer than the AM peak both with and without the Project.

5.4 Freeway Impact Analysis Screening Criteria

Per the City's TIA guidelines, the project freeway impact screening analysis shall investigate whether the project meets any of the following screening criteria:

- The project's peak-hour trips would result in a 1 percent or more increase in trips based on the freeway mainline capacity of a freeway segment operating at LOS E or F (based on an assumed capacity of 2,000 vehicles per hour per lane);
- The project's peak-hour trips would result in a 2 percent or more increase in trips based on the freeway mainline capacity of a freeway segment operating at LOS D (based on an assumed capacity of 2,000 vehicles per hour per lane);
- The project's peak-hour trips would result in a 1 percent or more increase in trips based on the capacity of a freeway off-ramp operating at LOS E or F (based on an assumed ramp capacity of 850 vehicles per hour per lane); or
- The project's peak-hour trips would result in a 2 percent or more increase in trips based on the capacity of a freeway off-ramp operating at LOS D (based on an assumed ramp capacity of 850 vehicles per hour per lane).

If the Project meets any of the screening criteria, then the Caltrans Intergovernmental Review (IGR) will be consulted for a determination on the need for analysis and the methodology to be utilized for a freeway impact analysis.

Project Freeway Impact Analysis

Given the Project access is confined to the Wardlow Road driveway and designed for left-in and right-in/right-out movements, the I-710 northbound on-ramp was analyzed for potential freeway impacts. Based on the trip distribution described in section 5.2 and shown in Figure 9, the Project is projected to result in a less than 1% increase in trips based on the freeway mainline capacity in both the AM and PM peak hours on the I-710 northbound on-ramp. Therefore, this location was screened from further freeway impact analysis per the City's criteria. Additionally, there are three freeway off-ramps in the vicinity of the Project that were identified for freeway impact analysis screening:

1. The I-710 southbound off-ramp to eastbound Wardlow Road
2. The I-405 southbound off-ramp to southbound Pacific Place
3. The I-405 northbound off-ramp to Long Beach Boulevard

The I-405 northbound off-ramp to Long Beach Boulevard (location #3) does not meet screening criteria given that it is projected to result in a less than 1% increase in trips based on the capacity of the freeway off-ramp (based on an assumed ramp capacity of 850 vehicles per hour per lane). Both the I-710 southbound off-ramp to eastbound Wardlow Road (location #1) and the I-405 southbound off-ramp to southbound Pacific Place (location #2) are projected to result in a 1% increase or more in trips based on the capacity of the respective freeway off-ramp. However, location #2 includes an uncontrolled, two-lane off-ramp from the southbound I-405 to southbound Pacific Place, which screens it from further freeway impact analysis per the City's LOS/delay criteria. Location #1 includes an existing yield control for the I-710 southbound off-ramp to eastbound Wardlow Road, which results in a projected LOS of A in the PM peak hour for the southbound off-ramp. Given the City's criteria for LOS/delay on the off-ramp, this location was also screened from further freeway impact analysis.

5.5 Other Modes Analysis – Transit, Bicycle, and Pedestrian Facilities

This section analyzes potential Project effects to other transportation modes infrastructure, including transit, bicycle, and pedestrian modes, within the study area. The analysis includes an assessment of potential degradation of other modes facilities in the project vicinity, such as transit stops, bicycle facilities, and pedestrian facilities, and if applicable, identifies any quantifiable degradation to these facilities that can be attributed to the Project. The analysis also addresses potential Project effects and benefits of site development and associated roadway improvements on bicycle/pedestrian infrastructure, circulation, and conformance to existing plans and policies.

Transit

Long Beach Transit (LBT) and LA Metro provide public transit services in the vicinity of the proposed Project site. Although Wardlow Road is classified as a Secondary Transit Route, there are no stops or routes fronting the Project site. The nearest bus stop could be found east of the Project site at southeast Magnolia Avenue & Wardlow Road, where LBT Route 181 operates.

Near the proposed Project, at the Wardlow Metro A (Blue) Line station on Pacific Place, is the Wardlow Station Bay 3. Bus Routes 181 and 182 operate at this Bay. The LA Metro A (Blue) Rail line provides a connection between Downtown Long Beach and Downtown Los Angeles. The Wardlow A (Blue) line station is approximately 0.5-mile east of the Project site at Pacific Place & Wardlow Road. The Project is not expected to negatively affect or degrade transit modes or facilities within the study area, including the existing transit stops on Wardlow Road & Magnolia Avenue, and the Wardlow Metro A (Blue) Line station at Pacific Place. The Project related traffic is not expected to add substantial automobile delay to these intersections in the AM and PM peak hours. Additionally, the limited access design of the main Project driveway on Wardlow Road, with left-out turns prohibited, would minimize the amount of project related eastbound traffic through the Magnolia Avenue and Pacific Place intersections along Wardlow Road.

Bicycle

There currently exists Class IV protected bike lane facilities along Wardlow Road, in both directions, east of the Project Site. The bike lane on the south side of Wardlow Road, in the eastbound direction, begins east of the Project's main driveway -east of 34th Street and continues east past Wardlow Road. The bike lane on the north side of Wardlow Road, in the westbound direction, begins east of Pacific Place and ends at Magnolia Avenue. There also exists a City Bike Share program, with the nearest stations located just over 1-mile east of the Project site on Bixby Road, Wardlow Road and Atlantic Avenue. The bike share stations are located at the following intersections:

- Bixby Road & Long Beach Boulevard
- Wardlow Road & Pacific Avenue
- Atlantic Avenue & Carson Street

The Project is not expected to negatively affect or degrade bicycle modes or facilities within the study area, including the existing bicycle lane facilities on Wardlow Road east of the Project Site. The Project related traffic is not expected to add substantial automobile delay to the nearby intersections in the AM and PM peak hours. Additionally, the limited access design of the main Project driveway on Wardlow Road, with left-out turns prohibited, would minimize the amount of project related eastbound traffic through the Magnolia Avenue and Pacific Place intersections along Wardlow Road.

Pedestrian

Pedestrian facilities in the study area include sidewalks, crosswalks, and pedestrian signals. The major streets that provide access to the Project include Wardlow Road, Magnolia Avenue, and Baker Street. These roadways have well-connected and maintained sidewalk networks near the Project Site. Sidewalks are provided on both sides of these streets, except for portions of Wardlow Road (between Magnolia Avenue and the Project site). Although, this section does have an adjacent local access road with sidewalk that is separated by a concrete, landscaped median, as well as a sidewalk on the south side of Wardlow Road between Maine Avenue and the Project Site. There is also an existing Wrigley Heights dog park adjacent to the Project, immediately to the east on Golden Avenue, with two pedestrian points of access along Golden Avenue. The existing neighborhood Baker Street park at Baker Street & Golden Avenue is located east of the Project, adjacent to the proposed open space portion of the Project.

The Project is not expected to negatively affect or degrade pedestrian modes or facilities within the study area. The limited access design of the main Project driveway on Wardlow Road, with left-out turns prohibited, would minimize the amount of potential conflicts. Additionally, the project traffic is concentrated at the Wardlow Road driveway, as opposed to providing a second point of access at Baker Street. The north Baker Street driveway would be closed/gated and accessed occasionally by emergency vehicles. The Project also provides pedestrian connections to Golden Avenue and the existing dog park to the east through sidewalk infrastructure improvements.

5.6 Site Circulation Analysis

This section addresses the adequacy of the proposed site circulation, including on-site parking, and identifies potential issues. Vehicles would enter and exit via the main access driveways on Wardlow Road and Baker Street. Residents and visitors will use the main Project driveway on Wardlow Road, and the north driveway at Baker Street will be gated/closed and accessed occasionally by City maintenance vehicles. The north driveway will also be designated for additional emergency vehicle access. The Project site would provide a total of 514 parking stalls, including 452 off-street parking (i.e., garage), 59 on-street parking for visitors/guests and 3 van accessible ADA (Americans with Disabilities Act) stalls. Internal circulation would be provided via several newly constructed private streets, along with pedestrian sidewalk infrastructure. Within the Project site, the narrowest streets are 26 feet wide, accounting for building overhangs. Not accounting for overhangs, these streets are 30 feet wide, which conform to City standards. Additionally, there are 59 designated on-street parking stalls provided for guests, while the remainder of parking is off-street, thus limiting potential conflicts with emergency vehicles.

6. Conclusion and Recommendations

The Integral Communities River Park Residential Project (Project) in the City of Long Beach, California, consists of the following:

- A total of 226 dwelling units: 53 Carriage Townhouses, 99 Row Townhouses, and 74 Individual Condominium Units. The total site area is 20.34 acres, which includes 15.53 acres of developed area and 4.81 acres of open space.

CEQA Project VMT

The Project site is located within 0.5-mile of the major transit stop at Wardlow Road & Pacific Place; the LA Metro Blue Line (or "A" Line) Wardlow station. The Project VMT impact would therefore be presumed insignificant, and no further analysis would be required according to the City's TIA guidelines. However, given the secondary conditions, the Project includes more parking for use by residents and visitors than required (by 5 parking spaces). As a result, the Project cannot be presumed to have a less than significant impact due to the Project's proximity to a major transit station.

The Project residential VMT per capita metric is estimated to be 10.2 VMT per capita, which is below the City's significance threshold of 11.8. Therefore, the Project is presumed to create a **less than significant VMT impact** and no further VMT analysis is required.

The Project has the following characteristics that make it perform well from a VMT impact analysis perspective:

- The proposed residential land use matches the surrounding land uses of single-family and multifamily housing;
- The Project's proximity to the Wardlow LA Metro light-rail station;
- The inclusion of affordable housing units; &
- The traffic analysis zone is already a borderline low-VMT area based on the City's VMT mapping.

Given the above finding of less than significant Project VMT impact, the identification of VMT mitigation measures is not required.

Other CEQA Project Findings

The Project features, location, and design generally support multimodal transportation options and would be consistent with policies, plans, and programs that support alternative transportation, including the *Mobility Element 2035*, the *Housing Element* and the *Safe Streets Action Plan*. Additionally, the Project would not substantially increase hazards or conflicts, and would contribute to overall walkability and bike-ability through enhancements to the Project site. Finally, the proposed Project site access would not result in inadequate emergency access. All access driveways will be designed according to City standards.

Non-CEQA Traffic Analysis

The Project is estimated to generate 1,688 daily vehicle trips, 119 AM peak hour vehicle trips (29 inbound/90 outbound), and 149 PM peak hour vehicle trips (93 inbound/56 outbound). These trips were evaluated to assess network capacity and level of service (LOS) for informational (non-CEQA) purposes only. Under existing Baseline (2020) Conditions, all study intersections operate at LOS D or better, except for Santa Fe Avenue & Wardlow Road in the PM peak hour, Long Beach Boulevard & Wardlow Road in the PM peak hour, and Atlantic Avenue & Wardlow Road in the PM peak hour.

Opening Year (2026) No Project Traffic Level of Service

Four of the seven study intersections are projected to operate at LOS D or better during the morning and afternoon peak hours under Opening Year No Project conditions. The following signalized intersections are projected to operate at LOS E or F under Opening Year (2026) No Project conditions:

1. Santa Fe Avenue & Wardlow Road – PM peak hour only
4. Long Beach Boulevard & Wardlow Road – AM and PM peak hours
5. Atlantic Avenue & Wardlow Road – PM peak hour only

Opening Year (2026) Plus Project Traffic Analysis

Four of the seven study intersections are projected to operate at LOS D or better during the morning and afternoon peak hours under Opening Year (2026) Plus Project conditions. The following signalized intersections are projected to operate at LOS E or F under Opening Year (2026) Plus Project conditions:

1. Santa Fe Avenue & Wardlow Road – PM peak hour only
4. Long Beach Boulevard & Wardlow Road – AM and PM peak hours
5. Atlantic Avenue & Wardlow Road – PM peak hour only

Per the City's intersection performance criteria and LOS thresholds, the addition of project traffic would be responsible for LOS deficiencies if a signalized intersection would degrade from LOS D or better under baseline conditions to LOS E or LOS F with the addition of project trips in the opening year. As shown above, none of the study intersections are projected to degrade from LOS D or better with the addition of project trips. Furthermore, at locations already operating with LOS E or LOS F under opening year baseline conditions, the average delay increases by less than 2.5 seconds with the addition of project trips. Additionally, six of the seven study locations are projected to experience at least one deficient queuing movement at the turn bays under Project conditions per the City's performance criteria. The majority of the deficient turning movements are projected to occur in the Opening Year without Project traffic. Potential roadway improvements were identified for two of the seven study locations by extending the northbound left-turn storage bays to equal the projected 95th percentile queue length under Project conditions. Given these two locations already experience deficient turning movements in the Opening Year without the Project, a fair share contribution to implement these roadway improvements should be applied.

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APPENDIX A – TIA SCOPING AGREEMENT

Scoping Agreement for Traffic Impact Analysis

This Scoping Agreement acknowledges the Transportation Impact Study for the following Project will be prepared in accordance with the City of Long Beach's Transportation Impact Study Guidelines:

A. Project Information

Project Name: Integral Communities River Park Residential

Project Location: Wrigley Heights community: Wardlow Road & Golden Avenue

Project Description: 226 dwelling units: 53 carriage townhouses, 99 row townhouses, and 74 individual condominium units. Includes 15.53 acres of developed area and 4.81 acres of open space.

Project Site Plan Attached? *(required)* ☒ Yes ☐ No

Attachment A

B. Trip Generation

Source of Trip Generation Rates ☒ ITE Trip Generation ☐ Other _____

Attachment B

	In	Out	Total
AM Trips	29	90	119
PM Trips	93	56	149
Daily Trips			1,688

Internal Trips ☐ Yes ☒ No Trip Discount % _____

Pass-by Trips ☐ Yes ☒ No Trip Discount % _____

Trip Geographic Distribution N 30 % S 25 % E 15 % W 30 %

Map of Project trip distribution % at Study intersections attached? Attachment C ☒ Yes ☐ No

C. Study Area and Assumptions

Project Completion Year TBD

Annual Growth Rate 0.4 % per year

Related Projects List attached? *(obtain from City)* ☐ Yes ☒ No

List of Study Intersection (attach map) Attachment D

- Santa Fe Avenue & Wardlow Road
- Magnolia Avenue & Wardlow Road
- Pacific Avenue & Wardlow Road
- Long Beach Boulevard & Wardlow Road
- Atlantic Avenue & Wardlow Road
- Magnolia Avenue & Spring Street
- Pacific Avenue & Spring Street

D. Other Jurisdictional Impacts

Is the project within any other Agency's sphere of influence ☐ Yes ☒ No

If yes, name of Jurisdiction

E. Contact Information

	Consultant: Fehr & Peers	Developer
Name:	Michael Kennedy, Principal	Peter Vanek, Integral Partners, LLC
Address:	100 Oceangate, Suite 550	888 San Clemente Drive, Suite 100
	Long Beach, CA 90802	Newport Beach, CA 92660
Telephone:	(562) 304-9277	(949) 720-3612
Email:	M.Kennedy@fehrandpeers.com	pvanek@integralcommunities.com

Approved by:

Consultant's Representative	Date
City of Long Beach Representative	Date

APPENDIX B – INTERSECTION TURNING MOVEMENT COUNTS

National Data & Surveying Services Intersection Turning Movement Count

Location: Santa Fe Ave & Wardlow Rd
City: Long Beach
Control: Signalized

Project ID: Historical
Date: 5/23/2018

Total

NS/EW Streets:	Santa Fe Ave				Santa Fe Ave				Wardlow Rd				Wardlow Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	2	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	89	93	16	0	35	89	105	0	16	36	21	0	33	90	94	0	717
7:15 AM	124	100	24	0	25	81	99	0	15	42	51	0	34	114	114	0	823
7:30 AM	119	159	27	0	32	94	130	0	22	52	56	0	30	96	124	0	941
7:45 AM	100	149	49	0	55	94	93	0	32	35	38	0	50	95	184	0	974
8:00 AM	98	130	26	0	41	127	96	0	22	32	59	0	53	109	89	0	882
8:15 AM	112	131	47	0	50	92	90	0	28	49	44	0	37	84	109	0	873
8:30 AM	96	116	39	0	28	114	109	0	23	45	39	0	41	88	72	0	810
8:45 AM	107	78	41	0	38	96	81	0	20	36	63	0	36	74	66	0	736
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	845	956	269	0	304	787	803	0	178	327	371	0	314	750	852	0	6756
APPROACH %'s :	40.82%	46.18%	13.00%	0.00%	16.05%	41.55%	42.40%	0.00%	20.32%	37.33%	42.35%	0.00%	16.39%	39.14%	44.47%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	429	569	149	0	178	407	409	0	104	168	197	0	170	384	506	0	3670
PEAK HR FACTOR :	0.901	0.895	0.760	0.000	0.809	0.801	0.787	0.000	0.813	0.808	0.835	0.000	0.802	0.881	0.688	0.000	0.942
	0.940				0.941				0.902				0.805				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	2	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	80	93	41	0	100	160	168	0	14	111	56	0	40	45	45	0	953
4:15 PM	86	115	47	0	103	165	167	0	16	123	50	0	43	45	43	0	1003
4:30 PM	74	113	59	0	119	176	195	0	25	144	68	0	39	49	40	0	1101
4:45 PM	66	147	40	0	123	190	225	0	14	130	59	0	41	75	41	0	1151
5:00 PM	65	119	54	0	110	187	183	0	14	130	68	0	35	63	38	0	1066
5:15 PM	87	118	39	0	106	209	170	0	9	160	71	0	43	50	43	0	1105
5:30 PM	63	97	43	0	118	209	185	0	15	168	67	0	41	58	33	0	1097
5:45 PM	43	79	49	0	93	216	147	0	11	133	67	0	38	46	40	0	962
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	564	881	372	0	872	1512	1440	0	118	1099	506	0	320	431	323	0	8438
APPROACH %'s :	31.04%	48.49%	20.47%	0.00%	22.80%	39.54%	37.66%	0.00%	6.85%	63.78%	29.37%	0.00%	29.80%	40.13%	30.07%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	292	497	192	0	458	762	773	0	62	564	266	0	158	237	162	0	4423
PEAK HR FACTOR :	0.839	0.845	0.814	0.000	0.931	0.911	0.859	0.000	0.620	0.881	0.937	0.000	0.919	0.790	0.942	0.000	0.961
	0.969				0.926				0.929				0.887				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Long Beach Blvd & Wardlow Rd
City: Long Beach
Control: Signalized

Project ID: Historical
Date: 5/10/2018

Total

NS/EW Streets:	Long Beach Blvd				Long Beach Blvd				Wardlow Rd				Wardlow Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	2	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	75	88	13	0	6	137	80	6	40	57	8	3	9	143	8	0	673
7:15 AM	61	107	16	1	12	167	93	0	45	82	8	6	13	183	6	0	800
7:30 AM	83	143	23	0	14	188	101	1	56	97	5	4	19	169	4	0	907
7:45 AM	75	211	31	0	20	202	97	0	62	121	8	7	27	181	2	0	1044
8:00 AM	56	191	32	2	13	186	101	0	67	127	6	6	18	181	9	0	995
8:15 AM	69	181	28	1	12	166	94	3	60	129	11	9	15	171	11	0	960
8:30 AM	62	211	27	1	8	176	91	0	53	114	7	5	18	125	10	0	908
8:45 AM	67	190	28	2	10	153	86	4	71	142	9	3	23	166	14	0	968
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	548	1322	198	7	95	1375	743	14	454	869	62	43	142	1319	64	0	7255
APPROACH %'s :	26.41%	63.71%	9.54%	0.34%	4.27%	61.74%	33.36%	0.63%	31.79%	60.85%	4.34%	3.01%	9.31%	86.49%	4.20%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	262	794	118	4	53	730	383	3	242	491	32	27	78	658	32	0	3907
PEAK HR FACTOR :	0.873	0.941	0.922	0.500	0.663	0.903	0.948	0.250	0.903	0.952	0.727	0.750	0.722	0.909	0.727	0.000	0.936
	0.929				0.916				0.947				0.914				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	2	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	61	212	25	1	14	154	90	3	61	183	9	12	22	187	11	0	1045
4:15 PM	79	239	32	0	26	194	97	2	55	217	18	13	27	146	18	0	1163
4:30 PM	88	236	52	0	28	174	86	1	53	200	12	12	22	157	16	0	1137
4:45 PM	74	257	49	1	34	174	97	2	70	218	14	10	18	154	15	0	1187
5:00 PM	68	248	47	2	20	186	86	1	62	207	8	6	18	177	10	0	1146
5:15 PM	80	266	29	1	22	180	87	2	51	220	8	6	22	192	17	0	1183
5:30 PM	77	245	43	0	22	168	80	1	64	259	11	9	26	147	18	0	1170
5:45 PM	79	244	27	1	22	151	71	0	68	200	8	6	23	155	19	0	1074
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	606	1947	304	6	188	1381	694	12	484	1704	88	74	178	1315	124	0	9105
APPROACH %'s :	21.17%	68.01%	10.62%	0.21%	8.26%	60.70%	30.51%	0.53%	20.60%	72.51%	3.74%	3.15%	11.01%	81.32%	7.67%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	299	1016	168	4	98	708	350	6	247	904	41	31	84	670	60	0	4686
PEAK HR FACTOR :	0.934	0.955	0.857	0.500	0.721	0.952	0.902	0.750	0.882	0.873	0.732	0.775	0.808	0.872	0.833	0.000	0.987
	0.976				0.946				0.891				0.881				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Magnolia Ave & W Wardlow Rd
City: Long Beach
Control: Signalized

Project ID: 20-020181-001
Date: 9/23/2020

Total

NS/EW Streets:	Magnolia Ave						Magnolia Ave						W Wardlow Rd						W Wardlow Rd						South Frontage Rd					North Frontage Rd					
AM	NORTHBOUND						SOUTHBOUND						EASTBOUND						WESTBOUND						NORTHBOUND2					EASTBOUND2					
	1	1	1	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NL2	NU2	SL	ST	SR	SU	ST2	SR2	EL	ET	ER	EU	ER2	EU2	WL	WT	WR	WU	WL2	WT2	N2L	N2L2	N2T2	N2R2	N2U2	E2R	E2L2	E2T2	E2R2	E2U2	TOTAL
7:00 AM	25	1	19	0	0	1	6	0	7	0	0	0	3	74	15	4	0	1	15	62	6	0	5	1	0	0	0	0	1	0	0	1	2	2	251
7:15 AM	15	4	14	0	0	0	7	1	7	0	0	0	1	67	9	5	0	1	19	61	4	1	2	2	0	0	0	2	2	0	0	1	3	5	233
7:30 AM	33	5	22	0	2	0	4	3	13	0	0	0	1	96	14	11	0	0	14	76	8	0	4	3	0	0	0	1	0	0	0	0	2	5	317
7:45 AM	41	0	28	0	3	0	13	4	14	0	0	0	5	84	23	14	0	1	22	82	3	0	3	1	0	1	0	0	2	0	0	1	2	2	349
8:00 AM	28	3	13	0	0	0	8	2	4	0	0	0	4	99	24	4	0	1	12	59	4	1	4	1	0	0	0	0	0	0	0	2	2	0	275
8:15 AM	25	3	16	0	1	0	13	5	7	0	0	1	2	86	15	8	0	1	23	78	4	0	1	3	0	0	0	0	1	0	0	2	1	2	298
8:30 AM	25	3	27	0	0	0	15	3	5	0	0	0	3	87	22	7	0	0	14	62	5	0	2	0	0	0	0	1	1	0	0	3	1	1	287
8:45 AM	21	1	19	0	1	0	9	5	3	0	0	0	1	87	23	5	0	0	31	64	4	1	5	1	0	0	0	1	2	0	0	3	1	2	290
	NL	NT	NR	NU	NL2	NU2	SL	ST	SR	SU	ST2	SR2	EL	ET	ER	EU	ER2	EU2	WL	WT	WR	WU	WL2	WT2	N2L	N2L2	N2T2	N2R2	N2U2	E2R	E2L2	E2T2	E2R2	E2U2	TOTAL
TOTAL VOLUMES :	213	20	158	0	7	1	75	23	60	0	0	1	20	680	145	58	0	5	150	544	38	3	26	12	0	1	0	5	9	0	0	13	14	19	2300
APPROACH %'s :	53.38%	5.01%	39.60%	0.00%	1.75%	0.25%	47.17%	14.47%	37.74%	0.00%	0.00%	0.63%	2.20%	74.89%	15.97%	6.39%	0.00%	0.55%	19.40%	70.38%	4.92%	0.39%	3.36%	1.55%	0.00%	6.67%	0.00%	33.33%	60.00%	0.00%	0.00%	28.26%	30.43%	41.30%	
PEAK HR :	07:30 AM - 08:30 AM																																		TOTAL
PEAK HR VOL :	127	11	79	0	6	0	38	14	38	0	0	1	12	365	76	37	0	3	71	295	19	1	12	8	0	1	0	1	3	0	0	5	7	9	1239
PEAK HR FACTOR :	0.774	0.550	0.705	0.000	0.500	0.000	0.731	0.700	0.679	0.000	0.000	0.250	0.600	0.922	0.792	0.661	0.000	0.750	0.772	0.899	0.594	0.250	0.750	0.667	0.000	0.250	0.000	0.250	0.375	0.000	0.000	0.625	0.875	0.450	0.888
	0.774						0.734						0.934						0.914						0.417										

PM	NORTHBOUND						SOUTHBOUND						EASTBOUND						WESTBOUND						NORTHBOUND2					EASTBOUND2					
	1	1	1	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NL2	NU2	SL	ST	SR	SU	ST2	SR2	EL	ET	ER	EU	ER2	EU2	WL	WT	WR	WU	WL2	WT2	N2L	N2L2	N2T2	N2R2	N2U2	E2R	E2L2	E2T2	E2R2	E2U2	TOTAL
4:00 PM	27	4	29	0	1	0	9	1	5	0	0	0	2	178	38	3	0	1	25	86	12	0	11	5	0	1	0	1	3	0	1	4	1	1	449
4:15 PM	25	9	28	0	2	0	3	5	4	0	0	0	6	142	37	3	0	1	22	104	13	0	8	6	0	0	0	0	4	0	0	3	0	1	426
4:30 PM	30	6	38	0	2	1	21	6	5	0	0	0	10	177	39	3	0	2	30	102	9	0	13	7	0	0	0	0	7	0	0	6	1	1	516
4:45 PM	29	10	33	0	2	2	8	3	3	0	0	0	6	212	41	3	0	3	25	104	11	0	12	9	0	0	1	0	5	0	0	3	3	2	530
5:00 PM	18	6	32	0	4	0	10	3	6	0	0	0	7	166	41	2	0	2	23	91	12	2	9	4	0	0	0	2	3	0	0	2	3	2	450
5:15 PM	38	10	31	0	3	0	11	1	5	0	0	0	3	206	42	5	0	4	40	112	14	0	7	3	0	0	0	1	5	1	0	3	2	2	549
5:30 PM	23	2	19	0	2	0	8	7	4	0	0	0	4	168	37	5	0	3	34	85	11	0	11	6	0	0	0	1	0	0	0	2	1	1	434
5:45 PM	34	4	28	0	1	0	7	1	5	0	1	0	8	150	45	5	0	3	35	103	17	1	8	1	0	0	0	0	3	0	0	4	2	2	468
	NL	NT	NR	NU	NL2	NU2	SL	ST	SR	SU	ST2	SR2	EL	ET	ER	EU	ER2	EU2	WL	WT	WR	WU	WL2	WT2	N2L	N2L2	N2T2	N2R2	N2U2	E2R	E2L2	E2T2	E2R2	E2U2	TOTAL
TOTAL VOLUMES :	224	51	238	0	17	3	77	27	37	0	1	0	46	1399	320	29	0	19	234	787	99	3	79	41	0	1	1	5	30	1	1	27	13	12	3822
APPROACH %'s :	42.03%	9.57%	44.65%	0.00%	3.19%	0.56%	54.23%	19.01%	26.06%	0.00%	0.70%	0.00%	2.54%	77.16%	17.65%	1.60%	0.00%	1.05%	18.83%	63.31%	7.96%	0.24%	6.36%	3.30%	0.00%	2.70%	2.70%	13.51%	81.08%	1.85%	1.85%	50.00%	24.07%	22.22%	
PEAK HR :	04:30 PM - 05:30 PM																																		TOTAL
PEAK HR VOL :	115	32	134	0	11	3	50	13	19	0	0	0	26	761	163	13	0	11	118	409	46	2	41	23	0	0	1	3	20	1	0	14	9	7	2045
PEAK HR FACTOR :	0.757	0.800	0.882	0.000	0.688	0.375	0.595	0.542	0.792	0.000	0.000	0.000	0.650	0.897	0.970	0.650	0.000	0.688	0.738	0.913	0.821	0.250	0.788	0.639	0.000	0.000	0.250	0.375	0.714	0.250	0.000	0.583	0.750	0.875	0.931
	0.899						0.641						0.919						0.908						0.857										

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pacific Pl & W Wardlow Rd
City: Long Beach
Control: Signalized

Project ID: 20-020181-002
Date: 9/23/2020

Total

NS/EW Streets:	Pacific Pl				Pacific Pl				W Wardlow Rd				W Wardlow Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	2	2	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	14	55	27	0	35	35	7	0	7	81	7	0	12	75	19	0	374
7:15 AM	9	52	33	0	27	29	11	0	7	79	12	0	12	67	27	0	365
7:30 AM	23	96	31	0	15	35	9	1	12	95	20	0	16	75	27	0	455
7:45 AM	24	65	22	0	18	27	7	0	7	96	15	0	17	74	34	0	406
8:00 AM	18	47	31	0	17	32	4	1	8	99	15	2	15	61	23	0	373
8:15 AM	19	66	27	0	14	34	7	2	9	96	18	2	12	77	24	0	407
8:30 AM	10	52	27	0	20	57	14	0	7	109	12	1	14	65	28	0	416
8:45 AM	14	48	27	0	17	66	17	0	8	81	22	0	16	70	23	0	409
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	131	481	225	0	163	315	76	4	65	736	121	5	114	564	205	0	3205
APPROACH %'s :	15.65%	57.47%	26.88%	0.00%	29.21%	56.45%	13.62%	0.72%	7.01%	79.40%	13.05%	0.54%	12.91%	63.87%	23.22%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	84	274	111	0	64	128	27	4	36	386	68	4	60	287	108	0	1641
PEAK HR FACTOR :	0.875	0.714	0.895	0.000	0.889	0.914	0.750	0.500	0.750	0.975	0.850	0.500	0.882	0.932	0.794	0.000	0.902
	0.782				0.929				0.972				0.910				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	2	2	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	18	59	38	0	36	46	15	1	9	180	27	0	20	102	22	0	573
4:15 PM	25	48	36	0	40	58	13	0	6	149	24	2	18	122	5	1	547
4:30 PM	22	55	43	0	34	49	9	0	9	207	27	1	35	123	21	0	635
4:45 PM	21	52	37	0	39	47	12	0	9	200	38	1	13	123	15	0	607
5:00 PM	36	56	52	0	26	61	9	0	7	174	40	1	22	108	31	0	623
5:15 PM	24	52	35	0	32	55	11	0	4	203	40	0	27	131	8	1	623
5:30 PM	23	53	29	0	26	82	10	1	10	159	35	0	26	117	13	1	585
5:45 PM	18	35	33	0	40	70	11	0	9	148	23	2	18	131	15	1	554
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	187	410	303	0	273	468	90	2	63	1420	254	7	179	957	130	4	4747
APPROACH %'s :	20.78%	45.56%	33.67%	0.00%	32.77%	56.18%	10.80%	0.24%	3.61%	81.42%	14.56%	0.40%	14.09%	75.35%	10.24%	0.31%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	103	215	167	0	131	212	41	0	29	784	145	3	97	485	75	1	2488
PEAK HR FACTOR :	0.715	0.960	0.803	0.000	0.840	0.869	0.854	0.000	0.806	0.947	0.906	0.750	0.693	0.926	0.605	0.250	0.980
	0.842				0.980				0.969				0.919				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Atlantic Ave & E Wardlow Rd
City: Long Beach
Control: Signalized

Project ID: 20-020181-003
Date: 9/23/2020

Total

NS/EW Streets:	Atlantic Ave				Atlantic Ave				E Wardlow Rd				E Wardlow Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	12	55	7	0	7	69	29	0	6	35	11	0	8	44	9	0	292
7:15 AM	17	60	8	0	6	103	25	0	10	41	5	0	13	59	3	0	350
7:30 AM	22	84	11	0	5	119	39	0	13	57	9	0	10	48	4	0	421
7:45 AM	22	110	4	0	11	149	39	0	20	43	10	0	13	76	8	0	505
8:00 AM	29	136	5	0	15	111	28	0	21	40	17	0	9	54	14	0	479
8:15 AM	16	121	8	0	11	149	27	0	12	54	17	0	12	60	11	0	498
8:30 AM	31	143	7	0	14	93	24	0	23	66	17	0	10	50	11	0	489
8:45 AM	24	110	9	0	10	127	26	0	26	44	20	0	7	46	10	0	459
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	173	819	59	0	79	920	237	0	131	380	106	0	82	437	70	0	3493
APPROACH %'s :	16.46%	77.93%	5.61%	0.00%	6.39%	74.43%	19.17%	0.00%	21.23%	61.59%	17.18%	0.00%	13.92%	74.19%	11.88%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	98	510	24	0	51	502	118	0	76	203	61	0	44	240	44	0	1971
PEAK HR FACTOR :	0.790	0.892	0.750	0.000	0.850	0.842	0.756	0.000	0.826	0.769	0.897	0.000	0.846	0.789	0.786	0.000	0.976
	0.873				0.843				0.802				0.845				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	36	215	6	0	16	176	45	0	38	107	22	0	17	68	15	0	761
4:15 PM	42	218	17	0	15	178	41	0	37	93	21	0	11	77	17	0	767
4:30 PM	40	197	11	0	12	164	45	0	46	116	27	0	12	82	16	0	768
4:45 PM	34	246	18	0	30	178	39	0	37	105	27	0	16	61	19	0	810
5:00 PM	34	210	12	0	23	187	44	0	35	126	28	0	16	76	16	0	807
5:15 PM	41	221	24	0	24	191	44	0	51	135	29	0	18	76	16	0	870
5:30 PM	38	190	15	0	14	170	38	0	32	94	27	0	8	78	23	0	727
5:45 PM	49	198	5	0	16	168	43	0	29	87	19	0	13	58	18	0	703
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	314	1695	108	0	150	1412	339	0	305	863	200	0	111	576	140	0	6213
APPROACH %'s :	14.83%	80.07%	5.10%	0.00%	7.89%	74.28%	17.83%	0.00%	22.30%	63.08%	14.62%	0.00%	13.42%	69.65%	16.93%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	149	874	65	0	89	720	172	0	169	482	111	0	62	295	67	0	3255
PEAK HR FACTOR :	0.909	0.888	0.677	0.000	0.742	0.942	0.956	0.000	0.828	0.893	0.957	0.000	0.861	0.899	0.882	0.000	0.935
	0.913				0.947				0.886				0.964				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Magnolia Ave & W Spring St
City: Long Beach
Control: Signalized

Project ID: 20-020181-004
Date: 9/23/2020

Total

NS/EW Streets:	Magnolia Ave				Magnolia Ave				W Spring St				W Spring St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	26	12	0	3	19	2	0	3	22	3	0	17	5	5	0	117
7:15 AM	1	20	10	0	4	21	1	0	5	12	0	0	19	11	3	0	107
7:30 AM	3	43	7	0	3	17	3	0	6	14	1	0	21	20	9	0	147
7:45 AM	1	53	16	0	10	26	1	0	3	25	3	0	14	15	7	0	174
8:00 AM	0	24	14	0	8	29	1	0	6	24	0	0	24	11	9	0	150
8:15 AM	1	29	22	0	5	25	1	0	7	26	0	0	20	13	4	0	153
8:30 AM	1	31	7	0	9	31	2	0	6	15	2	0	25	13	10	0	152
8:45 AM	0	26	16	0	7	42	3	0	3	21	4	0	13	8	5	0	148
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	7	252	104	0	49	210	14	0	39	159	13	0	153	96	52	0	1148
APPROACH %'s :	1.93%	69.42%	28.65%	0.00%	17.95%	76.92%	5.13%	0.00%	18.48%	75.36%	6.16%	0.00%	50.83%	31.89%	17.28%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	3	137	59	0	32	111	5	0	22	90	5	0	83	52	30	0	629
PEAK HR FACTOR :	0.750	0.646	0.670	0.000	0.800	0.895	0.625	0.000	0.786	0.865	0.417	0.000	0.830	0.867	0.750	0.000	0.904
		0.711				0.881				0.886				0.859			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	2	42	28	0	11	52	0	0	3	30	4	0	42	37	10	0	261
4:15 PM	2	47	42	0	16	47	4	0	7	35	3	0	32	31	13	0	279
4:30 PM	2	65	26	1	15	61	0	0	7	35	0	0	38	33	12	0	295
4:45 PM	0	45	30	0	8	55	4	0	2	32	1	0	47	33	19	0	276
5:00 PM	2	49	26	0	9	51	2	0	3	29	1	0	37	41	11	0	261
5:15 PM	1	65	34	0	13	58	5	0	4	30	1	0	55	27	17	0	310
5:30 PM	4	27	26	0	15	50	3	0	6	28	3	0	30	37	14	0	243
5:45 PM	2	52	20	0	8	62	1	0	5	26	2	0	37	36	13	0	264
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	15	392	232	1	95	436	19	0	37	245	15	0	318	275	109	0	2189
APPROACH %'s :	2.34%	61.25%	36.25%	0.16%	17.27%	79.27%	3.45%	0.00%	12.46%	82.49%	5.05%	0.00%	45.30%	39.17%	15.53%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	5	224	116	1	45	225	11	0	16	126	3	0	177	134	59	0	1142
PEAK HR FACTOR :	0.625	0.862	0.853	0.250	0.750	0.922	0.550	0.000	0.571	0.900	0.750	0.000	0.805	0.817	0.776	0.000	0.921
		0.865				0.924				0.863				0.934			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Pacific Ave & W Spring St
City: Long Beach
Control: Signalized

Project ID: 20-020181-005
Date: 9/23/2020

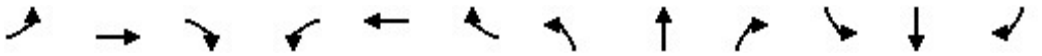
Total

NS/EW Streets:	Pacific Ave				Pacific Ave				W Spring St				W Spring St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	2	0	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	73	24	0	6	37	2	0	1	38	1	0	21	19	6	0	232
7:15 AM	3	71	40	0	9	43	0	0	3	31	2	0	22	37	12	0	273
7:30 AM	2	114	56	0	19	39	4	0	8	26	3	0	25	43	11	0	350
7:45 AM	4	95	44	0	14	53	2	0	2	49	5	0	27	40	8	0	343
8:00 AM	6	74	35	1	8	49	1	0	5	49	3	0	28	38	12	0	309
8:15 AM	6	78	42	0	18	44	1	0	1	54	3	0	27	37	14	0	325
8:30 AM	7	61	37	0	12	66	2	0	3	37	6	0	31	44	8	0	314
8:45 AM	4	68	31	0	17	92	0	0	2	38	3	0	31	25	11	0	322
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	36	634	309	1	103	423	12	0	25	322	26	0	212	283	82	0	2468
APPROACH %'s :	3.67%	64.69%	31.53%	0.10%	19.14%	78.62%	2.23%	0.00%	6.70%	86.33%	6.97%	0.00%	36.74%	49.05%	14.21%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	18	361	177	1	59	185	8	0	16	178	14	0	107	158	45	0	1327
PEAK HR FACTOR :	0.750	0.792	0.790	0.250	0.776	0.873	0.500	0.000	0.500	0.824	0.700	0.000	0.955	0.919	0.804	0.000	0.948
	0.810				0.913				0.897				0.981				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	2	0	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	8	87	74	0	14	67	11	0	4	70	6	0	40	90	11	0	482
4:15 PM	14	94	62	0	17	73	11	0	5	79	7	0	32	77	11	0	482
4:30 PM	6	80	83	0	20	77	8	0	8	74	9	0	37	87	19	0	508
4:45 PM	14	105	86	1	22	79	5	0	4	72	8	1	33	98	17	0	545
5:00 PM	14	100	59	0	18	98	6	0	7	62	4	0	36	95	26	0	525
5:15 PM	4	92	64	0	16	92	6	0	1	86	4	0	34	92	15	0	506
5:30 PM	7	81	53	0	17	103	5	0	7	63	6	0	47	91	15	0	495
5:45 PM	8	71	56	0	14	93	4	0	4	46	0	0	36	80	10	0	422
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	75	710	537	1	138	682	56	0	40	552	44	1	295	710	124	0	3965
APPROACH %'s :	5.67%	53.67%	40.59%	0.08%	15.75%	77.85%	6.39%	0.00%	6.28%	86.66%	6.91%	0.16%	26.13%	62.89%	10.98%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	38	377	292	1	76	346	25	0	20	294	25	1	140	372	77	0	2084
PEAK HR FACTOR :	0.679	0.898	0.849	0.250	0.864	0.883	0.781	0.000	0.625	0.855	0.694	0.250	0.946	0.949	0.740	0.000	0.956
	0.859				0.916				0.934				0.938				

APPENDIX C – LEVEL OF SERVICE WORKSHEETS

Existing (2020) Baseline Conditions AM and PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	182	214	184	416	548	465	616	162	193	441	443
Future Volume (veh/h)	113	182	214	184	416	548	465	616	162	193	441	443
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	122	196	14	198	447	0	500	662	43	208	474	372
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	393	175	336	794		1016	1459	651	286	672	436
Arrive On Green	0.09	0.11	0.11	0.19	0.22	0.00	0.29	0.41	0.41	0.08	0.19	0.19
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	122	196	14	198	447	0	500	662	43	208	474	372
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	6.1	4.7	0.7	9.1	10.1	0.0	10.7	12.1	0.7	5.3	11.2	9.6
Cycle Q Clear(g_c), s	6.1	4.7	0.7	9.1	10.1	0.0	10.7	12.1	0.7	5.3	11.2	9.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	393	175	336	794		1016	1459	651	286	672	436
V/C Ratio(X)	0.80	0.50	0.08	0.59	0.56		0.49	0.45	0.07	0.73	0.71	0.85
Avail Cap(c_a), veh/h	218	794	354	336	794		1016	1459	651	538	1070	613
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	37.7	35.9	33.3	31.1	0.0	26.2	19.2	3.9	40.3	34.1	13.9
Incr Delay (d2), s/veh	8.3	1.0	0.2	1.9	2.9	0.0	0.1	1.0	0.2	1.3	6.1	18.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	2.0	0.3	4.0	4.5	0.0	4.3	4.9	0.5	2.2	5.3	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	38.7	36.1	35.2	33.9	0.0	26.4	20.2	4.1	41.6	40.3	32.8
LnGrp LOS	D	D	D	D	C		C	C	A	D	D	C
Approach Vol, veh/h		332			645	A		1205			1054	
Approach Delay, s/veh		42.2			34.3			22.2			37.9	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.9	14.8	31.4	21.9	11.7	25.0	11.4	41.8
Change Period (Y+Rc), s	4.9	* 4.9	4.9	* 4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	11.0	* 20	14.0	* 27	11.0	20.1	14.0	27.1
Max Q Clear Time (g_c+I1), s	11.1	6.7	12.7	13.2	8.1	12.1	7.3	14.1
Green Ext Time (p_c), s	0.0	0.9	0.2	3.8	0.0	1.7	0.2	3.7

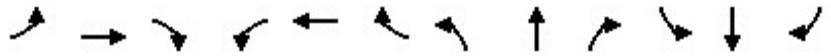
Intersection Summary	
HCM 6th Ctrl Delay	31.8
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	537	112	124	446	28	196	17	117	56	21	58
Future Volume (veh/h)	77	537	112	124	446	28	196	17	117	56	21	58
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	83	577	101	133	480	26	211	18	21	60	23	29
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	649	1860	325	565	2155	116	320	324	275	186	73	69
Arrive On Green	0.03	0.62	0.62	0.05	0.63	0.63	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	3024	528	1781	3429	185	1352	1870	1585	717	422	398
Grp Volume(v), veh/h	83	338	340	133	248	258	211	18	21	112	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1775	1781	1777	1837	1352	1870	1585	1536	0	0
Q Serve(g_s), s	1.5	8.1	8.2	2.4	5.4	5.5	7.7	0.7	1.0	3.9	0.0	0.0
Cycle Q Clear(g_c), s	1.5	8.1	8.2	2.4	5.4	5.5	13.4	0.7	1.0	5.6	0.0	0.0
Prop In Lane	1.00		0.30	1.00		0.10	1.00		1.00	0.54		0.26
Lane Grp Cap(c), veh/h	649	1093	1092	565	1117	1155	320	324	275	328	0	0
V/C Ratio(X)	0.13	0.31	0.31	0.24	0.22	0.22	0.66	0.06	0.08	0.34	0.00	0.00
Avail Cap(c_a), veh/h	756	1093	1092	647	1117	1155	425	470	398	445	0	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	0.79	0.79	0.79	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.9	8.2	8.2	6.0	7.2	7.2	36.2	31.0	31.2	33.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.7	0.1	0.4	0.4	0.9	0.0	0.0	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	0.5	2.8	2.9	0.7	1.8	1.9	4.5	0.3	0.4	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.9	9.0	9.0	6.0	7.6	7.6	37.1	31.1	31.2	33.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	C	C	C	A	A
Approach Vol, veh/h		761			639			250			112	
Approach Delay, s/veh		8.6			7.3			36.1			33.2	
Approach LOS		A			A			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	61.2		21.0	6.6	62.4		21.0				
Change Period (Y+Rc), s	3.5	5.8		5.4	3.5	5.8		5.4				
Max Green Setting (Gmax), s	8.5	44.2		22.6	8.5	44.2		22.6				
Max Q Clear Time (g_c+I1), s	4.4	10.2		7.6	3.5	7.5		15.4				
Green Ext Time (p_c), s	0.1	4.3		0.3	0.0	3.0		0.3				

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

Notes

User approved pedestrian interval to be less than phase max green.

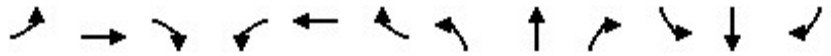
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	568	100	89	422	159	124	403	164	100	189	40
Future Volume (veh/h)	59	568	100	89	422	159	124	403	164	100	189	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	63	611	95	96	454	136	133	433	62	108	203	6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	166	979	152	124	739	220	172	703	313	195	560	250
Arrive On Green	0.09	0.32	0.32	0.07	0.27	0.27	0.10	0.20	0.20	0.06	0.16	0.16
Sat Flow, veh/h	1781	3083	478	1781	2700	803	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	63	352	354	96	298	292	133	433	62	108	203	6
Grp Sat Flow(s),veh/h/ln	1781	1777	1784	1781	1777	1726	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.7	8.4	8.5	2.7	7.3	7.4	3.7	5.6	1.6	1.5	2.6	0.1
Cycle Q Clear(g_c), s	1.7	8.4	8.5	2.7	7.3	7.4	3.7	5.6	1.6	1.5	2.6	0.1
Prop In Lane	1.00		0.27	1.00		0.46	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	166	564	566	124	486	472	172	703	313	195	560	250
V/C Ratio(X)	0.38	0.62	0.63	0.78	0.61	0.62	0.77	0.62	0.20	0.55	0.36	0.02
Avail Cap(c_a), veh/h	533	1418	1424	533	1240	1205	497	2268	1012	1034	2268	1012
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	14.6	14.6	22.9	15.9	15.9	22.1	18.4	16.8	23.0	18.9	7.6
Incr Delay (d2), s/veh	0.5	1.4	1.4	3.9	1.5	1.6	2.8	0.7	0.2	0.9	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.9	2.9	1.1	2.6	2.6	1.5	2.0	0.5	0.6	0.9	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.9	15.9	15.9	26.8	17.4	17.5	24.9	19.0	17.0	24.0	19.2	7.6
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	A
Approach Vol, veh/h		769			686			628			317	
Approach Delay, s/veh		16.4			18.8			20.1			20.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	20.9	8.8	12.9	9.7	18.7	6.8	14.9
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	5.0	* 5	4.0	5.0
Max Green Setting (Gmax), s	15.0	40.0	14.0	32.0	15.0	* 35	15.0	32.0
Max Q Clear Time (g_c+I1), s	4.7	10.5	5.7	4.6	3.7	9.4	3.5	7.6
Green Ext Time (p_c), s	0.1	5.4	0.1	1.0	0.0	4.3	0.1	2.3

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

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



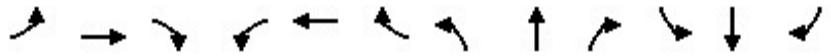
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	532	35	85	712	35	288	859	128	61	790	415
Future Volume (veh/h)	291	532	35	85	712	35	288	859	128	61	790	415
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	313	572	34	91	766	35	310	924	57	66	849	312
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	331	714	42	405	903	41	335	1328	592	213	940	419
Arrive On Green	0.19	0.21	0.21	0.23	0.26	0.26	0.15	0.37	0.37	0.04	0.26	0.26
Sat Flow, veh/h	1781	3408	202	1781	3461	158	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	313	298	308	91	393	408	310	924	57	66	849	312
Grp Sat Flow(s),veh/h/ln	1781	1777	1834	1781	1777	1842	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	22.4	20.6	20.6	5.4	27.1	27.1	16.9	28.4	1.5	3.5	29.8	23.3
Cycle Q Clear(g_c), s	22.4	20.6	20.6	5.4	27.1	27.1	16.9	28.4	1.5	3.5	29.8	23.3
Prop In Lane	1.00		0.11	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	331	372	384	405	464	481	335	1328	592	213	940	419
V/C Ratio(X)	0.95	0.80	0.80	0.22	0.85	0.85	0.92	0.70	0.10	0.31	0.90	0.74
Avail Cap(c_a), veh/h	331	546	564	405	546	566	403	1328	592	378	966	431
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	48.5	48.5	40.6	45.3	45.3	34.8	34.2	6.9	33.5	45.9	43.5
Incr Delay (d2), s/veh	35.0	6.7	6.6	0.1	11.4	11.1	22.6	1.8	0.1	0.3	11.7	7.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	9.6	10.0	2.4	13.2	13.6	9.3	12.4	1.1	1.5	14.5	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.0	55.2	55.1	40.8	56.7	56.4	57.5	36.0	7.0	33.8	57.6	50.8
LnGrp LOS	F	E	E	D	E	E	E	D	A	C	E	D
Approach Vol, veh/h		919			892			1291			1227	
Approach Delay, s/veh		66.0			54.9			39.9			54.6	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.6	32.4	23.1	39.1	28.0	39.0	9.0	53.2
Change Period (Y+Rc), s	5.3	* 5.3	4.0	4.9	4.0	5.3	4.0	4.9
Max Green Setting (Gmax), s	18.3	* 40	24.0	35.1	24.0	39.7	17.0	35.1
Max Q Clear Time (g_c+I1), s	17.4	22.6	18.9	31.8	24.4	29.1	5.5	30.4
Green Ext Time (p_c), s	0.1	4.4	0.2	2.3	0.0	4.6	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	52.7
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	299	90	65	353	65	145	750	36	75	738	174
Future Volume (veh/h)	112	299	90	65	353	65	145	750	36	75	738	174
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	120	322	53	70	380	46	156	806	35	81	794	158
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	563	92	90	536	64	143	1630	71	104	1324	263
Arrive On Green	0.07	0.18	0.18	0.05	0.17	0.17	0.08	0.47	0.47	0.06	0.45	0.45
Sat Flow, veh/h	1781	3059	498	1781	3194	384	1781	3469	151	1781	2954	588
Grp Volume(v), veh/h	120	186	189	70	210	216	156	413	428	81	478	474
Grp Sat Flow(s),veh/h/ln	1781	1777	1781	1781	1777	1801	1781	1777	1843	1781	1777	1765
Q Serve(g_s), s	5.0	7.1	7.3	2.9	8.4	8.5	6.0	12.0	12.0	3.4	15.2	15.2
Cycle Q Clear(g_c), s	5.0	7.1	7.3	2.9	8.4	8.5	6.0	12.0	12.0	3.4	15.2	15.2
Prop In Lane	1.00		0.28	1.00		0.21	1.00		0.08	1.00		0.33
Lane Grp Cap(c), veh/h	119	327	328	90	298	302	143	835	866	104	796	791
V/C Ratio(X)	1.01	0.57	0.58	0.78	0.71	0.71	1.09	0.49	0.49	0.78	0.60	0.60
Avail Cap(c_a), veh/h	119	521	522	119	521	528	143	835	866	143	796	791
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)	0.72	0.72	0.72	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	27.9	27.9	35.2	29.5	29.5	34.5	13.7	13.7	34.8	15.6	15.6
Incr Delay (d2), s/veh	72.8	1.3	1.4	17.5	3.7	3.8	103.0	2.1	2.0	13.5	3.3	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	2.9	3.0	1.6	3.6	3.7	6.6	4.9	5.0	1.8	6.3	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	107.8	29.2	29.3	52.7	33.1	33.3	137.5	15.8	15.7	48.3	18.9	19.0
LnGrp LOS	F	C	C	D	C	C	F	B	B	D	B	B
Approach Vol, veh/h		495			496			997			1033	
Approach Delay, s/veh		48.3			36.0			34.8			21.3	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	40.1	7.8	18.7	10.0	38.5	9.0	17.5
Change Period (Y+Rc), s	4.0	4.9	4.0	4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	6.0	24.2	5.0	22.0	6.0	24.2	5.0	22.0
Max Q Clear Time (g_c+I1), s	5.4	14.0	4.9	9.3	8.0	17.2	7.0	10.5
Green Ext Time (p_c), s	0.0	4.9	0.0	1.9	0.0	4.2	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

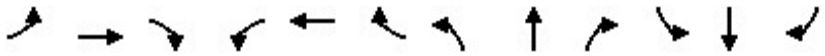
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	133	8	123	77	45	5	202	87	48	164	8
Future Volume (veh/h)	33	133	8	123	77	45	5	202	87	48	164	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	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	35	143	7	132	83	29	5	217	62	52	176	5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	902	42	920	843	295	285	319	91	206	412	12
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	257	1417	66	1237	1324	463	1203	1399	400	1100	1810	51
Grp Volume(v), veh/h	185	0	0	132	0	112	5	0	279	52	0	181
Grp Sat Flow(s),veh/h/ln	1740	0	0	1237	0	1787	1203	0	1798	1100	0	1861
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.6	0.2	0.0	9.2	2.9	0.0	5.4
Cycle Q Clear(g_c), s	2.6	0.0	0.0	1.9	0.0	1.6	5.6	0.0	9.2	12.2	0.0	5.4
Prop In Lane	0.19		0.04	1.00		0.26	1.00		0.22	1.00		0.03
Lane Grp Cap(c), veh/h	1174	0	0	920	0	1138	285	0	410	206	0	424
V/C Ratio(X)	0.16	0.00	0.00	0.14	0.00	0.10	0.02	0.00	0.68	0.25	0.00	0.43
Avail Cap(c_a), veh/h	1174	0	0	920	0	1138	488	0	714	391	0	739
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	0.00	0.00	0.79	0.00	0.79	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	0.0	0.0	4.6	0.0	4.6	23.9	0.0	22.9	28.5	0.0	21.5
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.3	0.0	0.1	0.0	0.0	2.0	0.6	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.6	0.0	0.5	0.1	0.0	3.9	0.8	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.1	0.0	0.0	4.9	0.0	4.7	23.9	0.0	24.9	29.1	0.0	22.1
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		185			244			284			233	
Approach Delay, s/veh		5.1			4.8			24.9			23.7	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	46.0	19.0	46.0	19.0
Change Period (Y+Rc), s	4.6	* 4.2	4.6	* 4.2
Max Green Setting (Gmax), s	30.4	* 26	30.4	* 26
Max Q Clear Time (g_c+I1), s	4.6	14.2	3.9	11.2
Green Ext Time (p_c), s	1.5	0.9	1.6	1.4

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	262	21	158	233	67	28	531	261	87	272	12
Future Volume (veh/h)	24	262	21	158	233	67	28	531	261	87	272	12
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	26	282	17	170	251	50	30	571	151	94	292	13
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	287	528	32	335	458	91	646	1922	857	442	1875	83
Arrive On Green	0.60	0.60	0.60	0.30	0.30	0.30	0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	1078	1746	105	1080	1514	302	1074	3554	1585	731	3466	154
Grp Volume(v), veh/h	26	0	299	170	0	301	30	571	151	94	149	156
Grp Sat Flow(s),veh/h/ln	1078	0	1851	1080	0	1816	1074	1777	1585	731	1777	1843
Q Serve(g_s), s	1.1	0.0	6.1	9.6	0.0	9.0	0.9	5.7	3.1	5.2	2.7	2.8
Cycle Q Clear(g_c), s	10.1	0.0	6.1	15.8	0.0	9.0	3.7	5.7	3.1	11.0	2.7	2.8
Prop In Lane	1.00		0.06	1.00		0.17	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	287	0	559	335	0	549	646	1922	857	442	961	997
V/C Ratio(X)	0.09	0.00	0.53	0.51	0.00	0.55	0.05	0.30	0.18	0.21	0.16	0.16
Avail Cap(c_a), veh/h	427	0	800	476	0	785	646	1922	857	442	961	997
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)	0.99	0.00	0.99	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.2	0.0	10.2	24.2	0.0	19.0	8.4	8.2	7.6	11.2	7.5	7.5
Incr Delay (d2), s/veh	0.1	0.0	0.8	1.2	0.0	0.9	0.1	0.4	0.4	1.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.9	2.4	0.0	3.6	0.2	1.9	1.0	0.9	0.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	0.0	11.0	25.4	0.0	19.8	8.5	8.6	8.0	12.3	7.8	7.8
LnGrp LOS	B	A	B	C	A	B	A	A	A	B	A	A
Approach Vol, veh/h		325			471			752			399	
Approach Delay, s/veh		11.2			21.8			8.4			8.9	
Approach LOS		B			C			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	40.5	24.5	40.5	24.5
Change Period (Y+Rc), s	5.3	* 4.9	5.3	* 4.9
Max Green Setting (Gmax), s	26.7	* 28	26.7	* 28
Max Q Clear Time (g_c+I1), s	7.7	12.1	13.0	17.8
Green Ext Time (p_c), s	5.9	1.7	2.7	1.9

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

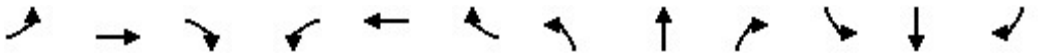
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑				↱			↱
Traffic Vol, veh/h	0	2000	0	0	0	0	0	0	200	0	0	0
Future Vol, veh/h	0	2000	0	0	0	0	0	0	200	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Yield	Yield	Yield	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2151	0	0	0	0	0	0	215	0	0	0

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	-	-	-	0			-	-	1
Stage 1	-	-	-	-	-	-			-	-	-
Stage 2	-	-	-	-	-	-			-	-	-
Critical Hdwy	-	-	-	-	-	-			-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			-	-	-
Follow-up Hdwy	-	-	-	-	-	-			-	-	3.32
Pot Cap-1 Maneuver	0	-	0	0	-	0			0	0	1083
Stage 1	0	-	0	0	-	0			0	0	-
Stage 2	0	-	0	0	-	0			0	0	-
Platoon blocked, %		-			-						
Mov Cap-1 Maneuver	-	-	-	-	-	-			-	0	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-			-	0	-
Stage 1	-	-	-	-	-	-			-	0	-
Stage 2	-	-	-	-	-	-			-	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	611	288	171	257	176	316	538	208	496	825	837
Future Volume (veh/h)	68	611	288	171	257	176	316	538	208	496	825	837
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	72	643	55	180	271	0	333	566	58	522	868	794
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	741	330	213	1017		563	1096	489	538	1034	544
Arrive On Green	0.05	0.21	0.21	0.12	0.29	0.00	0.16	0.31	0.31	0.16	0.29	0.29
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	72	643	55	180	271	0	333	566	58	522	868	794
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	3.6	15.7	2.6	8.9	5.3	0.0	8.0	11.8	1.6	13.5	20.6	21.5
Cycle Q Clear(g_c), s	3.6	15.7	2.6	8.9	5.3	0.0	8.0	11.8	1.6	13.5	20.6	21.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	741	330	213	1017		563	1096	489	538	1034	544
V/C Ratio(X)	0.78	0.87	0.17	0.84	0.27		0.59	0.52	0.12	0.97	0.84	1.46
Avail Cap(c_a), veh/h	218	794	354	218	1017		563	1096	489	538	1070	560
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	34.4	29.2	38.8	24.8	0.0	34.9	25.6	10.0	37.8	29.9	16.7
Incr Delay (d2), s/veh	5.1	9.7	0.2	23.2	0.6	0.0	1.1	1.7	0.5	31.3	8.2	216.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	7.5	1.0	5.2	2.3	0.0	3.4	5.0	0.9	7.9	9.6	39.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	44.1	29.4	62.0	25.5	0.0	36.0	27.3	10.5	69.1	38.1	233.4
LnGrp LOS	D	D	C	E	C		D	C	B	E	D	F
Approach Vol, veh/h		770			451	A		957			2184	
Approach Delay, s/veh		43.3			40.1			29.4			116.5	
Approach LOS		D			D			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	23.7	19.6	31.1	8.7	30.7	18.0	32.7
Change Period (Y+Rc), s	4.9	* 4.9	4.9	* 4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	11.0	* 20	14.0	* 27	11.0	20.1	14.0	27.1
Max Q Clear Time (g_c+I1), s	10.9	17.7	10.0	23.5	5.6	7.3	15.5	13.8
Green Ext Time (p_c), s	0.0	1.0	0.3	2.7	0.0	1.3	0.0	3.2

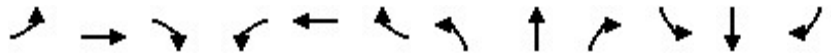
Intersection Summary	
HCM 6th Ctrl Delay	76.6
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	1119	240	237	636	68	190	48	197	74	20	28
Future Volume (veh/h)	74	1119	240	237	636	68	190	48	197	74	20	28
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	78	1178	232	249	669	65	200	51	31	78	21	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	533	1772	347	335	2085	202	310	310	263	206	54	29
Arrive On Green	0.03	0.60	0.60	0.07	0.64	0.64	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	2963	580	1781	3272	318	1372	1870	1585	838	324	176
Grp Volume(v), veh/h	78	703	707	249	363	371	200	51	31	114	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1766	1781	1777	1813	1372	1870	1585	1338	0	0
Q Serve(g_s), s	1.5	23.7	24.1	4.5	8.4	8.4	5.1	2.1	1.5	5.4	0.0	0.0
Cycle Q Clear(g_c), s	1.5	23.7	24.1	4.5	8.4	8.4	12.6	2.1	1.5	7.5	0.0	0.0
Prop In Lane	1.00		0.33	1.00		0.18	1.00		1.00	0.68		0.13
Lane Grp Cap(c), veh/h	533	1063	1056	335	1132	1155	310	310	263	289	0	0
V/C Ratio(X)	0.15	0.66	0.67	0.74	0.32	0.32	0.64	0.16	0.12	0.39	0.00	0.00
Avail Cap(c_a), veh/h	641	1063	1056	374	1132	1155	427	470	398	411	0	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	0.79	0.79	0.79	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	12.0	12.1	14.7	7.5	7.5	36.5	32.2	31.9	34.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.2	3.4	4.5	0.6	0.6	0.8	0.1	0.1	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	0.5	8.8	8.9	3.2	2.8	2.9	4.3	0.9	0.6	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	15.3	15.5	19.3	8.0	8.0	37.4	32.3	32.0	35.0	0.0	0.0
LnGrp LOS	A	B	B	B	A	A	D	C	C	D	A	A
Approach Vol, veh/h		1488			983			282			114	
Approach Delay, s/veh		14.9			10.9			35.9			35.0	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.1	59.6		20.3	6.5	63.1		20.3
Change Period (Y+Rc), s	3.5	5.8		5.4	3.5	5.8		5.4
Max Green Setting (Gmax), s	8.5	44.2		22.6	8.5	44.2		22.6
Max Q Clear Time (g_c+I1), s	6.5	26.1		9.5	3.5	10.4		14.6
Green Ext Time (p_c), s	0.1	9.1		0.3	0.0	4.7		0.3

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

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	1153	214	145	713	111	152	317	246	193	312	61
Future Volume (veh/h)	48	1153	214	145	713	111	152	317	246	193	312	61
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	51	1214	213	153	751	108	160	334	36	203	328	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	422	1352	236	188	947	136	195	559	249	284	462	206
Arrive On Green	0.24	0.45	0.45	0.11	0.30	0.30	0.11	0.16	0.16	0.08	0.13	0.13
Sat Flow, veh/h	1781	3025	527	1781	3118	448	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	51	710	717	153	428	431	160	334	36	203	328	7
Grp Sat Flow(s),veh/h/ln	1781	1777	1775	1781	1777	1790	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.9	31.8	32.4	7.3	19.1	19.1	7.6	7.6	1.7	5.0	7.6	0.2
Cycle Q Clear(g_c), s	1.9	31.8	32.4	7.3	19.1	19.1	7.6	7.6	1.7	5.0	7.6	0.2
Prop In Lane	1.00		0.30	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	422	794	793	188	539	543	195	559	249	284	462	206
V/C Ratio(X)	0.12	0.89	0.90	0.81	0.79	0.79	0.82	0.60	0.14	0.72	0.71	0.03
Avail Cap(c_a), veh/h	422	822	822	309	720	725	289	1316	587	600	1316	587
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	22.0	22.2	37.8	27.6	27.6	37.6	33.9	31.4	38.7	36.0	11.6
Incr Delay (d2), s/veh	0.0	12.1	13.3	3.2	4.9	4.9	7.0	0.8	0.2	1.3	1.5	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	14.4	14.9	3.2	8.3	8.3	3.5	3.2	0.6	2.1	3.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.9	34.2	35.4	41.1	32.5	32.5	44.6	34.6	31.6	39.9	37.5	11.7
LnGrp LOS	C	C	D	D	C	C	D	C	C	D	D	B
Approach Vol, veh/h		1478			1012			530			538	
Approach Delay, s/veh		34.5			33.8			37.4			38.1	
Approach LOS		C			C			D			D	

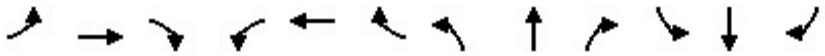
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	43.6	13.5	16.2	25.5	31.2	11.1	18.6
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	5.0	* 5	4.0	5.0
Max Green Setting (Gmax), s	15.0	40.0	14.0	32.0	15.0	* 35	15.0	32.0
Max Q Clear Time (g_c+I1), s	9.3	34.4	9.6	9.6	3.9	21.1	7.0	9.6
Green Ext Time (p_c), s	0.1	4.2	0.1	1.6	0.0	5.1	0.2	1.7

Intersection Summary	
HCM 6th Ctrl Delay	35.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	301	978	45	91	725	65	328	1099	182	113	766	379
Future Volume (veh/h)	301	978	45	91	725	65	328	1099	182	113	766	379
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	317	1029	44	96	763	63	345	1157	99	119	806	274
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	339	1205	52	170	871	72	366	1316	587	161	874	390
Arrive On Green	0.19	0.35	0.35	0.10	0.26	0.26	0.17	0.37	0.37	0.04	0.25	0.25
Sat Flow, veh/h	1781	3472	148	1781	3323	274	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	317	527	546	96	408	418	345	1157	99	119	806	274
Grp Sat Flow(s),veh/h/ln	1781	1777	1844	1781	1777	1821	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	23.9	37.5	37.5	7.0	30.0	30.0	21.0	41.5	4.2	6.0	30.2	21.5
Cycle Q Clear(g_c), s	23.9	37.5	37.5	7.0	30.0	30.0	21.0	41.5	4.2	6.0	30.2	21.5
Prop In Lane	1.00		0.08	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	339	617	640	170	466	477	366	1316	587	161	874	390
V/C Ratio(X)	0.94	0.85	0.85	0.56	0.88	0.88	0.94	0.88	0.17	0.74	0.92	0.70
Avail Cap(c_a), veh/h	339	712	739	170	517	530	366	1331	594	161	888	396
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.4	41.3	41.3	59.0	48.2	48.2	39.0	40.1	15.3	43.0	50.2	46.9
Incr Delay (d2), s/veh	32.3	9.5	9.2	2.6	15.1	14.9	32.2	7.2	0.2	14.9	15.0	6.0
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	13.6	17.6	18.2	3.3	15.0	15.3	12.3	19.1	2.2	1.8	15.1	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.8	50.9	50.6	61.6	63.3	63.1	71.2	47.3	15.5	58.0	65.2	52.9
LnGrp LOS	F	D	D	E	E	E	E	D	B	E	E	D
Approach Vol, veh/h		1390			922			1601			1199	
Approach Delay, s/veh		58.9			63.1			50.5			61.6	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.4	52.6	27.0	38.4	29.9	41.1	10.0	55.4
Change Period (Y+Rc), s	5.3	* 5.3	4.0	4.9	4.0	5.3	4.0	4.9
Max Green Setting (Gmax), s	13.0	* 55	23.0	34.1	26.0	39.7	6.0	51.1
Max Q Clear Time (g_c+I1), s	9.0	39.5	23.0	32.2	25.9	32.0	8.0	43.5
Green Ext Time (p_c), s	0.0	7.8	0.0	1.4	0.0	3.8	0.0	5.5

Intersection Summary	
HCM 6th Ctrl Delay	57.7
HCM 6th LOS	E

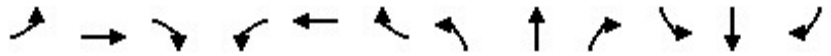
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	249	709	164	92	434	99	220	1285	96	131	1059	253
Future Volume (veh/h)	249	709	164	92	434	99	220	1285	96	131	1059	253
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	262	746	145	97	457	77	232	1353	94	138	1115	237
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	839	163	119	861	144	119	1214	84	95	1012	214
Arrive On Green	0.07	0.28	0.28	0.07	0.28	0.28	0.07	0.36	0.36	0.05	0.35	0.35
Sat Flow, veh/h	1781	2967	577	1781	3045	510	1781	3372	234	1781	2919	617
Grp Volume(v), veh/h	262	447	444	97	266	268	232	711	736	138	676	676
Grp Sat Flow(s),veh/h/ln	1781	1777	1767	1781	1777	1779	1781	1777	1828	1781	1777	1759
Q Serve(g_s), s	5.0	18.1	18.1	4.0	9.5	9.6	5.0	27.0	27.0	4.0	26.0	26.0
Cycle Q Clear(g_c), s	5.0	18.1	18.1	4.0	9.5	9.6	5.0	27.0	27.0	4.0	26.0	26.0
Prop In Lane	1.00		0.33	1.00		0.29	1.00		0.13	1.00		0.35
Lane Grp Cap(c), veh/h	119	502	499	119	502	503	119	640	658	95	616	610
V/C Ratio(X)	2.21	0.89	0.89	0.82	0.53	0.53	1.95	1.11	1.12	1.45	1.10	1.11
Avail Cap(c_a), veh/h	119	521	518	119	521	522	119	640	658	95	616	610
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)	0.52	0.52	0.52	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	25.8	25.8	34.5	22.7	22.7	35.0	24.0	24.0	35.5	24.5	24.5
Incr Delay (d2), s/veh	556.9	9.9	9.9	32.9	1.1	1.2	458.2	70.3	72.1	252.7	65.9	69.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.4	8.3	8.3	2.7	3.8	3.8	17.2	22.9	23.9	8.4	21.4	21.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	591.9	35.6	35.7	67.5	23.8	23.9	493.2	94.3	96.1	288.2	90.4	94.2
LnGrp LOS	F	D	D	E	C	C	F	F	F	F	F	F
Approach Vol, veh/h		1153			631			1679			1490	
Approach Delay, s/veh		162.1			30.5			150.2			110.4	
Approach LOS		F			C			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	31.9	9.0	26.1	9.0	30.9	9.0	26.1
Change Period (Y+Rc), s	4.0	4.9	4.0	4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	4.0	26.2	5.0	22.0	5.0	25.2	5.0	22.0
Max Q Clear Time (g_c+I1), s	6.0	29.0	6.0	20.1	7.0	28.0	7.0	11.6
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.0	0.0	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	125.8
HCM 6th LOS	F



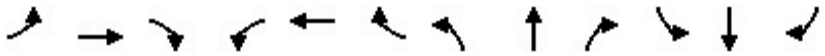
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	186	5	261	197	87	9	330	171	67	331	17
Future Volume (veh/h)	24	186	5	261	197	87	9	330	171	67	331	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	25	196	0	275	207	65	9	347	173	71	348	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	820	0	714	667	209	352	443	221	212	703	0
Arrive On Green	0.49	0.49	0.00	0.16	0.16	0.16	0.38	0.38	0.38	0.38	0.38	0.00
Sat Flow, veh/h	114	1678	0	1187	1365	429	1033	1178	587	882	1870	0
Grp Volume(v), veh/h	221	0	0	275	0	272	9	0	520	71	348	0
Grp Sat Flow(s),veh/h/ln	1792	0	0	1187	0	1793	1033	0	1765	882	1870	0
Q Serve(g_s), s	0.0	0.0	0.0	7.8	0.0	8.7	0.4	0.0	16.9	5.0	9.3	0.0
Cycle Q Clear(g_c), s	4.5	0.0	0.0	12.3	0.0	8.7	9.7	0.0	16.9	22.0	9.3	0.0
Prop In Lane	0.11		0.00	1.00		0.24	1.00		0.33	1.00		0.00
Lane Grp Cap(c), veh/h	937	0	0	714	0	876	352	0	663	212	703	0
V/C Ratio(X)	0.24	0.00	0.00	0.38	0.00	0.31	0.03	0.00	0.78	0.33	0.49	0.00
Avail Cap(c_a), veh/h	937	0	0	714	0	876	373	0	700	231	742	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.46	0.00	0.46	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.6	0.0	0.0	18.7	0.0	17.6	19.3	0.0	17.9	27.7	15.6	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.7	0.0	0.4	0.0	0.0	5.6	0.9	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	4.3	0.0	3.9	0.1	0.0	7.2	1.1	3.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.2	0.0	0.0	19.5	0.0	18.0	19.3	0.0	23.5	28.6	16.1	0.0
LnGrp LOS	B	A	A	B	A	B	B	A	C	C	B	A
Approach Vol, veh/h		221			547			529			419	
Approach Delay, s/veh		10.2			18.7			23.4			18.2	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	36.4	28.6	36.4	28.6
Change Period (Y+Rc), s	4.6	* 4.2	4.6	* 4.2
Max Green Setting (Gmax), s	30.4	* 26	30.4	* 26
Max Q Clear Time (g_c+I1), s	6.5	24.0	14.3	18.9
Green Ext Time (p_c), s	1.8	0.5	3.6	2.0

Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	433	37	206	547	114	58	555	430	112	509	37
Future Volume (veh/h)	31	433	37	206	547	114	58	555	430	112	509	37
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	33	456	34	217	576	108	61	584	281	118	536	31
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	168	728	54	416	649	122	373	1491	665	306	1432	83
Arrive On Green	0.85	0.85	0.85	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	757	1719	128	906	1532	287	844	3554	1585	640	3415	197
Grp Volume(v), veh/h	33	0	490	217	0	684	61	584	281	118	278	289
Grp Sat Flow(s),veh/h/ln	757	0	1847	906	0	1819	844	1777	1585	640	1777	1835
Q Serve(g_s), s	2.6	0.0	5.6	13.6	0.0	22.6	3.5	7.4	8.1	10.2	7.0	7.0
Cycle Q Clear(g_c), s	25.2	0.0	5.6	19.2	0.0	22.6	10.5	7.4	8.1	17.6	7.0	7.0
Prop In Lane	1.00		0.07	1.00		0.16	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	168	0	782	416	0	770	373	1491	665	306	745	770
V/C Ratio(X)	0.20	0.00	0.63	0.52	0.00	0.89	0.16	0.39	0.42	0.39	0.37	0.37
Avail Cap(c_a), veh/h	175	0	799	424	0	786	373	1491	665	306	745	770
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)	0.95	0.00	0.95	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.3	0.0	3.3	18.8	0.0	17.3	16.6	13.1	13.3	19.2	13.0	13.0
Incr Delay (d2), s/veh	0.5	0.0	1.4	1.1	0.0	11.9	0.9	0.8	2.0	3.6	1.4	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.4	2.7	0.0	10.8	0.7	2.7	2.9	1.7	2.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.8	0.0	4.7	19.9	0.0	29.2	17.6	13.9	15.3	22.9	14.4	14.4
LnGrp LOS	B	A	A	B	A	C	B	B	B	C	B	B
Approach Vol, veh/h		523			901			926			685	
Approach Delay, s/veh		5.4			27.0			14.5			15.9	
Approach LOS		A			C			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	32.6	32.4	32.6	32.4
Change Period (Y+Rc), s	5.3	* 4.9	5.3	* 4.9
Max Green Setting (Gmax), s	26.7	* 28	26.7	* 28
Max Q Clear Time (g_c+I1), s	12.5	27.2	19.6	24.6
Green Ext Time (p_c), s	6.1	0.3	3.1	1.9

Intersection Summary	
HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑				↱			↱
Traffic Vol, veh/h	0	2000	0	0	0	0	0	0	200	0	0	0
Future Vol, veh/h	0	2000	0	0	0	0	0	0	200	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Yield	Yield	Yield	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2151	0	0	0	0	0	0	215	0	0	0

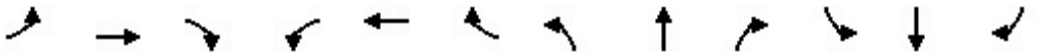
Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	-	-	-	0			-	-	1
Stage 1	-	-	-	-	-	-			-	-	-
Stage 2	-	-	-	-	-	-			-	-	-
Critical Hdwy	-	-	-	-	-	-			-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			-	-	-
Follow-up Hdwy	-	-	-	-	-	-			-	-	3.32
Pot Cap-1 Maneuver	0	-	0	0	-	0			0	0	1083
Stage 1	0	-	0	0	-	0			0	0	-
Stage 2	0	-	0	0	-	0			0	0	-
Platoon blocked, %		-			-						
Mov Cap-1 Maneuver	-	-	-	-	-	-			-	0	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-			-	0	-
Stage 1	-	-	-	-	-	-			-	0	-
Stage 2	-	-	-	-	-	-			-	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Opening Year (2026) Baseline Conditions AM and PM Peak

FEHR PEERS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	194	220	189	427	562	477	631	166	198	452	454
Future Volume (veh/h)	116	194	220	189	427	562	477	631	166	198	452	454
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	122	204	15	199	449	0	502	664	46	208	476	206
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	393	175	335	794		1034	1459	651	286	654	427
Arrive On Green	0.09	0.11	0.11	0.19	0.22	0.00	0.30	0.41	0.41	0.08	0.18	0.18
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	122	204	15	199	449	0	502	664	46	208	476	206
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	6.1	4.9	0.8	9.2	10.1	0.0	10.7	12.2	0.8	5.3	11.4	3.7
Cycle Q Clear(g_c), s	6.1	4.9	0.8	9.2	10.1	0.0	10.7	12.2	0.8	5.3	11.4	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	393	175	335	794		1034	1459	651	286	654	427
V/C Ratio(X)	0.80	0.52	0.09	0.59	0.57		0.49	0.46	0.07	0.73	0.73	0.48
Avail Cap(c_a), veh/h	218	794	354	335	794		1034	1459	651	538	1070	613
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	37.8	35.9	33.4	31.1	0.0	25.8	19.2	4.0	40.3	34.6	10.5
Incr Delay (d2), s/veh	8.3	1.1	0.2	2.0	2.9	0.0	0.1	1.0	0.2	1.3	7.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	2.1	0.3	4.0	4.5	0.0	4.3	5.0	0.6	2.2	5.4	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	38.8	36.1	35.3	34.0	0.0	26.0	20.3	4.2	41.6	41.6	14.3
LnGrp LOS	D	D	D	D	C		C	C	A	D	D	B
Approach Vol, veh/h		341			648	A		1212			890	
Approach Delay, s/veh		42.2			34.4			22.0			35.3	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.8	14.9	31.8	21.5	11.7	25.0	11.4	41.8
Change Period (Y+Rc), s	4.9	* 4.9	4.9	* 4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	11.0	* 20	14.0	* 27	11.0	20.1	14.0	27.1
Max Q Clear Time (g_c+I1), s	11.2	6.9	12.7	13.4	8.1	12.1	7.3	14.2
Green Ext Time (p_c), s	0.0	1.0	0.2	3.2	0.0	1.7	0.2	3.7

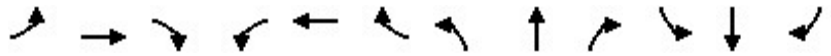
Intersection Summary	
HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	560	115	128	457	29	201	18	131	58	22	60
Future Volume (veh/h)	82	560	115	128	457	29	201	18	131	58	22	60
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	86	589	102	135	481	26	212	19	24	61	23	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	648	1857	321	558	2147	116	321	327	277	186	72	70
Arrive On Green	0.04	0.61	0.61	0.05	0.63	0.63	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	3030	523	1781	3429	185	1351	1870	1585	715	414	403
Grp Volume(v), veh/h	86	345	346	135	249	258	212	19	24	114	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1776	1781	1777	1837	1351	1870	1585	1532	0	0
Q Serve(g_s), s	1.6	8.4	8.4	2.5	5.5	5.5	7.7	0.8	1.1	4.0	0.0	0.0
Cycle Q Clear(g_c), s	1.6	8.4	8.4	2.5	5.5	5.5	13.5	0.8	1.1	5.7	0.0	0.0
Prop In Lane	1.00		0.29	1.00		0.10	1.00		1.00	0.54		0.26
Lane Grp Cap(c), veh/h	648	1089	1089	558	1113	1150	321	327	277	329	0	0
V/C Ratio(X)	0.13	0.32	0.32	0.24	0.22	0.22	0.66	0.06	0.09	0.35	0.00	0.00
Avail Cap(c_a), veh/h	752	1089	1089	639	1113	1150	424	470	398	444	0	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	0.79	0.79	0.79	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.0	8.4	8.4	6.0	7.3	7.3	36.1	31.0	31.1	32.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.8	0.1	0.4	0.4	0.9	0.0	0.0	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	0.5	2.9	3.0	0.8	1.8	1.9	4.5	0.3	0.4	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.0	9.1	9.1	6.1	7.7	7.7	37.0	31.0	31.2	33.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	C	C	C	A	A
Approach Vol, veh/h		777			642			255			114	
Approach Delay, s/veh		8.8			7.3			36.0			33.1	
Approach LOS		A			A			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	61.0		21.1	6.7	62.2		21.1
Change Period (Y+Rc), s	3.5	5.8		5.4	3.5	5.8		5.4
Max Green Setting (Gmax), s	8.5	44.2		22.6	8.5	44.2		22.6
Max Q Clear Time (g_c+I1), s	4.5	10.4		7.7	3.6	7.5		15.5
Green Ext Time (p_c), s	0.1	4.4		0.3	0.0	3.0		0.3

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	596	105	94	433	163	129	413	168	111	195	41
Future Volume (veh/h)	61	596	105	94	433	163	129	413	168	111	195	41
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	64	627	98	99	456	136	136	435	48	117	205	6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	172	982	153	128	742	220	176	705	315	205	564	252
Arrive On Green	0.10	0.32	0.32	0.07	0.27	0.27	0.10	0.20	0.20	0.06	0.16	0.16
Sat Flow, veh/h	1781	3080	481	1781	2703	800	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	64	361	364	99	299	293	136	435	48	117	205	6
Grp Sat Flow(s),veh/h/ln	1781	1777	1784	1781	1777	1726	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.7	8.9	8.9	2.8	7.5	7.6	3.8	5.7	1.3	1.7	2.6	0.1
Cycle Q Clear(g_c), s	1.7	8.9	8.9	2.8	7.5	7.6	3.8	5.7	1.3	1.7	2.6	0.1
Prop In Lane	1.00		0.27	1.00		0.46	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	172	567	569	128	488	474	176	705	315	205	564	252
V/C Ratio(X)	0.37	0.64	0.64	0.78	0.61	0.62	0.77	0.62	0.15	0.57	0.36	0.02
Avail Cap(c_a), veh/h	348	1250	1255	452	1354	1316	592	3125	1394	540	2500	1115
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	14.9	14.9	23.4	16.2	16.2	22.5	18.7	17.0	23.4	19.2	7.7
Incr Delay (d2), s/veh	0.5	1.4	1.5	3.8	1.5	1.6	2.7	0.7	0.2	0.9	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.1	3.1	1.2	2.7	2.7	1.5	2.1	0.4	0.6	1.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.2	16.3	16.4	27.1	17.7	17.8	25.2	19.4	17.1	24.4	19.5	7.8
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	A
Approach Vol, veh/h		789			691			619			328	
Approach Delay, s/veh		16.8			19.1			20.5			21.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	21.3	9.1	13.1	9.9	19.0	7.0	15.2
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	5.0	* 5	4.0	5.0
Max Green Setting (Gmax), s	13.6	36.0	17.0	36.0	10.0	* 39	8.0	45.0
Max Q Clear Time (g_c+I1), s	4.8	10.9	5.8	4.6	3.7	9.6	3.7	7.7
Green Ext Time (p_c), s	0.1	5.4	0.1	1.0	0.0	4.4	0.1	2.4

Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

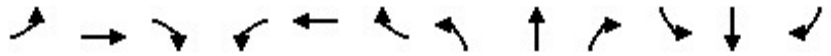
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	329	547	36	88	732	38	295	884	132	63	810	427
Future Volume (veh/h)	329	547	36	88	732	38	295	884	132	63	810	427
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	346	576	34	93	771	37	311	931	60	66	853	317
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	329	717	42	404	905	43	336	1331	594	211	938	418
Arrive On Green	0.18	0.21	0.21	0.23	0.26	0.26	0.15	0.37	0.37	0.04	0.26	0.26
Sat Flow, veh/h	1781	3410	201	1781	3452	166	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	346	300	310	93	397	411	311	931	60	66	853	317
Grp Sat Flow(s),veh/h/ln	1781	1777	1834	1781	1777	1841	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	24.0	20.8	20.9	5.5	27.6	27.6	17.2	28.8	1.6	3.5	30.2	23.9
Cycle Q Clear(g_c), s	24.0	20.8	20.9	5.5	27.6	27.6	17.2	28.8	1.6	3.5	30.2	23.9
Prop In Lane	1.00		0.11	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	374	386	404	466	482	336	1331	594	211	938	418
V/C Ratio(X)	1.05	0.80	0.80	0.23	0.85	0.85	0.93	0.70	0.10	0.31	0.91	0.76
Avail Cap(c_a), veh/h	329	543	560	404	543	562	400	1331	594	375	960	428
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	48.7	48.8	41.0	45.5	45.6	35.4	34.4	6.9	33.7	46.3	44.0
Incr Delay (d2), s/veh	63.8	6.9	6.8	0.1	11.9	11.5	23.2	1.8	0.1	0.3	12.5	8.0
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	16.4	9.8	10.1	2.4	13.4	13.9	9.5	12.6	1.2	1.5	14.8	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	116.8	55.6	55.6	41.1	57.4	57.1	58.6	36.3	7.0	34.0	58.8	52.0
LnGrp LOS	F	E	E	D	E	E	E	D	A	C	E	D
Approach Vol, veh/h		956			901			1302			1236	
Approach Delay, s/veh		77.7			55.6			40.3			55.7	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.7	32.6	23.4	39.2	28.0	39.4	9.0	53.6
Change Period (Y+Rc), s	5.3	* 5.3	4.0	4.9	4.0	5.3	4.0	4.9
Max Green Setting (Gmax), s	18.6	* 40	24.0	35.1	24.0	39.7	17.0	35.1
Max Q Clear Time (g_c+I1), s	17.5	22.9	19.2	32.2	26.0	29.6	5.5	30.8
Green Ext Time (p_c), s	0.1	4.4	0.2	2.1	0.0	4.5	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	55.9
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	309	93	67	365	67	149	769	37	77	756	180
Future Volume (veh/h)	115	309	93	67	365	67	149	769	37	77	756	180
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	121	325	55	71	384	48	157	809	35	81	796	160
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	565	95	91	540	67	143	1624	70	104	1316	264
Arrive On Green	0.07	0.19	0.19	0.05	0.17	0.17	0.08	0.47	0.47	0.06	0.45	0.45
Sat Flow, veh/h	1781	3046	510	1781	3181	395	1781	3470	150	1781	2948	593
Grp Volume(v), veh/h	121	188	192	71	213	219	157	414	430	81	480	476
Grp Sat Flow(s),veh/h/ln	1781	1777	1779	1781	1777	1799	1781	1777	1843	1781	1777	1764
Q Serve(g_s), s	5.0	7.2	7.4	3.0	8.5	8.6	6.0	12.1	12.1	3.4	15.4	15.4
Cycle Q Clear(g_c), s	5.0	7.2	7.4	3.0	8.5	8.6	6.0	12.1	12.1	3.4	15.4	15.4
Prop In Lane	1.00		0.29	1.00		0.22	1.00		0.08	1.00		0.34
Lane Grp Cap(c), veh/h	119	329	330	91	302	305	143	831	863	104	793	787
V/C Ratio(X)	1.02	0.57	0.58	0.78	0.71	0.72	1.10	0.50	0.50	0.78	0.61	0.61
Avail Cap(c_a), veh/h	119	521	522	119	521	528	143	831	863	143	793	787
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)	0.71	0.71	0.71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	27.8	27.9	35.2	29.4	29.4	34.5	13.8	13.8	34.8	15.8	15.8
Incr Delay (d2), s/veh	74.6	1.3	1.4	18.1	3.7	3.8	105.3	2.1	2.1	13.5	3.4	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	3.0	3.1	1.7	3.7	3.8	6.7	4.9	5.1	1.8	6.4	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	109.6	29.2	29.3	53.2	33.0	33.2	139.8	16.0	15.9	48.3	19.2	19.2
LnGrp LOS	F	C	C	D	C	C	F	B	B	D	B	B
Approach Vol, veh/h		501			503			1001			1037	
Approach Delay, s/veh		48.6			36.0			35.4			21.5	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	40.0	7.8	18.8	10.0	38.4	9.0	17.6
Change Period (Y+Rc), s	4.0	4.9	4.0	4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	6.0	24.2	5.0	22.0	6.0	24.2	5.0	22.0
Max Q Clear Time (g_c+I1), s	5.4	14.1	5.0	9.4	8.0	17.4	7.0	10.6
Green Ext Time (p_c), s	0.0	4.9	0.0	1.9	0.0	4.1	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	32.9
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	137	9	126	79	47	6	218	90	50	168	9
Future Volume (veh/h)	34	137	9	126	79	47	6	218	90	50	168	9
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	36	144	7	133	83	28	6	229	66	53	177	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	885	41	909	839	283	297	331	95	206	429	12
Arrive On Green	0.63	0.63	0.63	0.63	0.63	0.63	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	262	1411	65	1236	1338	451	1202	1396	402	1084	1810	51
Grp Volume(v), veh/h	187	0	0	133	0	111	6	0	295	53	0	182
Grp Sat Flow(s),veh/h/ln	1738	0	0	1236	0	1789	1202	0	1798	1084	0	1861
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.6	0.3	0.0	9.7	3.0	0.0	5.4
Cycle Q Clear(g_c), s	2.7	0.0	0.0	2.0	0.0	1.6	5.6	0.0	9.7	12.8	0.0	5.4
Prop In Lane	0.19		0.04	1.00		0.25	1.00		0.22	1.00		0.03
Lane Grp Cap(c), veh/h	1157	0	0	909	0	1123	297	0	426	206	0	441
V/C Ratio(X)	0.16	0.00	0.00	0.15	0.00	0.10	0.02	0.00	0.69	0.26	0.00	0.41
Avail Cap(c_a), veh/h	1157	0	0	909	0	1123	488	0	714	379	0	739
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	0.00	0.00	0.79	0.00	0.79	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.0	0.0	0.0	4.9	0.0	4.8	23.3	0.0	22.6	28.5	0.0	21.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.3	0.0	0.1	0.0	0.0	2.0	0.7	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	0.6	0.0	0.5	0.1	0.0	4.1	0.8	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.3	0.0	0.0	5.1	0.0	4.9	23.4	0.0	24.6	29.1	0.0	21.6
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		187			244			301			235	
Approach Delay, s/veh		5.3			5.1			24.6			23.3	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	45.4	19.6	45.4	19.6
Change Period (Y+Rc), s	4.6	* 4.2	4.6	* 4.2
Max Green Setting (Gmax), s	30.4	* 26	30.4	* 26
Max Q Clear Time (g_c+I1), s	4.7	14.8	4.0	11.7
Green Ext Time (p_c), s	1.5	0.9	1.6	1.5

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	269	22	162	239	69	29	545	268	90	281	13
Future Volume (veh/h)	25	269	22	162	239	69	29	545	268	90	281	13
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	26	283	17	171	252	52	31	574	149	95	296	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	286	530	32	336	456	94	645	1918	856	440	1894	64
Arrive On Green	0.61	0.61	0.61	0.30	0.30	0.30	0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	1075	1747	105	1079	1504	310	1073	3554	1585	730	3508	118
Grp Volume(v), veh/h	26	0	300	171	0	304	31	574	149	95	150	156
Grp Sat Flow(s),veh/h/ln	1075	0	1851	1079	0	1814	1073	1777	1585	730	1777	1849
Q Serve(g_s), s	1.1	0.0	6.1	9.7	0.0	9.1	1.0	5.8	3.1	5.3	2.7	2.8
Cycle Q Clear(g_c), s	10.2	0.0	6.1	15.8	0.0	9.1	3.7	5.8	3.1	11.1	2.7	2.8
Prop In Lane	1.00		0.06	1.00		0.17	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	286	0	561	336	0	550	645	1918	856	440	959	998
V/C Ratio(X)	0.09	0.00	0.53	0.51	0.00	0.55	0.05	0.30	0.17	0.22	0.16	0.16
Avail Cap(c_a), veh/h	425	0	800	476	0	784	645	1918	856	440	959	998
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)	0.99	0.00	0.99	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.2	0.0	10.1	24.2	0.0	19.0	8.5	8.2	7.6	11.3	7.5	7.5
Incr Delay (d2), s/veh	0.1	0.0	0.8	1.2	0.0	0.9	0.1	0.4	0.4	1.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.9	2.4	0.0	3.7	0.2	1.9	1.0	0.9	0.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	0.0	10.9	25.4	0.0	19.8	8.6	8.6	8.0	12.4	7.9	7.9
LnGrp LOS	B	A	B	C	A	B	A	A	A	B	A	A
Approach Vol, veh/h		326			475			754			401	
Approach Delay, s/veh		11.2			21.8			8.5			8.9	
Approach LOS		B			C			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	40.4	24.6	40.4	24.6
Change Period (Y+Rc), s	5.3	* 4.9	5.3	* 4.9
Max Green Setting (Gmax), s	26.7	* 28	26.7	* 28
Max Q Clear Time (g_c+I1), s	7.8	12.2	13.1	17.8
Green Ext Time (p_c), s	5.9	1.7	2.7	1.9

Intersection Summary	
HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

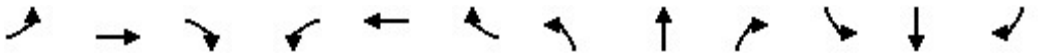
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑				↱			↱
Traffic Vol, veh/h	0	2000	0	0	0	0	0	0	200	0	0	0
Future Vol, veh/h	0	2000	0	0	0	0	0	0	200	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Yield	Yield	Yield	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2105	0	0	0	0	0	0	211	0	0	0

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	-	-	-	0				-	-	1
Stage 1	-	-	-	-	-	-				-	-	-
Stage 2	-	-	-	-	-	-				-	-	-
Critical Hdwy	-	-	-	-	-	-				-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-				-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-				-	-	-
Follow-up Hdwy	-	-	-	-	-	-				-	-	3.32
Pot Cap-1 Maneuver	0	-	0	0	-	0				0	0	1083
Stage 1	0	-	0	0	-	0				0	0	-
Stage 2	0	-	0	0	-	0				0	0	-
Platoon blocked, %		-			-							
Mov Cap-1 Maneuver	-	-	-	-	-	-				-	0	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-				-	0	-
Stage 1	-	-	-	-	-	-				-	0	-
Stage 2	-	-	-	-	-	-				-	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	635	295	176	264	181	324	552	214	509	845	858
Future Volume (veh/h)	70	635	295	176	264	181	324	552	214	509	845	858
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	74	668	58	185	278	0	341	581	65	536	889	819
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	757	338	218	1037		536	1071	478	538	1036	547
Arrive On Green	0.05	0.21	0.21	0.12	0.29	0.00	0.16	0.30	0.30	0.16	0.29	0.29
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	74	668	58	185	278	0	341	581	65	536	889	819
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	3.7	16.4	2.7	9.2	5.4	0.0	8.3	12.3	1.8	14.0	21.3	21.6
Cycle Q Clear(g_c), s	3.7	16.4	2.7	9.2	5.4	0.0	8.3	12.3	1.8	14.0	21.3	21.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	757	338	218	1037		536	1071	478	538	1036	547
V/C Ratio(X)	0.78	0.88	0.17	0.85	0.27		0.64	0.54	0.14	1.00	0.86	1.50
Avail Cap(c_a), veh/h	218	794	354	218	1037		538	1071	478	538	1070	562
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	34.3	28.9	38.7	24.5	0.0	35.6	26.3	10.3	38.0	30.1	16.4
Incr Delay (d2), s/veh	5.0	11.0	0.2	24.8	0.6	0.0	1.9	2.0	0.6	38.0	9.2	233.0
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	1.7	8.0	1.0	5.4	2.3	0.0	3.6	5.3	1.0	8.5	10.0	42.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	45.4	29.2	63.5	25.1	0.0	37.5	28.2	10.9	76.0	39.3	249.5
LnGrp LOS	D	D	C	E	C		D	C	B	E	D	F
Approach Vol, veh/h		800			463	A		987			2244	
Approach Delay, s/veh		44.3			40.4			30.3			124.8	
Approach LOS		D			D			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	24.1	18.9	31.1	8.8	31.2	18.0	32.0
Change Period (Y+Rc), s	4.9	* 4.9	4.9	* 4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	11.0	* 20	14.0	* 27	11.0	20.1	14.0	27.1
Max Q Clear Time (g_c+I1), s	11.2	18.4	10.3	23.6	5.7	7.4	16.0	14.3
Green Ext Time (p_c), s	0.0	0.8	0.3	2.7	0.0	1.3	0.0	3.3

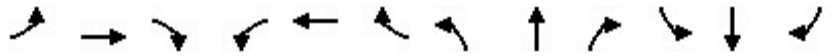
Intersection Summary	
HCM 6th Ctrl Delay	81.0
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	1156	246	243	652	70	195	50	214	76	21	29
Future Volume (veh/h)	76	1156	246	243	652	70	195	50	214	76	21	29
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	80	1217	239	256	686	66	205	53	50	80	22	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	520	1749	341	324	2065	198	316	321	272	207	55	33
Arrive On Green	0.03	0.59	0.59	0.08	0.63	0.63	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	2966	578	1781	3276	315	1368	1870	1585	814	323	189
Grp Volume(v), veh/h	80	725	731	256	372	380	205	53	50	119	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1766	1781	1777	1814	1368	1870	1585	1326	0	0
Q Serve(g_s), s	1.6	25.5	26.1	4.7	8.8	8.8	5.2	2.2	2.4	5.7	0.0	0.0
Cycle Q Clear(g_c), s	1.6	25.5	26.1	4.7	8.8	8.8	13.1	2.2	2.4	7.9	0.0	0.0
Prop In Lane	1.00		0.33	1.00		0.17	1.00		1.00	0.67		0.14
Lane Grp Cap(c), veh/h	520	1048	1042	324	1120	1143	316	321	272	294	0	0
V/C Ratio(X)	0.15	0.69	0.70	0.79	0.33	0.33	0.65	0.17	0.18	0.40	0.00	0.00
Avail Cap(c_a), veh/h	627	1048	1042	358	1120	1143	424	470	398	406	0	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	0.69	0.69	0.69	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.8	12.8	12.9	16.2	7.8	7.8	36.3	31.8	31.9	34.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	3.8	3.9	6.5	0.6	0.5	0.8	0.1	0.1	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	0.5	9.6	9.8	3.6	2.9	3.0	4.4	1.0	0.9	2.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.9	16.6	16.9	22.7	8.3	8.3	37.1	31.9	32.0	34.7	0.0	0.0
LnGrp LOS	A	B	B	C	A	A	D	C	C	C	A	A
Approach Vol, veh/h		1536			1008			308			119	
Approach Delay, s/veh		16.2			12.0			35.4			34.7	
Approach LOS		B			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.3	58.9		20.8	6.6	62.5		20.8
Change Period (Y+Rc), s	3.5	5.8		5.4	3.5	5.8		5.4
Max Green Setting (Gmax), s	8.5	44.2		22.6	8.5	44.2		22.6
Max Q Clear Time (g_c+I1), s	6.7	28.1		9.9	3.6	10.8		15.1
Green Ext Time (p_c), s	0.1	8.8		0.3	0.0	4.8		0.4

Intersection Summary	
HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	1198	226	151	731	114	157	325	252	206	323	63
Future Volume (veh/h)	62	1198	226	151	731	114	157	325	252	206	323	63
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	65	1261	226	159	769	111	165	342	38	217	340	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	421	1342	238	193	954	138	199	565	252	296	471	210
Arrive On Green	0.24	0.45	0.45	0.11	0.31	0.31	0.11	0.16	0.16	0.09	0.13	0.13
Sat Flow, veh/h	1781	3015	536	1781	3117	450	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	65	739	748	159	438	442	165	342	38	217	340	8
Grp Sat Flow(s),veh/h/ln	1781	1777	1774	1781	1777	1789	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	2.6	35.2	36.1	7.8	20.3	20.3	8.1	8.0	1.8	5.5	8.2	0.2
Cycle Q Clear(g_c), s	2.6	35.2	36.1	7.8	20.3	20.3	8.1	8.0	1.8	5.5	8.2	0.2
Prop In Lane	1.00		0.30	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	421	791	789	193	544	548	199	565	252	296	471	210
V/C Ratio(X)	0.15	0.93	0.95	0.82	0.81	0.81	0.83	0.61	0.15	0.73	0.72	0.04
Avail Cap(c_a), veh/h	421	797	796	300	697	702	280	1275	569	581	1275	569
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	23.5	23.7	38.9	28.5	28.5	38.8	34.9	32.3	39.8	37.1	12.1
Incr Delay (d2), s/veh	0.1	17.9	20.3	5.5	5.8	5.8	9.5	0.8	0.2	1.3	1.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	17.1	17.9	3.6	8.9	9.0	3.9	3.4	0.7	2.3	3.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.1	41.4	44.0	44.4	34.3	34.3	48.2	35.7	32.5	41.1	38.7	12.1
LnGrp LOS	C	D	D	D	C	C	D	D	C	D	D	B
Approach Vol, veh/h		1552			1039			545			565	
Approach Delay, s/veh		42.1			35.8			39.3			39.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	44.7	14.0	16.8	26.1	32.3	11.6	19.2
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	5.0	* 5	4.0	5.0
Max Green Setting (Gmax), s	15.0	40.0	14.0	32.0	15.0	* 35	15.0	32.0
Max Q Clear Time (g_c+I1), s	9.8	38.1	10.1	10.2	4.6	22.3	7.5	10.0
Green Ext Time (p_c), s	0.1	1.6	0.1	1.6	0.0	5.0	0.2	1.7

Intersection Summary	
HCM 6th Ctrl Delay	39.5
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

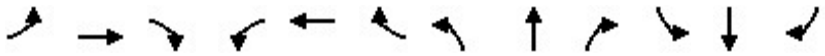
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	339	1005	47	94	744	69	336	1130	187	116	785	390
Future Volume (veh/h)	339	1005	47	94	744	69	336	1130	187	116	785	390
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	357	1058	46	99	783	68	354	1189	104	122	826	285
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	1224	53	165	881	76	359	1313	586	152	875	390
Arrive On Green	0.19	0.35	0.35	0.09	0.27	0.27	0.17	0.37	0.37	0.04	0.25	0.25
Sat Flow, veh/h	1781	3469	151	1781	3308	287	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	357	542	562	99	420	431	354	1189	104	122	826	285
Grp Sat Flow(s),veh/h/ln	1781	1777	1843	1781	1777	1819	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	26.0	39.1	39.2	7.4	31.4	31.4	22.6	43.7	4.5	6.0	31.5	22.8
Cycle Q Clear(g_c), s	26.0	39.1	39.2	7.4	31.4	31.4	22.6	43.7	4.5	6.0	31.5	22.8
Prop In Lane	1.00		0.08	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	336	627	650	165	473	484	359	1313	586	152	875	390
V/C Ratio(X)	1.06	0.86	0.86	0.60	0.89	0.89	0.99	0.91	0.18	0.80	0.94	0.73
Avail Cap(c_a), veh/h	336	705	732	165	512	524	359	1318	588	152	879	392
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	41.5	41.5	60.1	48.6	48.6	41.6	41.2	15.9	44.8	51.0	47.7
Incr Delay (d2), s/veh	66.6	10.6	10.3	4.2	17.1	16.8	43.9	9.3	0.2	23.9	18.4	7.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.7	18.6	19.2	3.5	15.9	16.2	16.5	20.5	2.3	2.3	16.1	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	122.5	52.1	51.8	64.3	65.7	65.4	85.4	50.5	16.1	68.7	69.4	55.1
LnGrp LOS	F	D	D	E	E	E	F	D	B	E	E	E
Approach Vol, veh/h		1461			950			1647			1233	
Approach Delay, s/veh		69.2			65.4			55.8			66.0	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.1	53.9	27.0	38.8	30.0	42.0	10.0	55.8
Change Period (Y+Rc), s	5.3	* 5.3	4.0	4.9	4.0	5.3	4.0	4.9
Max Green Setting (Gmax), s	12.8	* 55	23.0	34.1	26.0	39.7	6.0	51.1
Max Q Clear Time (g_c+I1), s	9.4	41.2	24.6	33.5	28.0	33.4	8.0	45.7
Green Ext Time (p_c), s	0.0	7.5	0.0	0.5	0.0	3.3	0.0	4.1

Intersection Summary	
HCM 6th Ctrl Delay	63.6
HCM 6th LOS	E

Notes

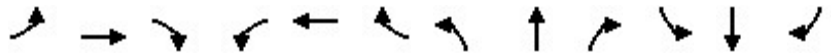
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	730	168	95	447	102	226	1317	99	135	1085	261
Future Volume (veh/h)	256	730	168	95	447	102	226	1317	99	135	1085	261
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	269	768	149	100	471	80	238	1386	97	142	1142	246
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	850	165	119	871	147	119	1200	84	95	998	214
Arrive On Green	0.07	0.29	0.29	0.07	0.29	0.29	0.07	0.36	0.36	0.05	0.34	0.34
Sat Flow, veh/h	1781	2968	576	1781	3041	514	1781	3370	235	1781	2912	623
Grp Volume(v), veh/h	269	460	457	100	274	277	238	729	754	142	694	694
Grp Sat Flow(s),veh/h/ln	1781	1777	1767	1781	1777	1778	1781	1777	1828	1781	1777	1758
Q Serve(g_s), s	5.0	18.7	18.7	4.2	9.8	9.9	5.0	26.7	26.7	4.0	25.7	25.7
Cycle Q Clear(g_c), s	5.0	18.7	18.7	4.2	9.8	9.9	5.0	26.7	26.7	4.0	25.7	25.7
Prop In Lane	1.00		0.33	1.00		0.29	1.00		0.13	1.00		0.35
Lane Grp Cap(c), veh/h	119	509	506	119	509	509	119	633	651	95	609	603
V/C Ratio(X)	2.27	0.90	0.90	0.84	0.54	0.54	2.00	1.15	1.16	1.49	1.14	1.15
Avail Cap(c_a), veh/h	119	521	518	119	521	522	119	633	651	95	609	603
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)	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	25.8	25.8	34.6	22.6	22.6	35.0	24.1	24.1	35.5	24.6	24.6
Incr Delay (d2), s/veh	582.6	10.9	11.0	38.2	1.2	1.3	480.3	85.4	87.8	269.8	81.2	86.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.3	8.7	8.7	3.0	3.9	4.0	17.9	25.3	26.5	8.8	23.7	24.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	617.6	36.6	36.7	72.8	23.8	23.9	515.3	109.5	111.9	305.3	105.9	110.8
LnGrp LOS	F	D	D	E	C	C	F	F	F	F	F	F
Approach Vol, veh/h		1186			651			1721			1530	
Approach Delay, s/veh		168.4			31.4			166.7			126.6	
Approach LOS		F			C			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	31.6	9.0	26.4	9.0	30.6	9.0	26.4
Change Period (Y+Rc), s	4.0	4.9	4.0	4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	4.0	26.2	5.0	22.0	5.0	25.2	5.0	22.0
Max Q Clear Time (g_c+I1), s	6.0	28.7	6.2	20.7	7.0	27.7	7.0	11.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.0	0.0	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	137.7
HCM 6th LOS	F



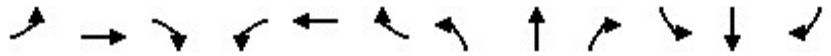
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	191	6	268	202	90	10	350	176	69	340	18
Future Volume (veh/h)	25	191	6	268	202	90	10	350	176	69	340	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	26	201	5	282	213	71	11	368	153	73	358	16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	798	19	704	655	218	332	473	197	215	669	30
Arrive On Green	0.49	0.49	0.49	0.16	0.16	0.16	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	112	1635	38	1176	1342	447	1009	1255	522	881	1777	79
Grp Volume(v), veh/h	232	0	0	282	0	284	11	0	521	73	0	374
Grp Sat Flow(s),veh/h/ln	1785	0	0	1176	0	1790	1009	0	1776	881	0	1856
Q Serve(g_s), s	0.0	0.0	0.0	8.3	0.0	9.1	0.6	0.0	16.8	5.2	0.0	10.2
Cycle Q Clear(g_c), s	4.7	0.0	0.0	13.0	0.0	9.1	10.8	0.0	16.8	22.0	0.0	10.2
Prop In Lane	0.11		0.02	1.00		0.25	1.00		0.29	1.00		0.04
Lane Grp Cap(c), veh/h	932	0	0	704	0	873	332	0	669	215	0	699
V/C Ratio(X)	0.25	0.00	0.00	0.40	0.00	0.33	0.03	0.00	0.78	0.34	0.00	0.53
Avail Cap(c_a), veh/h	932	0	0	704	0	873	352	0	705	233	0	737
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.44	0.00	0.44	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.7	0.0	0.0	19.1	0.0	17.8	20.0	0.0	17.9	27.6	0.0	15.8
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.7	0.0	0.4	0.0	0.0	5.3	0.9	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0	4.5	0.0	4.1	0.1	0.0	7.2	1.1	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	0.0	0.0	19.9	0.0	18.2	20.1	0.0	23.2	28.5	0.0	16.5
LnGrp LOS	B	A	A	B	A	B	C	A	C	C	A	B
Approach Vol, veh/h		232			566			532			447	
Approach Delay, s/veh		10.4			19.1			23.1			18.4	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	36.3	28.7	36.3	28.7
Change Period (Y+Rc), s	4.6	* 4.2	4.6	* 4.2
Max Green Setting (Gmax), s	30.4	* 26	30.4	* 26
Max Q Clear Time (g_c+I1), s	6.7	24.0	15.0	18.8
Green Ext Time (p_c), s	1.9	0.5	3.7	2.0

Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	444	38	211	561	117	60	570	441	115	526	38
Future Volume (veh/h)	32	444	38	211	561	117	60	570	441	115	526	38
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	34	467	35	222	591	111	63	600	297	121	554	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	166	741	56	424	661	124	357	1463	652	292	1405	81
Arrive On Green	0.86	0.86	0.86	0.43	0.43	0.43	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	745	1718	129	896	1531	288	829	3554	1585	621	3415	197
Grp Volume(v), veh/h	34	0	502	222	0	702	63	600	297	121	288	298
Grp Sat Flow(s),veh/h/ln	745	0	1847	896	0	1819	829	1777	1585	621	1777	1835
Q Serve(g_s), s	2.8	0.0	5.3	13.9	0.0	23.2	3.8	7.8	8.8	11.1	7.4	7.4
Cycle Q Clear(g_c), s	26.0	0.0	5.3	19.2	0.0	23.2	11.2	7.8	8.8	18.9	7.4	7.4
Prop In Lane	1.00		0.07	1.00		0.16	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	166	0	797	424	0	785	357	1463	652	292	731	755
V/C Ratio(X)	0.20	0.00	0.63	0.52	0.00	0.89	0.18	0.41	0.46	0.41	0.39	0.39
Avail Cap(c_a), veh/h	167	0	799	425	0	786	357	1463	652	292	731	755
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)	0.95	0.00	0.95	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.2	0.0	2.9	18.3	0.0	17.1	17.4	13.5	13.8	20.2	13.4	13.4
Incr Delay (d2), s/veh	0.6	0.0	1.5	1.2	0.0	12.8	1.1	0.9	2.3	4.3	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.3	2.8	0.0	11.2	0.8	2.9	3.2	1.8	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.8	0.0	4.4	19.4	0.0	29.9	18.4	14.4	16.1	24.5	15.0	15.0
LnGrp LOS	B	A	A	B	A	C	B	B	B	C	B	B
Approach Vol, veh/h		536			924			960			707	
Approach Delay, s/veh		5.1			27.4			15.2			16.6	
Approach LOS		A			C			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	32.1	32.9	32.1	32.9
Change Period (Y+Rc), s	5.3	* 4.9	5.3	* 4.9
Max Green Setting (Gmax), s	26.7	* 28	26.7	* 28
Max Q Clear Time (g_c+I1), s	13.2	28.0	20.9	25.2
Green Ext Time (p_c), s	6.1	0.0	2.8	1.6

Intersection Summary	
HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑				↱			↱
Traffic Vol, veh/h	0	2000	0	0	0	0	0	0	200	0	0	0
Future Vol, veh/h	0	2000	0	0	0	0	0	0	200	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Yield	Yield	Yield	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2105	0	0	0	0	0	0	211	0	0	0

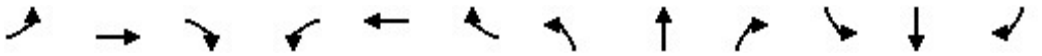
Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	-	-	-	0			-	-	1
Stage 1	-	-	-	-	-	-			-	-	-
Stage 2	-	-	-	-	-	-			-	-	-
Critical Hdwy	-	-	-	-	-	-			-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			-	-	-
Follow-up Hdwy	-	-	-	-	-	-			-	-	3.32
Pot Cap-1 Maneuver	0	-	0	0	-	0			0	0	1083
Stage 1	0	-	0	0	-	0			0	0	-
Stage 2	0	-	0	0	-	0			0	0	-
Platoon blocked, %		-			-						
Mov Cap-1 Maneuver	-	-	-	-	-	-			-	0	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-			-	0	-
Stage 1	-	-	-	-	-	-			-	0	-
Stage 2	-	-	-	-	-	-			-	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Opening Year (2026) Baseline Plus Project Conditions
AM and PM Peak

FEHR PEERS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	196	220	212	436	571	477	631	166	198	452	454
Future Volume (veh/h)	116	196	220	212	436	571	477	631	166	198	452	454
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	122	206	19	223	459	0	502	664	46	208	476	376
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	393	175	335	794		1014	1459	651	286	675	437
Arrive On Green	0.09	0.11	0.11	0.19	0.22	0.00	0.29	0.41	0.41	0.08	0.19	0.19
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	122	206	19	223	459	0	502	664	46	208	476	376
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	6.1	4.9	1.0	10.5	10.4	0.0	10.8	12.2	0.8	5.3	11.3	9.8
Cycle Q Clear(g_c), s	6.1	4.9	1.0	10.5	10.4	0.0	10.8	12.2	0.8	5.3	11.3	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	393	175	335	794		1014	1459	651	286	675	437
V/C Ratio(X)	0.80	0.52	0.11	0.67	0.58		0.50	0.46	0.07	0.73	0.71	0.86
Avail Cap(c_a), veh/h	218	794	354	335	794		1014	1459	651	538	1070	613
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	37.8	36.0	33.9	31.2	0.0	26.3	19.2	4.0	40.3	34.1	14.1
Incr Delay (d2), s/veh	8.3	1.1	0.3	4.0	3.1	0.0	0.1	1.0	0.2	1.3	6.1	19.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	2.2	0.4	4.8	4.6	0.0	4.3	5.0	0.6	2.2	5.3	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	38.9	36.3	37.9	34.2	0.0	26.4	20.3	4.2	41.6	40.2	33.5
LnGrp LOS	D	D	D	D	C		C	C	A	D	D	C
Approach Vol, veh/h		347			682	A		1212			1060	
Approach Delay, s/veh		42.2			35.4			22.2			38.1	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.8	14.9	31.3	22.0	11.7	25.0	11.4	41.8
Change Period (Y+Rc), s	4.9	* 4.9	4.9	* 4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	11.0	* 20	14.0	* 27	11.0	20.1	14.0	27.1
Max Q Clear Time (g_c+I1), s	12.5	6.9	12.8	13.3	8.1	12.4	7.3	14.2
Green Ext Time (p_c), s	0.0	1.0	0.2	3.8	0.0	1.7	0.2	3.7

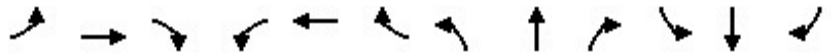
Intersection Summary	
HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



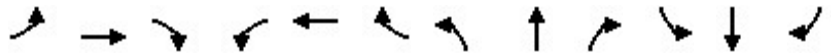
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	560	115	128	474	29	205	18	131	58	22	60
Future Volume (veh/h)	82	560	115	128	474	29	205	18	131	58	22	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	86	589	102	135	499	26	216	19	26	61	23	30
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	634	1848	319	555	2142	111	324	332	282	188	73	72
Arrive On Green	0.04	0.61	0.61	0.05	0.62	0.62	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1781	3030	523	1781	3436	179	1351	1870	1585	715	412	403
Grp Volume(v), veh/h	86	345	346	135	258	267	216	19	26	114	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1776	1781	1777	1838	1351	1870	1585	1530	0	0
Q Serve(g_s), s	1.6	8.5	8.5	2.5	5.7	5.8	8.0	0.8	1.2	4.0	0.0	0.0
Cycle Q Clear(g_c), s	1.6	8.5	8.5	2.5	5.7	5.8	13.7	0.8	1.2	5.7	0.0	0.0
Prop In Lane	1.00		0.29	1.00		0.10	1.00		1.00	0.54		0.26
Lane Grp Cap(c), veh/h	634	1084	1083	555	1107	1146	324	332	282	333	0	0
V/C Ratio(X)	0.14	0.32	0.32	0.24	0.23	0.23	0.67	0.06	0.09	0.34	0.00	0.00
Avail Cap(c_a), veh/h	739	1084	1083	636	1107	1146	424	470	398	443	0	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	0.79	0.79	0.79	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.1	8.5	8.5	6.2	7.5	7.5	36.0	30.7	30.9	32.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.8	0.1	0.4	0.4	1.1	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	0.5	3.0	3.0	0.8	2.0	2.0	4.6	0.3	0.5	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	9.3	9.3	6.2	7.9	7.9	37.1	30.8	31.0	32.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	C	C	C	A	A
Approach Vol, veh/h		777			660			261			114	
Approach Delay, s/veh		8.9			7.5			36.0			32.9	
Approach LOS		A			A			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	60.7		21.4	6.7	61.9		21.4
Change Period (Y+Rc), s	3.5	5.8		5.4	3.5	5.8		5.4
Max Green Setting (Gmax), s	8.5	44.2		22.6	8.5	44.2		22.6
Max Q Clear Time (g_c+I1), s	4.5	10.5		7.7	3.6	7.8		15.7
Green Ext Time (p_c), s	0.1	4.4		0.3	0.0	3.1		0.3

Intersection Summary	
HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.



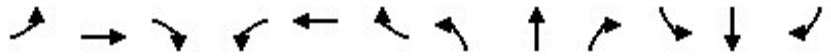
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	596	105	94	443	163	131	413	168	111	195	47
Future Volume (veh/h)	61	596	105	94	443	163	131	413	168	111	195	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	64	627	98	99	466	136	138	435	48	117	205	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	982	153	128	756	219	179	705	315	205	559	250
Arrive On Green	0.09	0.32	0.32	0.07	0.28	0.28	0.10	0.20	0.20	0.06	0.16	0.16
Sat Flow, veh/h	1781	3080	481	1781	2718	788	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	64	361	364	99	303	299	138	435	48	117	205	8
Grp Sat Flow(s),veh/h/ln	1781	1777	1784	1781	1777	1729	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.7	8.9	8.9	2.8	7.6	7.7	3.9	5.7	1.3	1.7	2.6	0.1
Cycle Q Clear(g_c), s	1.7	8.9	8.9	2.8	7.6	7.7	3.9	5.7	1.3	1.7	2.6	0.1
Prop In Lane	1.00		0.27	1.00		0.46	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	567	569	128	494	481	179	705	315	205	559	250
V/C Ratio(X)	0.39	0.64	0.64	0.78	0.61	0.62	0.77	0.62	0.15	0.57	0.37	0.03
Avail Cap(c_a), veh/h	348	1250	1255	452	1354	1317	592	3125	1394	540	2500	1115
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	14.9	14.9	23.4	16.1	16.1	22.5	18.7	17.0	23.4	19.3	7.9
Incr Delay (d2), s/veh	0.5	1.4	1.5	3.8	1.5	1.6	2.7	0.7	0.2	0.9	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.1	3.1	1.2	2.7	2.7	1.5	2.1	0.4	0.6	1.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	16.3	16.4	27.1	17.6	17.7	25.1	19.4	17.1	24.4	19.6	7.9
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	A
Approach Vol, veh/h		789			701			621			330	
Approach Delay, s/veh		16.8			19.0			20.5			21.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	21.3	9.1	13.1	9.8	19.2	7.0	15.2
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	5.0	* 5	4.0	5.0
Max Green Setting (Gmax), s	13.6	36.0	17.0	36.0	10.0	* 39	8.0	45.0
Max Q Clear Time (g_c+I1), s	4.7	10.9	5.9	4.6	3.7	9.7	3.7	7.7
Green Ext Time (p_c), s	0.1	5.4	0.1	1.0	0.0	4.5	0.1	2.4

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

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



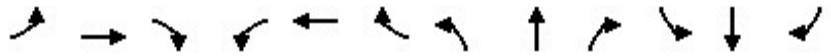
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	329	547	36	88	738	38	297	884	132	63	810	429
Future Volume (veh/h)	329	547	36	88	738	38	297	884	132	63	810	429
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	346	576	34	93	777	37	313	931	60	66	853	319
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	327	716	42	404	908	43	338	1333	595	211	935	417
Arrive On Green	0.18	0.21	0.21	0.23	0.26	0.26	0.15	0.38	0.38	0.04	0.26	0.26
Sat Flow, veh/h	1781	3410	201	1781	3453	164	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	346	300	310	93	400	414	313	931	60	66	853	319
Grp Sat Flow(s),veh/h/ln	1781	1777	1834	1781	1777	1841	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	24.0	20.9	21.0	5.6	27.9	27.9	17.4	29.0	1.6	3.5	30.4	24.2
Cycle Q Clear(g_c), s	24.0	20.9	21.0	5.6	27.9	27.9	17.4	29.0	1.6	3.5	30.4	24.2
Prop In Lane	1.00		0.11	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	327	373	385	404	467	484	338	1333	595	211	935	417
V/C Ratio(X)	1.06	0.80	0.81	0.23	0.86	0.86	0.93	0.70	0.10	0.31	0.91	0.76
Avail Cap(c_a), veh/h	327	540	558	404	540	560	397	1333	595	374	955	426
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	49.0	49.0	41.2	45.7	45.8	35.9	34.5	6.9	33.9	46.6	44.4
Incr Delay (d2), s/veh	65.4	7.0	6.9	0.1	12.3	11.9	23.8	1.8	0.1	0.3	12.8	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.5	9.9	10.2	2.4	13.7	14.1	9.7	12.7	1.2	1.5	14.9	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	118.7	56.0	56.0	41.3	58.0	57.7	59.6	36.3	7.0	34.2	59.5	52.8
LnGrp LOS	F	E	E	D	E	E	E	D	A	C	E	D
Approach Vol, veh/h		956			907			1304			1238	
Approach Delay, s/veh		78.7			56.1			40.6			56.4	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.9	32.7	23.7	39.3	28.0	39.6	9.0	53.9
Change Period (Y+Rc), s	5.3	* 5.3	4.0	4.9	4.0	5.3	4.0	4.9
Max Green Setting (Gmax), s	18.6	* 40	24.0	35.1	24.0	39.7	17.0	35.1
Max Q Clear Time (g_c+I1), s	17.6	23.0	19.4	32.4	26.0	29.9	5.5	31.0
Green Ext Time (p_c), s	0.1	4.4	0.2	2.0	0.0	4.4	0.0	2.7

Intersection Summary	
HCM 6th Ctrl Delay	56.5
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	309	93	67	369	67	150	769	37	77	756	181
Future Volume (veh/h)	115	309	93	67	369	67	150	769	37	77	756	181
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	121	325	55	71	388	48	158	809	35	81	796	162
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	568	95	91	544	67	143	1620	70	104	1309	266
Arrive On Green	0.07	0.19	0.19	0.05	0.17	0.17	0.08	0.47	0.47	0.06	0.45	0.45
Sat Flow, veh/h	1781	3046	510	1781	3185	392	1781	3470	150	1781	2941	599
Grp Volume(v), veh/h	121	188	192	71	215	221	158	414	430	81	481	477
Grp Sat Flow(s),veh/h/ln	1781	1777	1779	1781	1777	1800	1781	1777	1843	1781	1777	1763
Q Serve(g_s), s	5.0	7.2	7.4	3.0	8.6	8.7	6.0	12.2	12.2	3.4	15.4	15.4
Cycle Q Clear(g_c), s	5.0	7.2	7.4	3.0	8.6	8.7	6.0	12.2	12.2	3.4	15.4	15.4
Prop In Lane	1.00		0.29	1.00		0.22	1.00		0.08	1.00		0.34
Lane Grp Cap(c), veh/h	119	332	332	91	304	308	143	829	860	104	791	785
V/C Ratio(X)	1.02	0.57	0.58	0.78	0.71	0.72	1.11	0.50	0.50	0.78	0.61	0.61
Avail Cap(c_a), veh/h	119	521	522	119	521	528	143	829	860	143	791	785
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)	0.71	0.71	0.71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	27.8	27.8	35.2	29.3	29.4	34.5	13.9	13.9	34.8	15.8	15.8
Incr Delay (d2), s/veh	74.6	1.3	1.4	18.1	3.7	3.8	107.5	2.1	2.1	13.5	3.5	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	3.0	3.1	1.7	3.7	3.8	6.8	4.9	5.1	1.8	6.5	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	109.6	29.1	29.2	53.2	33.0	33.1	142.0	16.1	16.0	48.3	19.3	19.3
LnGrp LOS	F	C	C	D	C	C	F	B	B	D	B	B
Approach Vol, veh/h		501			507			1002			1039	
Approach Delay, s/veh		48.6			35.9			35.9			21.6	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	39.9	7.8	18.9	10.0	38.3	9.0	17.7
Change Period (Y+Rc), s	4.0	4.9	4.0	4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	6.0	24.2	5.0	22.0	6.0	24.2	5.0	22.0
Max Q Clear Time (g_c+I1), s	5.4	14.2	5.0	9.4	8.0	17.4	7.0	10.7
Green Ext Time (p_c), s	0.0	4.9	0.0	1.9	0.0	4.1	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	33.1
HCM 6th LOS	C

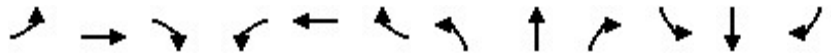
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	137	9	126	79	49	6	219	90	50	168	9
Future Volume (veh/h)	35	137	9	126	79	49	6	219	90	50	168	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	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	37	144	7	133	83	31	6	231	64	53	177	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	879	41	910	815	304	296	334	93	206	429	12
Arrive On Green	0.63	0.63	0.63	0.63	0.63	0.63	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	269	1401	65	1236	1298	485	1202	1410	391	1084	1810	51
Grp Volume(v), veh/h	188	0	0	133	0	114	6	0	295	53	0	182
Grp Sat Flow(s),veh/h/ln	1734	0	0	1236	0	1783	1202	0	1800	1084	0	1861
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.7	0.3	0.0	9.7	3.0	0.0	5.4
Cycle Q Clear(g_c), s	2.7	0.0	0.0	2.0	0.0	1.7	5.7	0.0	9.7	12.8	0.0	5.4
Prop In Lane	0.20		0.04	1.00		0.27	1.00		0.22	1.00		0.03
Lane Grp Cap(c), veh/h	1155	0	0	910	0	1119	296	0	427	206	0	441
V/C Ratio(X)	0.16	0.00	0.00	0.15	0.00	0.10	0.02	0.00	0.69	0.26	0.00	0.41
Avail Cap(c_a), veh/h	1155	0	0	910	0	1119	488	0	714	379	0	739
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	0.00	0.00	0.79	0.00	0.79	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.0	0.0	0.0	4.9	0.0	4.8	23.4	0.0	22.6	28.5	0.0	21.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.3	0.0	0.1	0.0	0.0	2.0	0.7	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	0.6	0.0	0.5	0.1	0.0	4.1	0.8	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.3	0.0	0.0	5.1	0.0	5.0	23.4	0.0	24.6	29.1	0.0	21.6
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		188			247			301			235	
Approach Delay, s/veh		5.3			5.1			24.6			23.3	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	45.4	19.6	45.4	19.6
Change Period (Y+Rc), s	4.6	* 4.2	4.6	* 4.2
Max Green Setting (Gmax), s	30.4	* 26	30.4	* 26
Max Q Clear Time (g_c+I1), s	4.7	14.8	4.0	11.7
Green Ext Time (p_c), s	1.5	0.9	1.6	1.5

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	269	22	162	240	69	30	547	268	90	281	13
Future Volume (veh/h)	25	269	22	162	240	69	30	547	268	90	281	13
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	26	283	17	171	253	52	32	576	154	95	296	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	285	530	32	336	457	94	644	1918	856	438	1893	64
Arrive On Green	0.61	0.61	0.61	0.30	0.30	0.30	0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	1074	1747	105	1079	1505	309	1073	3554	1585	726	3508	118
Grp Volume(v), veh/h	26	0	300	171	0	305	32	576	154	95	150	156
Grp Sat Flow(s),veh/h/ln	1074	0	1851	1079	0	1815	1073	1777	1585	726	1777	1849
Q Serve(g_s), s	1.1	0.0	6.1	9.7	0.0	9.1	1.0	5.8	3.2	5.4	2.7	2.8
Cycle Q Clear(g_c), s	10.3	0.0	6.1	15.8	0.0	9.1	3.8	5.8	3.2	11.2	2.7	2.8
Prop In Lane	1.00		0.06	1.00		0.17	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	285	0	562	336	0	550	644	1918	856	438	959	998
V/C Ratio(X)	0.09	0.00	0.53	0.51	0.00	0.55	0.05	0.30	0.18	0.22	0.16	0.16
Avail Cap(c_a), veh/h	424	0	800	476	0	784	644	1918	856	438	959	998
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)	0.99	0.00	0.99	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.2	0.0	10.1	24.2	0.0	19.0	8.5	8.2	7.6	11.3	7.5	7.5
Incr Delay (d2), s/veh	0.1	0.0	0.8	1.2	0.0	0.9	0.1	0.4	0.5	1.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.9	2.4	0.0	3.7	0.2	1.9	1.0	0.9	0.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	0.0	10.9	25.4	0.0	19.8	8.6	8.6	8.1	12.4	7.9	7.9
LnGrp LOS	B	A	B	C	A	B	A	A	A	B	A	A
Approach Vol, veh/h		326			476			762			401	
Approach Delay, s/veh		11.2			21.8			8.5			8.9	
Approach LOS		B			C			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	40.4	24.6	40.4	24.6
Change Period (Y+Rc), s	5.3	* 4.9	5.3	* 4.9
Max Green Setting (Gmax), s	26.7	* 28	26.7	* 28
Max Q Clear Time (g_c+I1), s	7.8	12.3	13.2	17.8
Green Ext Time (p_c), s	6.0	1.7	2.7	1.9

Intersection Summary	
HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

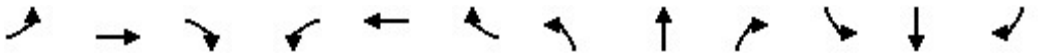
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑				↱			↱
Traffic Vol, veh/h	0	2000	0	0	0	0	0	0	200	0	0	0
Future Vol, veh/h	0	2000	0	0	0	0	0	0	200	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Yield	Yield	Yield	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2105	0	0	0	0	0	0	211	0	0	0

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	-	-	-	0			-	-	1
Stage 1	-	-	-	-	-	-			-	-	-
Stage 2	-	-	-	-	-	-			-	-	-
Critical Hdwy	-	-	-	-	-	-			-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			-	-	-
Follow-up Hdwy	-	-	-	-	-	-			-	-	3.32
Pot Cap-1 Maneuver	0	-	0	0	-	0			0	0	1083
Stage 1	0	-	0	0	-	0			0	0	-
Stage 2	0	-	0	0	-	0			0	0	-
Platoon blocked, %		-			-						
Mov Cap-1 Maneuver	-	-	-	-	-	-			-	0	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-			-	0	-
Stage 1	-	-	-	-	-	-			-	0	-
Stage 2	-	-	-	-	-	-			-	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	642	295	190	270	187	324	552	214	509	845	858
Future Volume (veh/h)	70	642	295	190	270	187	324	552	214	509	845	858
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	74	676	62	200	284	0	341	581	65	536	889	819
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	763	340	218	1042		531	1066	475	538	1036	547
Arrive On Green	0.05	0.21	0.21	0.12	0.29	0.00	0.15	0.30	0.30	0.16	0.29	0.29
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	74	676	62	200	284	0	341	581	65	536	889	819
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	3.7	16.6	2.9	10.0	5.5	0.0	8.3	12.3	1.8	14.0	21.3	21.6
Cycle Q Clear(g_c), s	3.7	16.6	2.9	10.0	5.5	0.0	8.3	12.3	1.8	14.0	21.3	21.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	763	340	218	1042		531	1066	475	538	1036	547
V/C Ratio(X)	0.78	0.89	0.18	0.92	0.27		0.64	0.55	0.14	1.00	0.86	1.50
Avail Cap(c_a), veh/h	218	794	354	218	1042		538	1070	477	538	1070	562
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	34.3	28.9	39.1	24.4	0.0	35.8	26.4	10.3	38.0	30.1	16.4
Incr Delay (d2), s/veh	5.0	11.5	0.3	38.6	0.6	0.0	2.0	2.0	0.6	38.0	9.2	233.0
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	1.7	8.1	1.1	6.6	2.3	0.0	3.6	5.3	1.0	8.5	10.0	42.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	45.8	29.1	77.7	25.1	0.0	37.7	28.4	10.9	76.0	39.3	249.4
LnGrp LOS	D	D	C	E	C		D	C	B	E	D	F
Approach Vol, veh/h		812			484	A		987			2244	
Approach Delay, s/veh		44.7			46.8			30.5			124.7	
Approach LOS		D			D			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	24.2	18.7	31.1	8.8	31.3	18.0	31.9
Change Period (Y+Rc), s	4.9	* 4.9	4.9	* 4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	11.0	* 20	14.0	* 27	11.0	20.1	14.0	27.1
Max Q Clear Time (g_c+I1), s	12.0	18.6	10.3	23.6	5.7	7.5	16.0	14.3
Green Ext Time (p_c), s	0.0	0.7	0.3	2.7	0.0	1.3	0.0	3.3

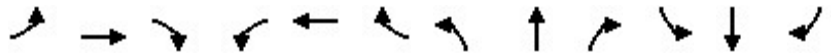
Intersection Summary	
HCM 6th Ctrl Delay	81.5
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



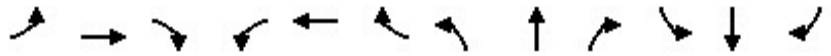
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	1156	246	243	707	70	207	50	214	76	21	29
Future Volume (veh/h)	76	1156	246	243	707	70	207	50	214	76	21	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	80	1217	239	256	744	67	218	53	51	80	22	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	486	1718	335	320	2047	184	328	338	286	215	58	34
Arrive On Green	0.04	0.58	0.58	0.08	0.62	0.62	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1781	2966	578	1781	3297	297	1368	1870	1585	821	320	190
Grp Volume(v), veh/h	80	725	731	256	401	410	218	53	51	119	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1766	1781	1777	1817	1368	1870	1585	1331	0	0
Q Serve(g_s), s	1.6	26.1	26.7	4.9	9.9	9.9	6.1	2.2	2.5	5.6	0.0	0.0
Cycle Q Clear(g_c), s	1.6	26.1	26.7	4.9	9.9	9.9	13.9	2.2	2.5	7.8	0.0	0.0
Prop In Lane	1.00		0.33	1.00		0.16	1.00		1.00	0.67		0.14
Lane Grp Cap(c), veh/h	486	1029	1023	320	1103	1128	328	338	286	307	0	0
V/C Ratio(X)	0.16	0.70	0.71	0.80	0.36	0.36	0.66	0.16	0.18	0.39	0.00	0.00
Avail Cap(c_a), veh/h	592	1029	1023	351	1103	1128	425	470	398	407	0	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	0.68	0.68	0.68	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.2	13.5	13.6	16.6	8.3	8.3	35.9	31.1	31.2	33.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	4.0	4.3	7.1	0.6	0.6	1.1	0.1	0.1	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	0.5	10.0	10.1	3.6	3.4	3.4	4.7	1.0	0.9	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	17.5	17.8	23.7	9.0	9.0	37.0	31.2	31.3	33.9	0.0	0.0
LnGrp LOS	A	B	B	C	A	A	D	C	C	C	A	A
Approach Vol, veh/h		1536			1067			322			119	
Approach Delay, s/veh		17.1			12.5			35.2			33.9	
Approach LOS		B			B			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.4	57.9		21.6	6.7	61.7		21.6
Change Period (Y+Rc), s	3.5	5.8		5.4	3.5	5.8		5.4
Max Green Setting (Gmax), s	8.5	44.2		22.6	8.5	44.2		22.6
Max Q Clear Time (g_c+I1), s	6.9	28.7		9.8	3.6	11.9		15.9
Green Ext Time (p_c), s	0.1	8.6		0.3	0.0	5.3		0.4

Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	1198	226	151	762	114	163	325	252	206	323	82
Future Volume (veh/h)	62	1198	226	151	762	114	163	325	252	206	323	82
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	65	1261	226	159	802	111	172	342	39	217	340	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	403	1335	237	193	984	136	206	578	258	295	470	210
Arrive On Green	0.23	0.44	0.44	0.11	0.31	0.31	0.12	0.16	0.16	0.09	0.13	0.13
Sat Flow, veh/h	1781	3015	536	1781	3135	434	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	65	739	748	159	454	459	172	342	39	217	340	10
Grp Sat Flow(s),veh/h/ln	1781	1777	1774	1781	1777	1792	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	2.6	35.6	36.5	7.8	21.2	21.2	8.5	8.0	1.9	5.5	8.2	0.3
Cycle Q Clear(g_c), s	2.6	35.6	36.5	7.8	21.2	21.2	8.5	8.0	1.9	5.5	8.2	0.3
Prop In Lane	1.00		0.30	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	403	787	785	193	558	562	206	578	258	295	470	210
V/C Ratio(X)	0.16	0.94	0.95	0.82	0.82	0.82	0.83	0.59	0.15	0.73	0.72	0.05
Avail Cap(c_a), veh/h	403	792	790	298	693	699	278	1266	565	577	1266	565
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	23.9	24.1	39.2	28.4	28.4	38.8	34.8	32.3	40.1	37.4	12.7
Incr Delay (d2), s/veh	0.1	18.8	21.3	5.8	6.5	6.5	11.3	0.7	0.2	1.3	1.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	17.5	18.3	3.6	9.4	9.5	4.2	3.4	0.7	2.3	3.5	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.0	42.7	45.4	45.0	34.9	34.9	50.2	35.5	32.5	41.4	39.0	12.8
LnGrp LOS	C	D	D	D	C	C	D	D	C	D	D	B
Approach Vol, veh/h		1552			1072			553			567	
Approach Delay, s/veh		43.4			36.4			39.9			39.4	
Approach LOS		D			D			D			D	

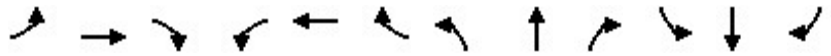
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	44.8	14.4	16.9	25.3	33.2	11.7	19.6
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	5.0	* 5	4.0	5.0
Max Green Setting (Gmax), s	15.0	40.0	14.0	32.0	15.0	* 35	15.0	32.0
Max Q Clear Time (g_c+I1), s	9.8	38.5	10.5	10.2	4.6	23.2	7.5	10.0
Green Ext Time (p_c), s	0.1	1.3	0.1	1.6	0.0	5.0	0.2	1.7

Intersection Summary	
HCM 6th Ctrl Delay	40.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



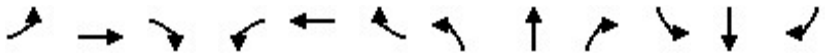
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	339	1005	47	94	762	69	342	1130	187	116	785	397
Future Volume (veh/h)	339	1005	47	94	762	69	342	1130	187	116	785	397
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	357	1058	46	99	802	68	360	1189	104	122	826	290
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	334	1221	53	170	893	76	356	1309	584	151	872	389
Arrive On Green	0.19	0.35	0.35	0.10	0.27	0.27	0.17	0.37	0.37	0.04	0.25	0.25
Sat Flow, veh/h	1781	3469	151	1781	3316	281	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	357	542	562	99	430	440	360	1189	104	122	826	290
Grp Sat Flow(s),veh/h/ln	1781	1777	1843	1781	1777	1820	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	26.0	39.4	39.4	7.4	32.3	32.3	23.0	44.0	4.5	6.0	31.6	23.4
Cycle Q Clear(g_c), s	26.0	39.4	39.4	7.4	32.3	32.3	23.0	44.0	4.5	6.0	31.6	23.4
Prop In Lane	1.00		0.08	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	334	626	649	170	478	490	356	1309	584	151	872	389
V/C Ratio(X)	1.07	0.87	0.87	0.58	0.90	0.90	1.01	0.91	0.18	0.81	0.95	0.75
Avail Cap(c_a), veh/h	334	702	728	170	509	522	356	1312	585	151	875	390
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	41.8	41.8	60.0	48.8	48.8	42.2	41.5	15.9	45.2	51.4	48.2
Incr Delay (d2), s/veh	68.2	10.8	10.5	3.3	18.5	18.2	50.2	9.6	0.2	25.4	18.9	8.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.8	18.7	19.3	3.5	16.5	16.9	17.3	20.7	2.3	2.4	16.2	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	124.4	52.6	52.3	63.3	67.3	67.0	92.4	51.2	16.1	70.6	70.3	56.4
LnGrp LOS	F	D	D	E	E	E	F	D	B	E	E	E
Approach Vol, veh/h		1461			969			1653			1238	
Approach Delay, s/veh		70.0			66.8			57.9			67.1	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.5	54.0	27.0	38.9	30.0	42.6	10.0	55.9
Change Period (Y+Rc), s	5.3	* 5.3	4.0	4.9	4.0	5.3	4.0	4.9
Max Green Setting (Gmax), s	13.2	* 55	23.0	34.1	26.0	39.7	6.0	51.1
Max Q Clear Time (g_c+I1), s	9.4	41.4	25.0	33.6	28.0	34.3	8.0	46.0
Green Ext Time (p_c), s	0.0	7.4	0.0	0.3	0.0	3.0	0.0	3.9

Intersection Summary	
HCM 6th Ctrl Delay	65.0
HCM 6th LOS	E

Notes

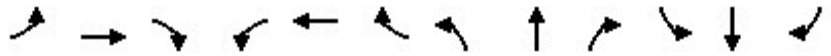
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	730	168	95	461	102	228	1317	99	135	1085	263
Future Volume (veh/h)	256	730	168	95	461	102	228	1317	99	135	1085	263
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	269	768	149	100	485	81	240	1386	97	142	1142	246
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	850	165	119	874	145	119	1200	84	95	998	214
Arrive On Green	0.07	0.29	0.29	0.07	0.29	0.29	0.07	0.36	0.36	0.05	0.34	0.34
Sat Flow, veh/h	1781	2968	576	1781	3049	507	1781	3370	235	1781	2912	623
Grp Volume(v), veh/h	269	460	457	100	282	284	240	729	754	142	694	694
Grp Sat Flow(s),veh/h/ln	1781	1777	1767	1781	1777	1779	1781	1777	1828	1781	1777	1758
Q Serve(g_s), s	5.0	18.7	18.7	4.2	10.1	10.2	5.0	26.7	26.7	4.0	25.7	25.7
Cycle Q Clear(g_c), s	5.0	18.7	18.7	4.2	10.1	10.2	5.0	26.7	26.7	4.0	25.7	25.7
Prop In Lane	1.00		0.33	1.00		0.28	1.00		0.13	1.00		0.35
Lane Grp Cap(c), veh/h	119	509	506	119	509	510	119	633	651	95	609	603
V/C Ratio(X)	2.27	0.90	0.90	0.84	0.55	0.56	2.02	1.15	1.16	1.49	1.14	1.15
Avail Cap(c_a), veh/h	119	521	518	119	521	522	119	633	651	95	609	603
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)	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	25.8	25.8	34.6	22.7	22.7	35.0	24.1	24.1	35.5	24.6	24.6
Incr Delay (d2), s/veh	582.6	10.9	11.0	38.2	1.4	1.4	487.7	85.4	87.8	269.8	81.2	86.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.3	8.7	8.7	3.0	4.1	4.1	18.2	25.3	26.5	8.8	23.7	24.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	617.6	36.6	36.7	72.8	24.1	24.2	522.7	109.5	111.9	305.3	105.9	110.8
LnGrp LOS	F	D	D	E	C	C	F	F	F	F	F	F
Approach Vol, veh/h		1186			666			1723			1530	
Approach Delay, s/veh		168.4			31.4			168.1			126.6	
Approach LOS		F			C			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	31.6	9.0	26.4	9.0	30.6	9.0	26.4
Change Period (Y+Rc), s	4.0	4.9	4.0	4.9	4.0	4.9	4.0	4.9
Max Green Setting (Gmax), s	4.0	26.2	5.0	22.0	5.0	25.2	5.0	22.0
Max Q Clear Time (g_c+I1), s	6.0	28.7	6.2	20.7	7.0	27.7	7.0	12.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.0	0.0	0.0	2.7

Intersection Summary	
HCM 6th Ctrl Delay	137.9
HCM 6th LOS	F



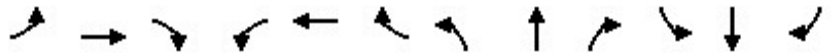
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	191	6	268	202	96	10	355	176	69	340	18
Future Volume (veh/h)	27	191	6	268	202	96	10	355	176	69	340	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	28	201	5	282	213	76	11	374	154	73	358	16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	783	18	700	638	228	336	478	197	214	675	30
Arrive On Green	0.48	0.48	0.48	0.16	0.16	0.16	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	122	1616	38	1176	1316	470	1009	1259	518	875	1777	79
Grp Volume(v), veh/h	234	0	0	282	0	289	11	0	528	73	0	374
Grp Sat Flow(s),veh/h/ln	1776	0	0	1176	0	1786	1009	0	1777	875	0	1856
Q Serve(g_s), s	0.0	0.0	0.0	8.3	0.0	9.3	0.6	0.0	17.0	5.2	0.0	10.2
Cycle Q Clear(g_c), s	4.8	0.0	0.0	13.1	0.0	9.3	10.7	0.0	17.0	22.3	0.0	10.2
Prop In Lane	0.12		0.02	1.00		0.26	1.00		0.29	1.00		0.04
Lane Grp Cap(c), veh/h	923	0	0	700	0	866	336	0	675	214	0	705
V/C Ratio(X)	0.25	0.00	0.00	0.40	0.00	0.33	0.03	0.00	0.78	0.34	0.00	0.53
Avail Cap(c_a), veh/h	923	0	0	700	0	866	353	0	705	229	0	737
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.43	0.00	0.43	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.9	0.0	0.0	19.3	0.0	18.0	19.8	0.0	17.8	27.6	0.0	15.7
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.7	0.0	0.4	0.0	0.0	5.5	0.9	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	4.5	0.0	4.2	0.1	0.0	7.3	1.1	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.5	0.0	0.0	20.0	0.0	18.4	19.9	0.0	23.3	28.6	0.0	16.3
LnGrp LOS	B	A	A	C	A	B	B	A	C	C	A	B
Approach Vol, veh/h		234			571			539			447	
Approach Delay, s/veh		10.5			19.2			23.2			18.3	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	36.1	28.9	36.1	28.9
Change Period (Y+Rc), s	4.6	* 4.2	4.6	* 4.2
Max Green Setting (Gmax), s	30.4	* 26	30.4	* 26
Max Q Clear Time (g_c+I1), s	6.8	24.3	15.1	19.0
Green Ext Time (p_c), s	1.9	0.4	3.7	2.0

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	444	38	211	565	117	62	576	441	115	526	38
Future Volume (veh/h)	32	444	38	211	565	117	62	576	441	115	526	38
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	34	467	35	222	595	111	65	606	297	121	554	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	743	56	426	663	124	357	1460	651	290	1403	81
Arrive On Green	0.86	0.86	0.86	0.43	0.43	0.43	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	742	1718	129	896	1533	286	829	3554	1585	617	3415	197
Grp Volume(v), veh/h	34	0	502	222	0	706	65	606	297	121	288	298
Grp Sat Flow(s),veh/h/ln	742	0	1847	896	0	1819	829	1777	1585	617	1777	1835
Q Serve(g_s), s	2.8	0.0	5.2	13.9	0.0	23.4	3.9	7.9	8.8	11.3	7.4	7.4
Cycle Q Clear(g_c), s	26.2	0.0	5.2	19.1	0.0	23.4	11.3	7.9	8.8	19.1	7.4	7.4
Prop In Lane	1.00		0.07	1.00		0.16	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	164	0	799	426	0	786	357	1460	651	290	730	754
V/C Ratio(X)	0.21	0.00	0.63	0.52	0.00	0.90	0.18	0.42	0.46	0.42	0.39	0.40
Avail Cap(c_a), veh/h	164	0	799	426	0	786	357	1460	651	290	730	754
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)	0.94	0.00	0.94	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.3	0.0	2.9	18.2	0.0	17.1	17.5	13.6	13.9	20.4	13.5	13.5
Incr Delay (d2), s/veh	0.6	0.0	1.5	1.1	0.0	13.1	1.1	0.9	2.3	4.4	1.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.3	2.7	0.0	11.4	0.8	2.9	3.2	1.8	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	0.0	4.3	19.3	0.0	30.3	18.6	14.5	16.2	24.8	15.1	15.0
LnGrp LOS	B	A	A	B	A	C	B	B	B	C	B	B
Approach Vol, veh/h		536			928			968			707	
Approach Delay, s/veh		5.1			27.6			15.3			16.7	
Approach LOS		A			C			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	32.0	33.0	32.0	33.0
Change Period (Y+Rc), s	5.3	* 4.9	5.3	* 4.9
Max Green Setting (Gmax), s	26.7	* 28	26.7	* 28
Max Q Clear Time (g_c+I1), s	13.3	28.2	21.1	25.4
Green Ext Time (p_c), s	6.1	0.0	2.7	1.5

Intersection Summary	
HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑				↱			↱
Traffic Vol, veh/h	0	2000	0	0	0	0	0	0	200	0	0	0
Future Vol, veh/h	0	2000	0	0	0	0	0	0	200	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Yield	Yield	Yield	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2105	0	0	0	0	0	0	211	0	0	0

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	-	-	-	0			-	-	1
Stage 1	-	-	-	-	-	-			-	-	-
Stage 2	-	-	-	-	-	-			-	-	-
Critical Hdwy	-	-	-	-	-	-			-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			-	-	-
Follow-up Hdwy	-	-	-	-	-	-			-	-	3.32
Pot Cap-1 Maneuver	0	-	0	0	-	0			0	0	1083
Stage 1	0	-	0	0	-	0			0	0	-
Stage 2	0	-	0	0	-	0			0	0	-
Platoon blocked, %		-			-						
Mov Cap-1 Maneuver	-	-	-	-	-	-			-	0	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-			-	0	-
Stage 1	-	-	-	-	-	-			-	0	-
Stage 2	-	-	-	-	-	-			-	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

APPENDIX D – DETAILED RESPONSES IN SUPPORT OF DETERMINING PLANS, PROGRAMS, ORDINANCES, OR POLICIES APPLICABILITY

D.1 Review of Consistency with City of Long Beach Mobility Element 2035

City of Long Beach Mobility Element 2035 is the City's document to guide the operations and design of streets and other public rights of way. It lays out a vision for improving the way people, goods, and resources move from place to place. The Mobility Element addresses all modes of travel, and in addition to improving mobility and accessibility to opportunities, the plan is about enhancing the quality of life for today's generation, as well as generations to come. The Project's proposed land use and operations design features were reviewed and compared to existing and future conditions resulting from the Project, including site access, high injury corridor identification, and pedestrian, bicycle, and transit accessibility. The following policies and programs are relevant to the Project:

Goal 1): Create a safe, efficient, balanced, and multimodal mobility network (Page 72).

- The Project does not conflict with or prevent the City from pursuing this program.

Strategy No. 1): Establish a network of complete streets that complements the related street type (Page 90). The project includes internal sidewalk infrastructure for pedestrians, along with connectivity to Wardlow Road and Golden Avenue. Additionally, on-site bicycle parking will be provided to encourage active transportation.

- The Project does not conflict with or prevent the City from pursuing this program.

Strategy No. 2): Establish a network of complete streets that complements the related street type (Page 90).

- The Project does not conflict with or prevent the City from pursuing this program.

Strategy No. 3): Strategically improve congested intersections and corridors (Page 97).

- The Project does not conflict with or prevent the City from pursuing this program.

Strategy No. 5): Reduce the environmental impacts of the transportation system (Page 97). The project does not result in a VMT impact, which is the CEQA metric aligned with achieving the State's goal of reducing GHG emissions.

- The Project does not conflict with or prevent the City from pursuing this program.

Strategy No. 6): Manage the supply of parking (Page 100). The Project includes on-street parking, with the majority of supply dedicated to off-street (garage) parking.

- The Project does not conflict with or prevent the City form pursuing this program.

The City's Mobility Element describes several programs (starting on Page 116):

- The Metro Blue Line (or A Line) Wardlow Station Park and Ride capital project. This project would develop increased vehicle capacity at the station to encourage ridesharing, transit use, and multimodal connectivity.
    - The Project does not conflict with or prevent the City form pursuing this program. The Project is located with a half-mile of the Wardlow transit station.

- Signal improvements along Magnolia Avenue. This project includes video detection, signal coordination, and wireless communications; from Wardlow Road to Ocean Boulevard.
    - The Project does not conflict with or prevent the City form pursuing this program.
- Long Beach Boulevard/Wardlow Road and the I-405 ramp reconfiguration. This project includes ramp reconfiguration to improve connections to Long Beach Boulevard and reduce congestion at Pacific Place & Wardlow Road.
    - The Project does not conflict with or prevent the City form pursuing this program.
- Wardlow Road Corridor Improvements. Design and implement corridor improvements on Wardlow Road between Long Beach Boulevard and Cherry Avenue, including freeway ramp access configuration, sidewalk improvements, and signal system upgrades.
    - The Project does not conflict with or prevent the City form pursuing this program.
- Santa Fe Avenue Streetscape Enhancements. Design and implement streetscape enhancements on Santa Fe Avenue from Pacific Coast Highway to Wardlow Road.
    - The Project does not conflict with or prevent the City form pursuing this program.

D.2 Review of Consistency with City of Long Beach Housing Element

The Housing Element provides the City with a roadmap for accommodating the projected number of housing units, identified under the Regional Housing Needs Assessment (RHNA), needed to house existing and future City residents. The Housing Element also helps guide future decisions that impact housing. The plan aims to achieve a number of overarching goals, including increasing housing production, improving access to affordable housing, and promote fair housing choice for all. In the current housing and economic climate, a major focus of the 2021 Housing Element Update is on removing barriers to housing production to counter well-documented housing shortages, as well as addressing homelessness and ensuring the availability and fair distribution of affordable housing throughout the City to reverse existing patterns of segregation and concentrated poverty. The following policies and programs are relevant to the Project:

- Policy 3.5): Continue to improve streets and drainage, sidewalks and alleys, green spaces and park, street trees, and other public facilities, amenities and infrastructure (Page 103).
    - The Project does not conflict with or prevent the City form pursuing this program.
- Policy 4.5): Encourage residential development along transit corridors, in the downtown and close to employment, transportation and activity centers; and encourage infill and mixed-use developments in designated districts (Page 104).
    - The Project does not conflict with or prevent the City form pursuing this program.
- Program 2.5 Universal Design): Universal Design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. The City promotes these principles by enforcing the American's With Disabilities Act (ADA), providing a visibility ordinance for City-assisted new construction of single family homes and duplexes, and sponsoring a City Disability Commission (Page X).

- The Project does not conflict with or prevent the City form pursuing this program.

D.3 Review of Consistency with Safe Streets Long Beach

Safe Streets Long Beach is a plan that strives to eliminate traffic-related fatalities and serious injuries in Long Beach by 2026 through multiple strategies, such as modifying streets to better serve vulnerable road users. The plan uses data analysis, community input, and best practice research to identify programs and policies that can make the streets safer for everyone. The Project meets the goals and objectives set forth in the Vision Zero plan. The pedestrian points of access will be provided along Wardlow Road and Baker Street, and bicycle parking will be provided on site. The Project is located in the vicinity of the Los Cerritos safe route to school map area. Projects located on the High Injury Corridor (HIC) should make improvements or fund them. The Project is not located on a High Injury Corridor, as identified in the plan. No specific Vision Zero projects are planned for Wardlow Road next to the Project, and the Project will not conflict with the implementation of future Vision Zero projects in the public right-of-way. The following action is relevant to the Project:

- Keystone Action #2): Lower Vehicle Speeds (Page 18).
  - The Project does not conflict with or prevent the City form pursuing this program.